



## **Contraceptive Use and Associated Factors Among HIV-Positive Women on Antiretroviral Therapy in Western Nepal: A Cross-Sectional Study**

**Rajendra Ruchal\***

Lecturer

Department of Community Medicine

Devdaha Medical College and Research Institute, Devdaha, Rupandehi, Nepal

[rruchal1213@gmail.com](mailto:rruchal1213@gmail.com)

<https://orcid.org/0009-0005-3020-8034>

**Dr. Niranjan Shrestha**

Associate Professor

School of Health and Allied Sciences

Pokhara University, Pokhara, Nepal

[nrjanstha@gmail.com](mailto:nrjanstha@gmail.com)

<https://orcid.org/0000-0001-8419-9659>

### **Original Research**

### **Corresponding Author\***

Received: December 29, 2025

Revised & Accepted: March 28, 2026

Copyright: Author(s) (2026)



This work is licensed under a [Creative Commons Attribution-Non Commercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

### **Abstract**

**Background:** Mother with human immunodeficiency virus positive must plan their pregnancies carefully in order to avoid unwanted pregnancy and prevent vertical transmission to their unborn children. The use of contemporary contraceptive techniques is greatly increased when contraceptive services are integrated into antiretroviral therapy service. We assessed the utilization of modern contraceptives and related factors among HIV positive women attending the antiretroviral therapy clinic at Lumbini provincial hospital, Butwal.

**Objective:** To evaluate the prevalence and risk factors for using contraception among HIV-positive women using antiretroviral medicine.

**Methodology:** A cross-sectional study was conducted among 422 HIV-positive women at the ART centre of Lumbini Provincial Hospital. The sample size was calculated using a single population proportion formula (95% CI, 5% margin of error, 50% prevalence), and data were collected via a pretested questionnaire and analysed in SPSS. Data were collected using a



structured pretested questionnaire and analysed in SPSS. Multivariable logistic regression was used to identify factors associated with contraceptive use, reporting adjusted and unadjusted odds ratios with 95% confidence intervals.

**Results:** Contraceptive use among HIV-positive women was 39.6%, condoms were the most commonly used method (38,3%) and only 26.5% received family planning counselling. Age (aOR = 0.53, 95% CI: 0.31–0.84,  $p = 0.008$ ), marital status (aOR = 2.52, 95% CI: 1.53–4.65,  $p < 0.001$ ), having children (aOR = 0.17, 95% CI: 0.05–0.49,  $p = 0.002$ ), and monthly income (aOR = 2.4, 95% CI: 1.37–3.99,  $p = 0.002$ ) were significant independent predictors of contraceptive use.

**Conclusion:** Low contraceptive use and limited counselling among HIV-positive women indicate gaps in ART-based reproductive health services. Integrating family planning into ART care and addressing socio-demographic barriers through targeted interventions and multi-sectorial collaboration is essential to improve uptake and support informed reproductive choices.

**Keywords:** Antiretroviral Therapy, Contraception, Family Planning, HIV Infections, Reproductive Health

## **Introduction**

HIV and AIDS remain a major global public health challenge, disproportionately affecting low- and middle-income countries across all age and socioeconomic groups (Felix & Bruno, 2018; Tilahun & Mastewal, 2020). Despite global efforts to end HIV/AIDS by 2030, it remains a major health burden, with about 76.1 million infections and 35 million AIDS-related deaths worldwide (HIV/AIDS, 2024; Tilahun & Mastewal, 2020). HIV disproportionately affects women of reproductive age worldwide, who make up over 50% of people living with HIV, yet many HIV-positive women in Asia lack access to family planning, leading to high rates of unintended pregnancy and abortion (Felix & Bruno, 2018; HIV/AIDS, 2024; Petruney, Minichiello, McDowell, & Wilcher, 2012).

The complex intersection of HIV and reproductive health highlights the need to understand factors influencing contraceptive use among HIV-positive women, as effective contraception enables informed reproductive choices and reduces the risk of mother-to-child transmission (Saleem, Rosen, Quinn, Duggaraju, & Kennedy, 2022). According to WHO, people living with HIV should receive routine sexual and reproductive health counselling, with emphasis on contraceptive methods that provide dual protection against HIV/STIs and unintended pregnancy (Felix & Bruno, 2018; Nadia & Ananworanich, 2010). People living with HIV often have fertility desires but face higher rates of unplanned pregnancies and associated health risks, including poor obstetric outcomes, HIV progression, and transmission to partners or new-borns. Unprotected sex can lead to super infection, drug-resistant HIV, and other STIs. Comprehensive family planning services are essential to reduce unintended pregnancies and HIV transmission among PLHIV (Mishra, Joshi, & Khanal, 2014; Sherwood et al., 2021). Over 90% of paediatric HIV cases result from vertical transmission. The most effective way to



eliminate mother-to-child transmission is preventing maternal HIV infection. For HIV-positive women, using highly effective modern contraceptives to prevent unintended pregnancies is a key strategy. Studies show that these methods are effective even with concurrent antiretroviral therapy, and integrating contraceptive services into routine HIV care increases uptake. Unintended pregnancy rates are very low among women using these methods, with minimal difference between typical and ideal use (Gelagay, Koye, & Yeshita, 2018). Research shows that HIV-negative women are more likely to use contraceptives if they are educated and wish to stop childbearing, although cost remains their primary consideration (Monica A. Magadi, 2017). Studies showed that there is significant unmet needs for safe and effective contraceptives remain, especially in high HIV-burden regions (Felix & Bruno, 2018). Contraception preferences among women living with HIV are complex and influenced by factors related and unrelated to their HIV status (Saleem et al., 2022).

In Nepal, adult HIV prevalence is under 1% with an estimated 32,753 people living with HIV, and 31% of women aged 15–49 are affected; while ARV medicines are available nationwide, however lifelong ART is offered only at 68 ART sites and 25 dispensing centres (Government of Nepal, 2016). The availability of low-cost, effective antiretroviral therapy has greatly improved the health and life expectancy of women living with HIV (Acayo et al., 2025). However, HIV-related stigma remains strongly linked to multiple social and personal factors among people living with HIV. Hence the use of contraceptive among HIV positive women has been influenced by various factors. Tackling this issue requires a comprehensive approach that combines education, integration of mental health support with ART services, and culturally sensitive stigma-reduction programs. Evidence on family planning use among women living with HIV/AIDS in Nepal is scarce, with very limited research available. Research and updated information in this area is essential for policymakers and program managers to design, justify, and implement effective HIV prevention and FP programs. This study aims to explore family planning practices among women living with HIV/AIDS in Nepal.

## **Methodology**

### **Study area**

This study was conducted at Lumbini Provincial Hospital in Butwal, Rupandehi. Lumbini Provincial Hospital serves as a Provincial Antiretroviral Therapy centre supported by the AIDS Healthcare Foundation (AHF). The centre regularly provides ART services and counselling to individuals living with HIV/AIDS.

### **Study design and study populations**

This study employed a facility-based cross-sectional design to assess contraceptive use and associated factors among HIV-positive women attending the ART clinic at Lumbini Provincial Hospital. The study was conducted among women of reproductive age who are registered for HIV care and receiving antiretroviral therapy at the hospital. The facility-based setting was considered appropriate for obtaining relevant and representative information as the ART clinic provides a centralized and reliable setting where HIV-positive women regularly received ART service.



### **Sample size and sampling**

There is limited information regarding contraceptive use among HIV-positive women in Nepal. As no prior study had been conducted at the hospital, the sample size was calculated using a 50% contraceptive prevalence rate to ensure maximum variability. The sample size was determined using the formula:

$$\text{Sample size, } n = (Z^2 \times P \times (1-P)) / d^2$$

where,  $n$  is the required sample size,  $Z = 1.96$  at 95% confidence level,  $P$  is the estimated prevalence of contraceptive use,  $d$  is the margin of error (0.05), and  $(1-P)$  represents  $Q$ . Since no prior local study reported the prevalence among HIV-positive women in this setting, a prevalence of 50% was assumed to ensure maximum variability and obtain the largest possible sample size.

$$n = (1.96^2 \times 0.5 \times 0.5) / (0.05^2) = 384$$

To compensate for a potential 10% non-response rate, 38 participants were added, giving a final sample size of 422 respondents.

A sampling frame was prepared from the ART clinic registration list of HIV-positive women of reproductive age attending care during the study period. Eligible women were assigned unique identification numbers, and the first participant was selected randomly. Subsequent participants were then selected at regular intervals based on the calculated sampling interval until the required sample size was reached. If a selected participant was unavailable or refused after two clinic visit attempts, she was treated as a non-respondent and replaced by another randomly selected eligible woman from the remaining list

### **Inclusion and exclusion criteria**

HIV positive women aged 15–49 years who were sexually active since past 6 month were included. Women with severe illness who were unable to communicate were excluded. Additionally, women who were not fecund because of their reproductive problem were excluded from the study.

### **Data collection tools and procedure**

Data were collected using a standardized structured questionnaire developed after reviewing relevant literature and previously validated tools on contraceptive use among HIV-positive women. The questionnaire was prepared in English and translated into Nepali and Bhojpuri. A pre-test was conducted among 10% (42) of the sample at the ART centre of District Hospital, Bhairahawa. The pre-test assessed clarity, wording, sequence, and average interview duration. Based on the findings, the questionnaire was refined. Four research assistants were recruited and trained on study objectives, questionnaire content, ethical issues, and interview techniques. Data were collected through face-to-face interviews using the revised questionnaire. The Principal Investigator conducted regular supervision and monitoring throughout the data collection period, providing feedback and corrections as needed

### **Data analysis and interpretation**

All collected data were checked for completeness, coded, and entered into SPSS version 25 for analysis. Descriptive statistics (frequencies and percentages) summarized socio-demographic



characteristics, contraceptive use, and reproductive goals. Binary logistic regression was used to examine associations between independent variables and contraceptive use. Variables significant in bivariate analysis were entered into a multivariable logistic regression model to obtain adjusted odds ratios (AORs). Associations were reported with 95% confidence intervals, and  $p < 0.05$  was considered statistically significant.

### **Operational definition**

**Contraceptive use:** Use of any modern contraceptive method (e.g., condoms, pills, injectable, IUD, implants) by HIV-positive women attending the ART clinic.

**Sexually active:** Women who had engaged in sexual intercourse since last 12 months, ensuring that the analysis focused on women at risk of unintended pregnancy.

**Modern contraceptive:** Modern contraceptives included clinically approved and medically recognized methods such as barrier methods (male or female condoms), hormonal methods (oral contraceptives, injectable, and implants), intrauterine devices (IUDs), and permanent methods (tubal ligation or vasectomy).

**Family Planning Counselling:** Counseling received/provided to HIV positive women on contraceptive use from health professionals during ART clinic visits

### **Ethical consideration**

Ethical approval was obtained from the Institutional Review Committee of the Universal College of Medical Sciences, Bhairahawa. Written permission was secured from the Medical Superintendent of Lumbini Provincial Hospital prior to the commencement of the study. Participants were informed about the study objectives, and informed consent was obtained before data collection. To maintain the confidentiality data were stored securely in password-protected files, and accessed only by the research team. No personal identifiers were recorded in the dataset. We ensured the participation was voluntary, and respondents were free to decline to answer any question or withdraw from the study at any time without any consequences.

## **Results**

### **Sociodemographic Characteristics:**

The study included 422 women with HIV aged 18–49 years, with a mean age of  $38.10 \pm 9.92$  years. Most participants were aged 31–49 years (73.9%). Regarding ethnicity, the largest groups were Janajati (31.3%), followed by Brahmin/Chhetri (28%) and Madhesi (24.6%). The majority were Hindu (81.3%). More than half lived in joint families (56.4%), and most were married (70.1%), while 24.9% were widowed. Among 422 respondents, 82.7% were in their first marriage. In terms of education, about one-third were illiterate (30.6%) or had primary education (30.8%), with very few having bachelor-level education or higher (0.7%). Similar educational patterns were observed among their partners. Occupationally, over half were engaged in agriculture (56.4%), and most had a monthly income of NPR 10,000–20,000 (78.4%), indicating generally low socioeconomic status "Table 1".



**Table 1. Socio-demographic Characteristics (N=422).**

<b>Variables</b>	<b>Frequency(n )</b>	<b>Percentage (%)</b>
<b>Age range(18-49)years, Mean ± SD= 38.10 ± 9.92 years</b>		
<b>Age groups, n=422</b>		
18-30	110	26.1
31-49	312	73.9
<b>Ethnicity</b>		
Dalit	59	14
Janajaati	132	31.3
Madhesi	104	24.6
Muslim	9	2.1
Brman/Chhetri	118	28
<b>Religion</b>		
Hindu	343	81.3
Muslim	35	8.3
Christian	37	8.8
Buddhist	7	1.7
<b>Family Type</b>		
Nuclear	159	37.7
Joint	238	56.4
Extended	25	5.9
<b>Marital Status</b>		
Unmarried	12	2.8
Married	296	70.1
separated	9	2.1
widow	105	24.9
<b>Order of marriage n=410</b>		
First	349	82.7
Second	60	14.2
Third	1	0.2
<b>Education Status</b>		
Illiterate	129	30.6
Primary	130	30.8
Secondary	121	28.7
Intermediate	39	9.2
Bachelor or higher	3	0.7
<b>Education Status of Partner</b>		



Illiterate	123	29.1
Primary	142	33.6
Secondary	105	24.9
Intermediate	48	11.4
Bachelor or higher	4	0.9
<b>Occupation</b>		
Agriculture	238	56.4
Job	70	16.6
Business	26	6.2
Labor	80	19
Other	8	1.9
<b>Monthly Income</b>		
NPR10000- NPR 20000	331	78.4
NPR 21000- NPR 30000	81	19.2
NPR 31000- NPR 40000	10	2.4

### **Contraceptive Practices**

Table 2 presents the distribution of contraceptive use and reproductive characteristics among the respondents. Overall, 39.6% of the women reported currently using contraception, while 60.4% were not using any method. Among contraceptive users, the most commonly used method was condoms (38.3%), followed by pills (22.8%), Depo-Provera injections (19.8%), permanent methods (13.8%), and implants (5.4%).

Regarding family planning counselling, only 26.5% (112) of the respondents reported receiving counselling, whereas the majority (73.5%) had not received counselling. Most women (68%) had children, while 32% had no children. Among those with children (n = 287), the majority had one or two children (27% and 28%, respectively), while 10.4% had three children and 2.6% had four or more children. Concerning the HIV status of their young children, 73.2% were HIV-negative, while 26.8% were HIV-positive. In terms of future fertility intentions (n = 296), the majority (88%) reported that they were not planning to have children in the future, while only 13% expressed a desire for future childbearing. Overall, the findings indicate relatively low contraceptive use, limited family planning counseling, and low intention for future childbearing among the respondents.



**Table 2. Contraceptive Practices**

<b>Use of Contraceptive</b>		
Yes	167	39.6
No	255	60.4
<b>Type of contraceptive use, n=167</b>		
Condom	64	38.3
Depo	33	19.8
Pills	38	22.8
Implant	9	5.4
Permanent	23	13.8
<b>Receive counseling about family planning</b>		
Yes	112	26.5
No	310	73.5
<b>Having own child</b>		
Yes	287	68
No	135	32
<b>Number of child, n=287</b>		
One child	114	27
Two child	118	28
Three child	44	10.4
four or more than four child	11	2.6
<b>HIV status of younger children</b>		
Positive	77	26.8
Negative	210	73.2
<b>Are you planning to have child in future, n=296</b>		
Yes	37	13
No	259	88

**Factors Associated with Contraceptive Use:**

Table 3 shows the results of bivariate and multivariable logistic regression analyses examining factors associated with contraceptive use among HIV-positive women. Although several socio-demographic variables were significant in the bivariate analysis, only a few remained independently associated after adjustment. Women aged 31–49 years were significantly less likely to use contraceptives compared to those aged 18–30 years (aOR = 0.53, 95% CI: 0.31–0.84, p = 0.008). Marital status was also an important predictor, as married women were more than twice as likely to use contraceptives compared to unmarried women (aOR = 2.52, 95% CI: 1.53–4.65, p < 0.001). Women with children were significantly less likely to use contraceptives than those without children (aOR = 0.17, 95% CI: 0.05–0.49, p = 0.002). Additionally, women with a monthly income of NPR.21000–3000 were more likely to use contraceptives compared to those earning NPR.10000–20000 (aOR = 2.4, 95% CI: 1.37–3.99,

p = 0.002). Education and occupation were significant in the bivariate analysis but lost significance in the multivariable model. Overall, age, marital status, having children, and monthly income was the independent predictors of contraceptive use among HIV-positive women.

**Table 3. Factors Associated with Contraceptive Use**

Variables	Frequency (n)	Contraceptive Use		Bivariate analysis		Multivariable analysis	
		Yes (%)	No (%)	cOR	95% CI	aOR	95% CI
<b>Age groups(years)</b>							
<b>18 – 30</b>	110	36 (21.6)	74 (29)	r		r	
<b>31 – 49</b>	312	131 (78.4)	181 (71)	0.46	<b>0.32 - 0.88</b>	0.53	<b>0.31 - 0.84</b>
<b>Marital status</b>							
<b>Unmarried</b>	12	3 (1.8)	9 (3.5)	r		r	
<b>Married</b>	296	125(74.9)	171 (67)	3.41	<b>2.30 - 6.61</b>	2.52	<b>1.53 - 4.65</b>
<b>Seperated</b>	9	5 (3)	4 (1.6)	0.34	0.09 - 3.20	0.18	0.02 - 2.99
<b>Widow</b>	105	34 (20)	71(27.8)	0.49	0.07 - 3.10	0.11	0.02 - 2.23
<b>Educational level of respondent</b>							
<b>No formal education</b>	129	52 (31.1)	77 (30.2)	r		r	
<b>Primary</b>	130	51 (30.5)	79 (31)	1.32	0.69 - 2.58	0.91	0.43 - 1.90
<b>Secondary</b>	121	51 (30.5)	70 (27.5)	2.41	<b>1.18 - 4.89</b>	1.08	0.47 - 2.44
<b>Intermedia te</b>	39	12 (7.2)	27 (10.6)	0.45	0.05 - 4.10	0.12	0.01 - 2.89
<b>Bachelor and above</b>	3	1(0.6)	2(0.8)	1.98	0.15 - 31	0.59	0.05 - 6.96
<b>Occupation</b>							
<b>Agricultur e</b>	238	97 (58)	141 (55.3)	r		r	
<b>Service</b>	70	25 (15)	45 (17.6)	3.05	<b>1.23 - 6.21</b>	2.52	0.67 - 9.49
<b>Business</b>	26	11 (6.6)	15 (5.9)	3.1	<b>1.74 - 4.50</b>	1.57	0.79 - 2.82
<b>Labour</b>	80	31 (18.6)	49 (19.2)	0.91	0.48 - 1.73	1.38	0.65 - 2.94
<b>Having own child</b>							



<b>No</b>	135	34 (14.1)	101 (56)	r		r	
<b>Yes</b>	287	208 (85.9)	79 (44)	0.12	<b>0.03 - 0.35</b>	0.17	0.05 - 0.49
<b>Monthly income</b>							
<b>NPR.10000 -20000</b>	331	128 (76.6)	203 (79.6)	r		r	
<b>NPR.21000 -30000</b>	81	34 (20.4)	47 (18.4)	3.25	<b>2.23 - 4.22</b>	2.4	<b>1.37 - 3.99</b>
<b>NPR.31000 -40000</b>	10	5 (3)	5 (2)	0.72	0.44 - 2.13	1.41	0.58 - 3.1

r-Reference category, CI-Confidence interval, cOR-Crude Odds Ratio, aOR-Adjusted Odds Ratio, Bolding indicates a significant variable.

### Discussion

This study provides insight into family planning (FP) practices among women living with HIV receiving antiretroviral therapy at Lumbini Provincial Hospital. Given the heightened fertility desires, risk of unplanned pregnancies, and potential health consequences for PLHIV, understanding contraceptive use is critical. In Nepal, where ART services have been gradually expanding, unregulated fertility can increase mother-to-child HIV transmission and the risk of super-infection. Despite this, there has been limited research on FP practices among this key population, highlighting the importance of our findings on the use and determinants of modern contraceptive methods.

Our study found that 39% of women living with HIV receiving ART were using contraceptive methods, which is comparable to a recent study in Nepal reporting 37.8% contraceptive use among a similar population (Dhungana, Bhatta, & Zhang, 2025). Similar prevalence has also been reported internationally, including 37% in north-west Nigeria (Hanafi et al., 2025) and 38.4% in Uganda (Mbabazi et al., 2022). The similarity between Nepal and these settings may reflect shared structural and sociocultural characteristics common to many low- and middle-income countries, such as moderate integration of family planning within HIV services, reliance on public-sector ART clinics, persistent stigma surrounding HIV and reproductive decision-making, and limited partner communication regarding contraception. In Nepal, although family planning services are widely promoted, contraceptive counselling within ART programs may still be inconsistently implemented, which could contribute to only moderate uptake levels similar to those observed in Nigeria and Uganda.

For example, contraceptive use among HIV-positive women was relatively high in India at 74.5% (Dugg, 2020), whereas lower levels have been reported in Cameroon (52%)(Finihang, Ghislain, & Tebeu, 2020) and Uganda (24.4%) (Acayo et al., 2025). These differences may reflect variations in health-system capacity, integration of family planning within HIV services, and sociocultural norms related to fertility. In some sub-Saharan African settings, expectations to bear children, along with barriers such as stigma, limited counselling, and inconsistent contraceptive availability, may reduce uptake. In contrast, the higher prevalence in India may



indicate better access to and promotion of contraceptive services within HIV care. These findings emphasize the need for context-specific strategies to improve contraceptive use among women living with HIV.

Our study revealed that among contraceptive users, condoms were the most commonly used method (38.3%). This finding is consistent with several other studies (Amanual & Abegaz, 2019; Beena, 2015; Dugg, 2020; Finihang et al.; Heard, 2004), where condoms were also reported as the predominant method of contraception. The higher use of condoms in our study area may be attributed to their wide availability, affordability, and accessibility through pharmacies, shops, and public health facilities. In addition, condoms provide dual protection against both unintended pregnancy and sexually transmitted infections (Pazol, 2010 #214), including HIV, which may further encourage their preference, particularly in settings where STI awareness is high. Condoms also do not require a prescription or frequent health facility visits, making them a convenient option for many users.

However, this pattern differs from findings in the North-West Region of Nigeria (Hanafi et al., 2025), where oral contraceptive pills were reported as the most commonly used method. The higher utilization of pills in that setting may be related to differences in family planning program emphasis, availability of reproductive health services, and user preference for female-controlled methods. Oral contraceptives are often favoured by women who desire a reversible method that does not require partner involvement at the time of intercourse. Effective counselling and reliable supply chains in that region may also contribute to their higher uptake. Similarly, studies conducted in Uganda (Mbabazi et al., 2022) and Ethiopia has shown that injectable contraceptives are the most widely used method among women. The popularity of injectable in these countries may be explained by their convenience and longer duration of action. Injectable also offer privacy, which is particularly important in contexts where women may prefer to use contraception discreetly. Furthermore, strong governmental and non-governmental support for long-acting contraceptive methods, along with community-based distribution programs, may have contributed to their higher utilization in these settings. Overall, the observed variations in contraceptive method preference across different studies and regions may reflect differences in accessibility, cultural beliefs, health system factors, method availability, cost, level of awareness, and partner dynamics. These contextual factors play a significant role in shaping contraceptive choices among women in different geographical and socio-cultural environments.

In our study, age was significantly associated with contraceptive use among HIV-positive women. Women aged 31–49 years were significantly less likely to use contraceptives compared to those aged 18–30 years (aOR = 0.53, 95% CI: 0.31–0.84,  $p = 0.008$ ). This finding is consistent with another study (Dugg, 2020), which reported reduced contraceptive uptake among women aged 40–49 years (APR = 0.45, 95% CI: 0.21–0.94) compared to those aged 15–24 years. Although our study did not explore the underlying reasons for this association, previous research suggests that lower contraceptive use among older women may be related to factors such as reduced perceived pregnancy risk, lower sexual activity, or nearing menopause. Additionally, younger women may have greater exposure to reproductive health education and



more frequent contact with integrated HIV–family planning services, which could increase their likelihood of contraceptive use. Further qualitative studies are needed to better understand age-related differences in contraceptive use among women living with HIV.

Marital status was also an important predictor in our study. Married women were more than twice as likely to use contraceptives compared to unmarried women (aOR = 2.52, 95% CI: 1.53–4.65,  $p < 0.001$ ). This finding is supported by other studies (Heard, 2004; Mbabazi et al., 2022), including one that reported significantly higher odds of contraceptive use among married women (OR = 8.0; 95% CI: 1.18–53.93;  $p = 0.019$ ). The higher utilization among married women may be explained by more regular sexual activity, partner communication regarding family size, and increased exposure to family planning counseling during maternal and child health services. Unmarried women, on the other hand, may face stigma, fear of disclosure of sexual activity, or limited access to reproductive health services, which may reduce contraceptive uptake. Additionally, having children and monthly income were identified as independent predictors of contraceptive use. Women who already have children may be more motivated to space or limit further pregnancies, particularly in the context of HIV, where preventing unintended pregnancies and reducing mother-to-child transmission are important considerations.

Economic status also played a significant role in contraceptive utilization. Women with a monthly income of 20000–30000 were more likely to use contraceptives compared to those earning 10000–20000 (aOR = 2.4, 95% CI: 1.37–3.99,  $p = 0.002$ ). This finding aligns with another study (Dugg, 2020), which reported that unemployed women were less likely to use contraceptives (APR = 0.6, 95% CI: 0.42–0.94) compared to formally employed women. Higher income and employment may enhance women’s financial autonomy, decision-making power, and ability to afford transportation and service-related costs, thereby improving access to family planning services. Conversely, women with lower income may experience financial barriers that limit access to contraceptive methods. Overall, these findings suggest that age, marital status, parity, and economic status are key determinants of contraceptive use among HIV-positive women. Addressing socioeconomic disparities, improving targeted counseling for older and unmarried women, and strengthening integrated HIV and family planning services are essential to increase family planning utilization among these vulnerable groups.

### **Limitation of Study:**

As this study was conducted among women receiving ART at selected health facility, the findings may not be fully generalizable to all women living with HIV in the community, particularly those not engaged in care or using private or remote services. The cross-sectional design also limits the ability to establish temporal relationships or causal inferences between associated factors and contraceptive use. Although several variables were included in the analysis, potential unmeasured confounders such as partner attitudes, quality of counseling, and cultural beliefs may have influenced the results. Furthermore, this study focused only on service users’ perspectives; future research incorporating healthcare providers’ perspectives would help identify service gaps and inform more effective interventions. Despite these



limitations, the study offers valuable insights into contraceptive use among women living with HIV and highlights priorities for programmatic improvement and further research.

## **Conclusion**

This study highlights that contraceptive use among HIV-positive women receiving ART in Nepal remains very low, with condoms being the predominant method. The findings demonstrate that age, marital status, parity, and monthly income significantly influence contraceptive uptake, reflecting the interplay of social, economic, and reproductive factors in shaping women's family planning decisions. These findings underscore the importance of tailoring interventions to specific demographic and socioeconomic groups. It is therefore recommended that ART centers provide fully integrated family planning services, including comprehensive counseling that specifically addresses these identified predictors. Integrating family planning into routine ART care would ensure consistent access to contraceptive information and methods, promote informed choice, and reduce missed opportunities for preventing unintended pregnancies and vertical transmission.

Further research in Nepal is warranted to explore additional barriers and gaps in contraceptive utilization among HIV-positive women, including cultural, behavioral, and health system related factors. Moreover, improving contraceptive use will require coordinated, multi-sectorial and multidisciplinary strategies involving healthcare providers, policymakers, community organizations, and public health programs. Policymakers and healthcare professionals should consider the multiple interacting factors influencing contraceptive use when designing and implementing effective, context-specific interventions.

**Transparency Statement:** The authors confirm that this study has been conducted with honesty and in full adherence to ethical guidelines.

**Data Availability Statement:** Authors can provide data.

**Conflict of Interest:** The authors declare there is no conflicts of interest.

**Authors' Contributions:** Corresponding author conducted major research activities i.e., concept, literature review, proposal development, data collection, drafting and final review of manuscript. Co-author contributed for the data analysis and interpretation.



## References

- Acayo, J. P., Oryema, S. P., Edilu, R., Ochola, H., Ojara, S., Pebolo, P. F., . . . Ochola, E. (2025). Contraceptive use and associated factors among women with HIV receiving care at a faith-based tertiary hospital in Northern Uganda: a cross-sectional study. *Therapeutic Advances in Reproductive Health*, 19  
<https://journals.sagepub.com/doi/pdf/10.1177/26334941251338139>
- Amanual Getnet Mersha, D. A. E., Sewunet Admasu Belachew, Asnakew Achaw Ayele., & Abegaz, B. M. G. a. T. M. (2019). Contraceptive use among HIV-positive and negative women: mplication to end unintended pregnancy *BMC Contraceptive and Reproductive Medicine*, 4(3). doi: (2019) 4:3 <https://doi.org/10.1186/s40834-019-0084-2>
- Beena Joshi, G. V., Sanjay Chauhan, Ragini Kulkarni, Shahina Begum, Y. S. Nandanwar, Michelle Fonseca, Sujata Baweja, Dilip Turbadkar. (2015). Contraceptive Use and Unintended Pregnancies Among HIV-Infected Women in Mumbai *Indian Journal of Community Medicine*, 40 ( 3 ).
- Dhungana, G. P., Bhatta, D. R., & Zhang, W.-H. (2025). Identification of key bottlenecks in human rights-based approach to family planning among HIV-infected women in a resource-restricted setting of Nepal. *International Journal of Human Rights in Healthcare*, 18(1), 75-91. <https://doi.org/10.1108/IJHRH-03-2023-0017>
- Dugg, P., Chhabra, Pragti, Sharma, Arun Kumar. (2020). Contraceptive Use and Unmet Need for Family Planning among HIV-Positive Women A Hospital-Based Study *Indian Journal of Public Health*, 64(1), 32-38 doi:10.4103/ijph.IJPH\_123\_19
- Felix Bongomin , M. C., Anthony Eriatu., & Bruno Chan Onen, P. C., Stephen A. Godmercy. (2018). Prevalence and Factors Associated with Contraceptive Use among HIV-Infected Women of Reproductive Age Attending Infectious Disease Clinic at Gulu Regional Referral Hospital, Northern Uganda. *BioMed Research International*(1), 8. doi:<https://doi.org/10.1155/2018/9680514>
- Finihang, W., Ghislain, G. N., & Tebeu, P. M. Determinants of Contraception Use Amongst HIV Infected Women in the City of Yaounde in 2020. [https://ssrn.com/abstract=5263154, or https://dx.doi.org/10.2139/ssrn.5263154](https://ssrn.com/abstract=5263154_or_https://dx.doi.org/10.2139/ssrn.5263154)
- Gelagay, A. A., Koye, D. N., & Yeshita, H. Y. (2018). Factors affecting long acting and permanent contraceptive methods utilization among HIV positive married women attending care at ART clinics in Northwest Ethiopia. *Archives of Public Health*, 76(1), 47. <https://doi.org/10.1186/s13690-018-0294-0>
- Government of Nepal, Ministry of health and population, National Center for AIDS and STD control. (2016). HIV epidemic update of Nepal. [Factsheet 1\\_HIV epidemic update](#)
- Hanafı, O., Aliyu, N., Umar, M. D., Suleiman, S., Umar, I. A., Lassi, A. S., . . . Musa, A. A. (2025). Determinants of Contraceptive Utilization Among HIV Positive Women Receiving Anti Retroviral Therapy (Art) In North-West Region, Nigeria. *Current Research in Health Sciences*, 3(2), 1-10.
- Heard, I. M., Potard, Valérie MS, Costagliola, Dominique MD, Kazatchkine, Michel D. MD. (2004). Contraceptive Use in HIV-Positive Women. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 36(2), 714-720



- HIV/AIDS., Joint United Nations Programme on HIV/AIDS (2024). UNAIDS DATA 2024. *CC BY-NC-SA 3.0 IGO*. available at, [UNAIDS data 2024 | UNAIDS](https://data.unaids.org/)
- Mbabazi, L., Nabaggala, M. S., Kiwanuka, S., Kiguli, J., Laker, E., Kiconco, A., . . . Castelnuovo, B. (2022). Factors associated with uptake of contraceptives among HIV positive women on dolutegravir based anti-retroviral treatment-a cross sectional survey in urban Uganda. *BMC women's health*, 22(1), 262. <https://doi.org/10.1186/s12905-022-01842-7>
- Mishra, S. R., Joshi, M. P., & Khanal, V. (2014). Family planning knowledge and practice among people living with HIV in Nepal. *PLOS ONE*, 9(2), e88663.
- Monica A. Magadi, W. A. M. (2017). HIV/AIDS and contraceptive use: factors associated with contraceptive use among sexually active HIV-positive women in Kenya. *An international reproductive health journal, Elsevier*, 95(3), 312-321. doi:<https://doi.org/10.1016/j.contraception.2016.10.013>
- Nadia Kancheva Landolt, N. P., Surasith Chaithongwongwatthana,, & Ananworanich, J. ( 2010). Sexual life and contraception in people living with HIV *Asian Biomedicine*, 4 (5 ), 691-701.
- Petroney, T., Minichiello, S. N., McDowell, M., & Wilcher, R. (2012). Meeting the contraceptive needs of key populations affected by HIV in Asia: an unfinished agenda. *AIDS Research and Treatment*, 2012(1), 792649.
- Saleem, H. T., Rosen, J. G., Quinn, C., Duggaraju, A., & Kennedy, C. E. (2022). Contraception values and preferences of people living with HIV: A systematic review. *Contraception*, 111, 48-60. <https://doi.org/10.1016/j.contraception.2021.10.014>
- Sherwood, J., Lankiewicz, E., Roose-Snyder, B., Cooper, B., Jones, A., & Honermann, B. (2021). The role of contraception in preventing HIV-positive births: global estimates and projections. *BMC Public Health*, 21(1), 536.
- Tilahun Tewabe, T. A., Abdulhakim Abdanur, Demoze Jenbere,, & Mastewal Ayehu, G. T., Eden Asmare (2020). Contraceptive use and associated factors among sexually active reproductive age HIV positive women attending ART clinic at Felege Hiwot Referral Hospital, Northwest Ethiopia: A cross-sectional study *Heliyon, ScienceDirect*, 6, 2405-8440. doi:<https://doi.org/10.1016/j.heliyon.2020.e05653>

Views and opinions expressed in this article are the views and opinions of the author(s), *NPRC Journal of Multidisciplinary Research* shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.