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Factors linked to extramarital sex and its relationship with HIV infection: a cross-sectional analytical study in Southwestern Uganda

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Abstract

Background The rising prevalence of extramarital sexual networking has led to increasing susceptibility to HIV infection among married couples. This study aimed to determine the prevalence of extramarital sex among married individuals in Mbarara Regional Referral Hospital, the factors linked to it and its relationship with HIV.

Methods Data were collected using an interviewer-administered questionnaire. Participants were clients seeking HIV testing at a tertiary hospital in southwestern Uganda between June and September 2025. All clients received standard pre- and post-test counselling. Data was analyzed using Stata version 17.

Results The study included a sample of 384 participants, with an almost equal distribution across the genders (50.3% female; 49.7% male). The prevalence of extramarital sex was 58.1% (95% CI: 0.51–0.65) among men and 8.2% (95% CI: 0.05–0.13) in women. Among those who reported extramarital sex, the prevalence of HIV was 10.5% (95% CI: 0.07–0.16) and 5.1% (95% CI: 0.03–0.13) for men and women respectively. An equal number (8) of men and women who denied involvement in extramarital sex were also diagnosed with HIV. The results suggested no relationship between extramarital sex and HIV (OR 0.9, 95% CI: 0.38–1.90, $p=0.7$). However, women were found to be at an increased risk of acquiring HIV (RR=2.02, 95% CI: 0.91–4.47) compared to men. Multivariate logistic regression identified the following factors to be linked to extramarital sex: being male (aOR=16.4, 95% CI: 9.13–29.41, $p<0.001$), monogamous marriage status (aOR=3.2, 95% CI: 1.51–6.93, $p=0.002$), marital duration exceeding 19 years (aOR=3.8, 95% CI: 1.92–7.56, $p<0.001$), being Muslim (aOR=2.4, 95% CI: 1.04–5.49, $p=0.04$), alcohol consumption (aOR=3.5, 95% CI: 2.14–5.58, $p<0.001$), sexual dissatisfaction among females (aOR=11.1, 95% CI: 3.82–15.14, $p<0.001$) and sharing workplace (aOR=7.6, 95% CI: 0.96–61.01, $p=0.05$). Conversely, factors negatively linked to extramarital sex in this study included identifying as female (aOR=0.7, 95% CI: 0.03–0.14, $p<0.001$), and having no formal education (aOR=0.3, 95% CI: 0.09–0.63, $p=0.003$).

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Conclusion The study observed a high rate of extramarital sex in the study setting. This was a baseline study. Therefore, subsequent research is needed to identify the underlying reasons for seeking extramarital affairs in Southwestern Uganda.

Contributions to the literature

What is known Uganda currently contends with one of the world's highest prevalence rates of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). Compounding this challenge, recent trends show a notable increase in the incidence of HIV infection, specifically among married couples, signaling that marriage might no longer be the protective factor it once was.

Our contribution In addressing this critical public health issue, this paper reveals the influential factors for extramarital sexual networking, subsequently proposing actionable solutions to curb this high-risk practice.

Keywords Extramarital sex, Extramarital affairs and HIV, Associated factors for extramarital sex, Extramarital relationships

Background

Extramarital sex has progressively increased the risk of HIV infection [1]. Extramarital sex is any circumstance in which a person engages in sex with someone other than their spouse or stable partner (Kasamba et al. 2011a; [2]). It is also referred to as an extra-dyadic relationship, extramarital affair, sexual concurrence or cheating [3]. Globally, an estimated 45 million people are infected with HIV, with two-thirds residing in sub-Saharan Africa (SSA) [4]. According to the United Nations Programme on HIV/AIDS (UNAIDS), 1.3 million people acquire HIV in the world annually, and half of them are in SSA [4]. These new infections stem from unprotected heterosexual intercourse [5], and the majority of them are a result, long-term relationships [6].

Accordingly, marriage is increasingly becoming a risk factor for HIV infection [7, 8]. This is partly attributed to married couples' perceived low vulnerability to HIV, increased sex frequency, and low condom use in and outside marriages [9], Nabukenya et al., 2020a). As a result, long-term relationships account for 80% of new HIV infections in Africa [6]. Unlike unmarried partners, married partners tend to underestimate their partner's potential to engage in risky sexual behaviors. This, therefore, reduces the need to discuss HIV prevention measures such as condom use [10]. In addition, women in some societies are not expected to suggest safer sex measures with their husbands, let alone decline sex in marriage [11, 12]. According to studies done in Uganda, it is estimated that one-third of HIV infections originate from extramarital relationships [13]. This is a concerning statistic given that nearly half of the country's adult population is married [14].

Factors predicting involvement in these extra-dyadic relationships are mainly categorized as intrapersonal or interpersonal attributes. Common intrapersonal predictors include demographic and individual characteristics such as age, gender, religion, level of education attained and personality traits [15]. However, not all research

confirms religion's influence on extramarital relationships. A consistent finding is that greater spirituality is associated with a lower likelihood of engaging in the practice [16]. Social and relationship factors also play a role, such as peer influence, residence, type of marriage, marriage duration, alcohol consumption and level of income [17, 18]. For instance, studies have found an inverse correlation between income, opportunity and extramarital relationships regarding gender. Specifically, literature suggests a positive link between high income in men and increased opportunities for engaging in extramarital sex with multiple partners [12]. Conversely, higher income in women has been associated with a lower likelihood of engaging in extramarital relations [19]. Beyond financial considerations, environmental factors such as constant workplace proximity is thought to increase the likelihood of attraction between male and female colleagues. Specifically, Pierce's theory postulates that closer physical and functional distances resulting from repeated interactions make workmates more susceptible to developing attraction [20]. Societal factors like cultural tolerance of multiple sexual partners for men also play a key role in perpetuating this practice. For instance, some cultures in Uganda consider sexual concurrence as acceptable among men [14].

Historically, women have been viewed as the primary population vulnerable to acquiring HIV from their spouses [9, 21]. However, the traditional view that women are less involved in extramarital affairs may be shifting [22]. This is supported by data from Kasirye [23] showing a higher rate of HIV serodiscordance (where one partner is HIV-positive and the other is not) among married women compared to married men. This higher health risk, despite women self-reporting lower rates of extramarital sex, could be a strong indicator of unfaithfulness that is not being captured in surveys. Further studies indicate that women are less likely than men to disclose an affair, making the health data a potentially more reliable measure of their actual involvement [23].

Beyond the risks of HIV infection and other sexually transmitted infections (STIs), extramarital engagements can precipitate a multitude of adverse outcomes. Families become dysfunctional, leading to marital crises, poor parenting, and occupational problems, in addition to domestic violence, divorce, spousal homicide, and suicidal thoughts/attempts [24–26]. Given the serious and far-reaching consequences that extramarital affairs have on both partners and their children, it is essential to investigate the possible factors that facilitate the practice.

To mitigate these severe consequences, interventions targeting couples are crucial in reducing concurrent sexual relationships. The Ugandan government, in collaboration with non-governmental organizations and religious institutions, have invested significant effort in public sensitization campaigns promoting abstinence, consistent condom use, and marital fidelity. Despite these initiatives, the national prevalence of HIV has remained still, at 5.1% and the number of new HIV infections has continued to rise in some regions of the country (HIV/AIDS Fact sheet 2023, Uganda, unpublished). The Southwestern region of Uganda is particularly affected, ranking as the second most impacted area. The HIV prevalence in this region is 14.4%, which is three times the national prevalence (HIV/AIDS Fact sheet 2023, Uganda, unpublished). This has been attributed to some factors, such as poverty, lack of accessibility to medical care, low rates of condom usage, the presence of multiple sexual partnerships, and pervasive gender inequality [27]. Much as multiple sexual relationships in marriage contribute heavily to the spread of HIV in this part of the world [23], the influencers of the practice are still underexplored. Understanding the factors underlying extramarital affairs is crucial for developing focused and effective HIV prevention strategies that also foster healthy relationships.

Based on the Health Belief Model [28], we hypothesized that extramarital sex prevention efforts by the Ministry of Health, Uganda, will succeed when the public recognizes the implications of extramarital sex, believes in their ability to resist it, and values the benefits of a healthy marriage. Therefore, this study aimed to determine the prevalence of extramarital sex among men and women in a hospital setting, identify the linked factors, and propose practical solutions.

Methods

Study setting

The study was based at the outpatient clinic of Mbarara Regional Referral Hospital (MRRH), a high-volume government facility in southwestern Uganda, located approximately 260 km from the capital, Kampala. As the center for health business, the hospital serves over 12 surrounding districts and draws a geographically diverse patient population. This setting was

strategically chosen because of its established counseling and testing HIV protocols, and also its location in an area that is highly affected by HIV. All patients in this hospital are routinely screened, assured of confidentiality, offered pre-test counselling and engaged in risk assessment/reduction discussions before and after testing. Therefore, the researchers assumed that this process fostered the trust and openness necessary for patients to provide honest responses to the study's sensitive questions on sexuality. This clinic serves an average of 5,883 male and 8,035 female patients monthly (Hospital records, unpublished). Given this high volume, a sample size of 384 participants was deemed tenable for the study.

Study design and population

We used a cross-sectional analytical study design to collect data from 384 participants. The study included married men and women aged 18 to 63 years. We included all clients who sought an HIV test at the outpatient clinic of Mbarara Regional Referral Hospital between June and September 2025. Those who were eligible but too sick or unwilling to participate in the study were excluded. We did not register any couples where both individuals admitted to extramarital sex. Consequently, no couple met the criteria for inclusion in this study.

Selection of participants and sample size

Consecutive sampling was used to recruit all eligible participants who presented at the hospital outpatient clinic. The required sample size was calculated using the Kish-Leslie formula for determining the prevalence of an unknown population proportion. We assumed an expected population proportion (p) of 50% to be engaging in extramarital sex, at a 95% confidence level and a 5% margin of error (d). The calculation yielded a total sample size of 384 participants.

Measurement of study variables

The dependent variables were: extramarital sex and an individual's HIV status, while the independent variables were age, gender, religion, residence, education level, marital type, marital duration, alcohol consumption, peer influence, sharing workplace and sexual dissatisfaction. Data focused on married/cohabiting individuals with an identifiable partner of the opposite sex. Individuals were considered to be married if they were officially wedded in a church/mosque or had had a civil marriage. Those who had a formal introduction ceremony with a fully paid bride price and parents' approval were also considered as married in accordance with the customary marriage registration act of Uganda [29]. Individuals were considered to be cohabiting if they had been living together as husband and wife for 2 years, as presumed by the Ugandan

law. Therefore, for this study, the term “married” was used to refer to both officially married couples and the cohabiting couples since both categories involve a man and a woman living together in a sexual relationship.

The primary outcomes were self-reported engagement in extramarital sex and HIV status. Individuals who were tested and diagnosed with HIV were categorized as HIV “positive” coded “2” and those who were found to be HIV free were considered to be HIV “negative,” coded “1”. Current extramarital sex was assessed by asking the participant, “Have you been involved in sexual intercourse with a person who is not your wife/husband in the last 12 months?”. Participants who responded in the affirmative were considered to have been engaged in an extramarital sexual relationship coded “1” and those who responded in the contrary were considered as having not been involved in the practice coded “2”. We categorized the type of marriage as either monogamous or polygamous. To obtain information on polygamy, we asked the men if they had more than one woman whom they regarded as a spouse and the women if their partners had other women they regarded as their spouses. Monogamy was defined as a man having only one partner whom he considered as a spouse, or where a woman reported not knowing other women that her partner considers as his spouses. The other independent factors included in the study can be found in the data collection tool (see Appendix 1).

Data collection method

Data were collected by the primary author (who is also a trained counsellor) and one research assistant (a diploma holder clinical officer) using a semi-structured interviewer-administered questionnaire. The questionnaire was administered by the interviewers specifically to guarantee the quality and completeness of the data. This method also allowed interviewers to monitor participants for any signs of discomfort arising from the sensitive questions, enabling them to offer immediate intervention if necessary. The research assistant was trained for one day on how to effectively collect data for this study. The measurement tool was developed based on literature from previous studies and validated by the Department of Psychiatry of Mbarara Regional Referral Hospital. It was developed in English and then translated into the local language (Runyankore). It was subsequently pre-tested to ensure clarity, validity, and comprehensibility among the study participants. We informed the participants of the aims, potential benefits and risks of participating in this study and how participation was voluntary. The participants were also assured of confidentiality, anonymity, and their right to withdraw from the study in case they felt uncomfortable without facing any penalty. After

obtaining written informed consent, we conducted face-to-face interviews in a private, quiet room for privacy and encouraged them to be open and truthful while sharing information. The questionnaire was composed of 23 items in five sections: sociodemographic data, substance use, extramarital sex, sexual satisfaction and partner protection. The sociodemographic characteristics included age, gender, duration of marriage, type of marriage, religion, educational level, place of residence and occupation. The substance use section inquired about alcohol or energy drink consumption. The extramarital sex section inquired about the number of partners engaged with in the past 12 months, whether they share a workplace and means of HIV prevention. The sexual satisfaction section inquired about one’s perception of sexual satisfaction and whether their primary partners satisfy them. Partner protection inquired about the measures taken to protect the primary partner after an affair. To obtain data for the HIV status, respondents were counselled appropriately, asked to give informed consent and tested using a standard of care test. Those who were newly diagnosed with HIV were given psychosocial counselling and linked to HIV care. 436 participants were approached, but 52 of them declined to participate in this study. Nonetheless, data collection continued until the desired sample size was achieved. All 384 questionnaires were successfully filled out. The interviews took about 30 min.

Data analysis

Microsoft Excel was used for data entry. Data were then cleaned and verified for accuracy. It was transferred to Stata version 17 for analysis. Data were coded according to the nature of the variables, screened using descriptive statistics and no missing cases were identified. The dependent variables, involvement in extramarital sex and HIV status, were analyzed as dichotomous variables; the participant had either engaged in extramarital sex or not and was either HIV positive or negative. The descriptive statistics are presented as frequencies and proportions. A Chi-square test was used for bivariate analysis to establish relationships between categorical independent and dependent variables. Variables with a p -value ≤ 0.1 at the bivariate level were taken into the multivariate model. Multivariate logistic regression was then done, where the factors linked to extramarital sex were identified and the relationship between extramarital sex and HIV was established. At this level, variables that attained a p -value ≤ 0.05 at a 95% confidence level were reported as the factors linked to extramarital sex. In the logistic regression model, confounders were controlled by using multiple regression and the reference categories were “0” for “Yes” and “1” for “No”. All variables at multivariate

level were checked for multicollinearity and the corresponding Variance Inflation Factors were less than 5 ($VIF < 5$). The model's goodness of fit was 0.8.

Results

The study participants were split almost evenly between the genders, with females slightly outnumbering males. Their ages spanned a wide range (18–63, mode = 36), though the most common age observed was in the mid-thirties. In terms of religion, the Anglican faith was the most prevalent among the group. A substantial majority of the participants were in monogamous marriages, and most of the sample lived in urban areas. Regarding the length of their marriages, the participants tended to fall into two major groups: those who were married for less than five years and those who were married for more than two decades. The highest proportion of the participants had attained a secondary level of education (see Table 1).

Table 1 Characteristics of study participants ($N=384$)

Characteristic	Frequency	Percentage
Gender		
Female	193	50.3
Male	191	49.7
Age		
30–39	123	32
40–49	90	23.4
20–29	81	21.1
50–59	52	13.5
60 and above	32	9.9
Religion		
Anglican	129	33.6
Catholic	108	28.4
Pentecostal	85	22.1
Moslem	61	15.9
Marriage type		
Monogamous	338	88
Polygamous	46	12
Marital duration		
1–4	114	29.7
20 and above	99	25.8
5–9	91	23.7
10–14	47	12.3
15–19	33	8.6
Educational level		
Secondary	134	34.9
Primary	115	29.9
Tertiary	90	23.4
None	45	11.7
Residence		
Urban	224	58.3
Rural	160	41.7

The prevalence of extramarital sex was 58.1% (95% CI: 0.51–0.65) among men and 8.2% (95% CI: 0.05–0.13) in women. The overall prevalence of HIV was at 9.2% (95% CI: 0.89–0.94). A significantly low proportion of the participants who reported extramarital sex admitted occasional condom use in their alternative relationships; 4 (3.5%) and 2 (12.5%) men and women respectively. Among those who reported extramarital sex, the prevalence of HIV was 10.5% (95% CI: 0.1–0.16) and 5.1% (95% CI: 0.03–0.13) for men and women respectively (see Fig. 1). Remarkably, the HIV positivity rate was higher among those who did not report extramarital sex compared to those reported in the affirmative (see Table 2). An equal number (8) of men and women who denied involvement in extramarital sex were also diagnosed with HIV. The results suggested no relationship between extramarital sex and HIV (OR 0.9, 95% CI: 0.38–1.90, $p=0.7$). However, women were found to be at an increased risk of acquiring HIV (RR = 2.02, 95% CI: 0.91–4.47) compared to men.

Bivariate analysis identified several factors to be significantly associated with engagement in extramarital sex. These included age, gender, religion, marriage type, marital duration, education level, residence, alcohol consumption, sharing workplace and sexual dissatisfaction (see Table 3).

Multivariate analysis revealed a few factors to be linked to extramarital sexual engagement. Being male was substantially linked to higher odds of engaging in extramarital sex, while being female was negatively linked to the practice. Other factors included being in a monogamous marriage, having a marital duration of twenty years or more, identifying as Muslim, alcohol consumption and sharing a workplace. Sexual dissatisfaction did not increase the chances of practicing concurrence in men, but it significantly increased the likelihood of women seeking extramarital sex. Conversely, having no formal education reduced the likelihood of engaging in affairs (see Table 4).

Discussion

This study aimed to ascertain the proportions of men and women engaging in extramarital sexual relationships and their corresponding HIV serostatus in Mbarara Regional Referral Hospital. It also sought to identify factors linked to extramarital relationships across both genders and propose potential solutions to address this practice.

Prevalence of extramarital sex

Extramarital sex is a major factor driving HIV transmission, domestic violence, and marital breakdown [25]. This study revealed a pronounced gender disparity in

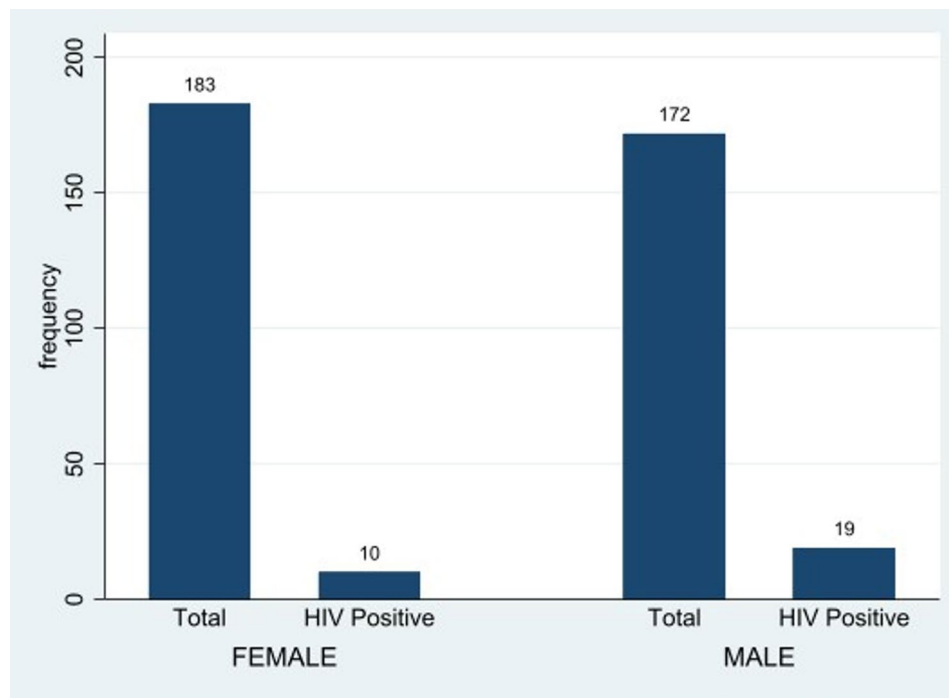


Fig. 1 HIV positivity per gender

Table 2 Extramarital sex and HIV

		Have you had sex outside your marriage in the last 12 months?		Total
		Yes	No	
HIV status	Negative	119	236	355
	Positive	9	20	29
Total		128	256	384

Table 3 Bivariate analysis of the factors associated with extramarital sex

Variable	χ^2	df	p-value
Gender	109.50*	1	<0.001
Age	9.45*	5	0.05
Religion	42.37*	3	<0.001
Marriage type	0.12	1	0.02
Marital duration	28.29*	5	<0.001
Education level	15.21*	3	0.002
Residence	7.33*	1	0.007
Alcohol consumption	29.92*	1	<0.001
Sharing work place	23.16*	1	0.001
Sexual dissatisfaction	0.00*	2	<0.001

extramarital involvement, with over half of men reporting in affirmation compared to less than a quarter of the women. This aligns with findings of Tigaiza and Matovu [9, 14, 21], who also noted that men were more likely than women to engage in extramarital affairs. Men have

higher levels of the sex-stimulating hormone (testosterone) compared to women [30, 31]. This could explain the differences in sexual requirements between the two genders. However, the findings contrast those from a Lethoso-based study [32], which noted more female involvement. There are notable socioeconomic differences between the two countries. While concurrence in women is restricted in Uganda, it is more acceptable in Lesotho, given that most men in that part of the world work as migrant laborers and therefore do not live with their wives [33]. This underscores the need for more male-targeted preventive interventions in the study region.

Extramarital sex and HIV

This study found that individuals who engaged in concurrent relationships were less likely to test positive for HIV compared to those who did not. This contradicts established evidence which indicates that extramarital sex increases HIV risk [1, 34]. There might have been underreporting of extramarital involvement by the participants. Given that the study was conducted in a hospital setting, the participants may have chosen to report the socially desired practice of fidelity. Females were found to be at a higher risk of acquiring HIV compared to males. This result agrees with that of Kasirye [23], who noted more HIV serodiscordance among women compared to men. According to literature, women

Table 4 Multivariate analysis of the factors associated with extramarital sex

Variable	aOR	p-value	CI
Gender			
Female	0.7	<0.001	0.04–0.14
Male	16.4	<0.001	9.13–29.41
Residence			
Urban	0.4	0.63	0.04–0.90
Rural	-	-	-
Religion			
Catholic	0.7	0.27	0.37–1.31
Anglican	1.9	0.20	0.72–4.76
Moslem	2.4	0.04	1.04–5.49
Pentecostal	-	-	-
Marital duration			
1–4	1.9	0.036	1.04–3.51
5–9	-	-	-
10–14	2.6	0.018	1.18–5.60
15–19	2.7	0.038	1.05–6.84
20 & above	3.8	<0.001	1.92–7.56
Type of marriage			
Monogamous	3.2	0.002	1.51–6.93
Polygamous	-	-	-
Education			
None	0.3	0.003	0.09–0.63
Primary	0.4	0.068	0.17–1.06
Secondary	0.5	0.19	0.20–1.38
Tertiary	-	-	-
Alcohol	3.5	<0.001	2.14–5.58
Sexual dissatisfaction			
Females	11.1	<0.001	3.82–15.14
Males	0.2	0.037	0.04–0.90
Sharing workplace			
Yes	7.6	0.05	0.96–61.01
No	-	-	-

have an increased susceptibility to sexually transmitted infections, traumatic sex and sexual intercourse during menstruation [35], all of which enhance chances of HIV infection. Notably, an equal proportion of men and women who denied extramarital activity were found to be HIV-positive. Since this was not a couple's study, these individuals likely acquired HIV from their spouses. These findings call for interventions that target married couples to increase their fidelity index, such as couple counselling and testing for HIV.

Condom use in extramarital sex

A major finding was the near-total absence of safe sex practices among participants engaged in extramarital relationships, whether with their partners or their spouses. Only a negligible proportion reported

occasional condom use with casual partners. This low rate of protective behavior challenges a previous Ugandan study that suggested that men frequently used condoms during extramarital sex [13]. The pervasive unprotected activity could be a key driver of the escalating HIV serodiscordancy and infection rates observed in married Ugandan couples. This revelation calls for an investigation into the reasons for not using condoms, yet the government of Uganda distributes free condoms to its population.

Factors linked to extramarital sex

Male gender

Our study found that being male significantly increased the odds of engaging in sexual concurrency by seven times. Furthermore, married men in purportedly monogamous relationships were three times more likely to seek extramarital sexual encounters than their counterparts. These findings align with the work of Brand et al. [36, 37], but contrast with that of Scheeren et al. [22], who found nearly equal rates of extra dyadic relationships between genders. The disparity in gender involvement in extramarital affairs is supported by various hypothetical perspectives suggesting men's motives for concurrence are multifaceted. These motivations include a greater need for sex and sexual variety or skill satisfaction than their spouses may provide [38, 39]. A further desire for affirmation and acknowledgement of their contributions, which they sometimes feel is missing in their marriages [40], and a search for an outlet to express their emotions with a partner they regard as non-judgmental [41]. The greater cultural liberty granted to men in Uganda to initiate intimate relationships as opposed to women might also be a facilitating factor for their access to multiple partners [23]. An investigation into the drivers of extramarital relationships for both men and women could be useful in addressing any underlying issues that facilitate such relationships.

Longer marital duration

While marital duration between one and 19 years demonstrated a significant correlation with extramarital sex, individuals who had been married for more than 20 years presented an even higher odds of engaging in the practice. These findings align with broader scholarly evidence that posits that prolonged marriage duration, often coupled with long-standing misunderstandings, elevates the likelihood of extramarital relationships [42]. According to psychologists, relationship dynamics can shift over time. This may make intimate partners feel like they are cohabiting as friends rather than lovers, leading one or both

partners to seek a passionate connection elsewhere [25]. Although Baumeister and Bratslavsky [43] argue that sexual relationships tend to grow stronger as time passes by, extramarital theorists explain this from the opposite angle. Fair [44, 45] reveal that as the relationship continues, the extra satisfaction derived from the same repeated inputs begins to decline, and the thrill of new love and desire fades, requiring varied and strategic new efforts to overcome predictability [46]. Some theories attribute it to the differences in love and affection between men and women over time. They posit that as women grow older in a relationship, they tend to stabilize and reduce the need for extramarital sex, while this need remains constant in men or may even grow stronger as the marriage goes on [40]. This underscores the need for regular psychosocial seminars and workshops to nourish marriage bonds and address any strains that married couples meet in the Southwestern region of Uganda.

Being Muslim

Despite the permission granted by Islamic law for polygyny, Muslim men in this study were twice as likely to engage in extra-dyadic affairs compared to men from other religious groups. This concurs with earlier findings that men in polygamous marriages often display a higher likelihood of desiring multiple sexual partners [47] but contravene observations by England [48] who noted that polygamous men are more committed to their primary spouses. Existing evidence shows that polygamous men remain with a desire for sexual variety and have an underlying insatiable mindset [49]. Scholars further suggest that their lack of conditioning towards monogamy drives them to seek partners beyond even the limits of a legally polygynous structure [50]. Targeted messages on the implications of extramarital sex and multiple sexual partnerships could help reduce such relationships among men in polygamous marriages.

Alcohol consumption

This study established alcohol consumption as a significant factor in sexual concurrency among men, showing that drinkers were three times more likely to engage in simultaneous sexual partnerships. Critically, more than half of the men involved in extramarital affairs reported using alcohol. Most of them used it to augment their confidence in approaching women. Conversely, almost half of the men in this study engaged in extramarital sex while sober, without the influence of alcohol. This primarily implies that the decision and action were deliberate and premeditated, rather than a lapse in judgment caused by intoxication. These findings agree with those of earlier

scholars who noted that much as alcohol was a significant driver of extramarital affairs, some men did engage in the practice without the alcohol being involved [51]. Consistent with general research linking alcohol and sexual concurrence [40, 52], nearly half of male drinkers in the study reported an immediate increase in sexual desire after consuming alcohol, although only a quarter of female drinkers reported this effect. This alcohol-induced libido change led to different behaviors where a significant proportion of men sought out sex workers or alternative partners in or around bars. Only a small minority returned to their wives to satisfy this urge. This supports the observation that irrational sexual behavior happens at bars [53, 54], an outcome further facilitated by alcohol's known effect of reducing logical decision-making ability [54]. This calls for the government's participation in strengthening the existing by-laws on alcohol use in the region.

Sexual dissatisfaction

This study revealed a significant link between sexual dissatisfaction and extramarital affairs, with a pronounced gender disparity. Sexual satisfaction was highly subjective for each participant, with definitions varying based on personal perception. These individual perceptions ranged widely, from simply achieving an ejaculation to experiencing a comprehensive journey of pleasure that began with non-sexual contact and culminated in a sexual climax. While men reported being relatively unaffected by sexual dissatisfaction, women who lacked satisfaction were eleven times more likely to seek extramarital sex. Several other scholars agree with the low level of sexual satisfaction as a significant driver of women into extramarital partnerships [9, 55, 56]. This pronounced disparity could be rooted in the social and emotional context of marriage for either gender. Evidence shows that men often view sex as a means to achieve connection while women primarily view it as an expression of connection [57]. Consequently, this makes women's sexual satisfaction highly vulnerable to issues like a lack of emotional closeness, unresolved conflict, or perceived inequality [58, 59]. The traditional cultural differences in gender roles in Uganda probably play a role in female sexual dissatisfaction. Women in this country generally have limited autonomy concerning their sexuality. Essentially, they are expected to adopt a passive role, accepting and appreciating sexual experiences as they are presented, regardless of whether those experiences are fulfilling or not [60]. However, the increasing female empowerment through social groups has made women to challenge this passivity by seeking the desired love and excitement

outside of their marriages [61]. In addition, wives in Uganda often shoulder a disproportionate share of household labor [62]. The responsibilities include child-care, managing the relationship's emotional climate and supporting the husband. This might as well create resentment, stress, and fatigue, which may ultimately lower the overall marital quality and consequently diminish the desire for sex. This requires the government to adjust in the gender roles to reduce the burden on women to improve their mental well-being.

Sharing workplace

This study found a close link between sharing a workplace and extramarital relationships. Contrary to revelations by Doll and Rosopa [63] postulating that strong policies limit workplace romance, our findings agree with several other reports suggesting that workplace sexual relationships exist and can be detrimental to marriages and team performance at work [64, 65, 70]. Sharing a workplace has been found to increase the chances of extramarital sex with co-workers primarily due to a combination of proximity, emotional intimacy, and opportunity [66]. In addition, evidence shows that a workplace provides a unique, stress-bound, and intimate environment where attraction can flourish with minimal logistical effort, which may be perceived as an outlet for needs unmet in the primary relationship [67]. According to Konain [68], the work environment provides a physical and psychological closeness that lays a fertile ground for a relationship to develop and escalate. This is probably due to the increased time that employees spend with their colleagues compared to their own families. Gutek et al. [69] note that the frequent and extended contact between colleagues naturally builds familiarity, which is a key precursor to attraction. Additionally, compared to outside affairs, a relationship with a coworker may not require complex planning to maintain because the individuals see each other daily, making private communication and finding time for encounters much easier [70]. The government could pass laws that encourage married couples to work in the same location to avoid long-distance relationships.

Recommendations

A successful, multi-faceted HIV prevention strategy for Southwestern Uganda should address the interconnected factors of the epidemic: extramarital sex, low condom use, and high alcohol consumption. The government of Uganda, together with stakeholders, need to intensify couples-based HIV counselling and testing, scale up condom distribution, and actively promote Pre-Exposure

Prophylaxis (PrEP) for high-risk, HIV-negative individuals whose partners are actively engaged in concurrent sexual relationships. The strategy should also include launching social marketing campaigns that reframe fidelity as a sign of strength and responsibility, and also support community-led interventions where local champions deliver integrated messages about the combined risks of alcohol and unprotected sex. Importantly, the government needs to enforce local bylaws regulating alcohol consumption. The findings of this study appear sufficiently compelling to justify further research. These future studies should aim to understand the specific reasons why both men and women seek extramarital sex. The resulting knowledge can then be used to develop context-specific remedies or interventions.

Study strengths and limitations

Our findings are strengthened by the methodology used: establishing a strong rapport with participants through prior, thorough HIV counselling likely encouraged them to provide honest information. Despite this effort to foster trust, we acknowledge a key limitation: given the highly sensitive nature of discussing sexuality, the potential for social desirability and self-reporting bias remains. This means some participants may have adjusted their answers to align with perceived social norms, rather than reporting their true experiences. Because this study used a cross-sectional design, it has limitations in establishing associations. In addition, the sample was hospital-based; therefore, we cannot entirely eliminate selection bias, despite the participants coming from various geographical locations. Finally, although the study focused on behaviors within 12 months, recall bias remains a potential limitation.

Conclusion

The study observed a high rate of extramarital sex. This underscores the need for a comprehensive plan to sensitize the masses on the implications of concurrent sexual relationships. Given that this was a baseline study; subsequent research is needed to identify the underlying reasons for seeking extramarital affairs in Southwestern Uganda.

Appendix 1: Questionnaire (English)

Name of study: “*Factors Linked to Extramarital sex and Its Relationship with HIV Infection: A Cross-Sectional Analytical Study in Southwestern Uganda*”

Participant ID:

Interview type:

Date of interview:

Start time:

End time:

Location of interview:

Language of interview:

Interviewer:

Section A: Demographic characteristics

1. Gender: 1 = Male 2 = Female
2. Age in years:
3. Religion: 1 = Catholic 2 = Church of Uganda 3 = Moslem 4 = Pentecostal
5 = others (specify).....
4. Type of marriage: 1 = Monogamous 2 = Polygamous
5. Marital duration:
6. Educational level: 1 = None 2 = Primary 3 = Secondary 4 = Tertiary
7. HIV status: 1 = HIV negative 2 = HIV positive
8. Area of residence: 1 = Urban 2 = Rural
9. District of residence
10. Occupation.....

Section B: Substance use

1. Do you drink alcohol/energy drinks? 1 = Yes 2 = No
2. Do you feel like having sex after drinking alcohol/energy drink? 1 = Yes 2 = No
3. If yes to B.2, how do you get a woman/man to have sex with after drinking alcohol/energy drink?

.....

Section C: Extramarital sex and protection

1. Have you, in your marriage, felt the need to try getting sexual company from women/men outside your marriage? 1 = Yes 2 = No
2. Besides your wife/husband, how many partners have you had sex within the last 12 months?
3. Do you share a workplace with them? 1 = Yes 2 = No
4. Do you use condoms in your alternative relationship/s? 1= Never 2 = Sometimes 3 = Always

Section D: Sexual satisfaction

1. In your own view, what do you describe as sexual satisfaction?

2. Do you get sexually satisfied with your wife/husband? 1 = Yes 2 = No
 3 = I think so 4 = I am not sure 5 = I don't know
3. Does your other partner/s sexually satisfy you? 1 = Yes 2 = No 3= I think so
 4 = I am not sure 5 = I don't know
4. If your wife/husband was giving you sex every day, would you still need this/these other partner/s? 1 = Yes 2 = No 3 = I am not sure 4 = I don't know

Section E: Partner protection

1. When you go back to your spouse after condom less sex, do you use condoms to protect her/him? 1 = Yes 2 = No 3 = Sometimes
2. What do you do to protect your primary partner/s from any extramarital infections?

Thank you

Abbreviations

AIDS	Acquired immunodeficiency syndrome
aOR	Adjusted Odds ratio
CI	Confidence interval
df	Degrees of freedom
HIV	Human immunodeficiency virus
MRRH	Mbarara Regional Referral Hospital
MUST	Mbarara University of Science and Technology
PrEP	Pre-exposure prophylaxis
SSA	Sub-Saharan Africa
STIs	Sexually transmitted infections
UNAIDS	United Nations Programme on HIV/AIDS
VIF	Variance Inflation Factor

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Author contributions

PA: conceptualized the study, collected data, analyzed data, interpreted data and prepared the main manuscript. GN: oversaw the concept development, selected the appropriate methods, supervised the project, reviewed the first version of the manuscript and gave constructive feedback. RK: Helped with data analysis and interpretation, selected the journal, edited and reviewed the first version of the manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

The study was approved by the Research and Ethics Committee (REC) of Mbarara University of Science and Technology, Ref: MUST-2025-2038. However, REC did not influence the outcomes of this study. Informed consent was obtained from the participants before participating in the study. All procedures were done per the guidelines and regulations stated in the Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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