EAST AFRICAN JOURNAL OF NURSING

https://doi.org/10.58460/eajn.v1i01.64

Open Access

ORIGINAL RESEARCH

MJM BIOLABS

Patterns of Hormonal Contraceptive Utilization Among Women with Retroviral Disease Receiving Antiretroviral Therapy at a Referral Hospital in Kenya

Mbori BELDINA AKINYI[1], Lydiah BOSIBORI MOMANYI[2], Gitonga JEFF MURANGIRI[1], Musiva JAMES MUTEI[1]

Authors' Affiliation

[1]Department of Pharmacology and Pharmacognosy, School of Pharmacy, Kabarak University

[2]Department of Pharmacy and Health Strengthening, Nakuru County Referral and Teaching Hospital

Article History

Submitted: 19th October 2023

Accepted: 16th October 2024

Published Online: 23rd January 2025

To read this paper online, please scan the QR code below:

ABSTRACT

Understanding the intricate interplay between hormonal contraceptive utilization and the unique healthcare needs of women with retroviral disease on antiretroviral therapy is of paramount importance in ensuring effective family planning strategies and optimal health outcomes. This research examined the patterns of hormonal contraceptive usage among this specific demographic within the setting of a referral hospital in Kenya, shedding light on the factors influencing choice, preferences, and the broader implications for reproductive health. A cross-sectional retrospective study design was employed for this study conducted at the Comprehensive Care Centre of Nakuru County Referral and Teaching Hospital in Kenya. Sample size was determined using the Taro Yamane formula, yielding 226 participants. Data was collected using a structured questionnaire validated through a pilot study, employing random sampling. Data was protected, monitored, analyzed using descriptive statistics and the Chi-squared test, with ethical considerations in place. The sociodemographic characteristics of participants were analyzed. Most were aged 35-39, married, self-employed, and had at least secondary education. Public hospitals were the primary source of contraceptives. Pregnancy prevention was the main reason for hormonal contraceptive use. Injectable contraceptives were preferred (37%), followed by implants (31.9%) and IUDs (15.7%). Notable association between employment status and use of specific contraceptives (*P-value=0.007175*) was found to be statistically significant. Further there was statistically significant association between ease of availability of implants (*P-value=0.02*), ease of use of injectable (*P-value=0.05*), and fewer side effects of IUDs (*P-value=0.00*) and their preference. We recommend emphasizing postpartum contraception services, ensuring contraceptive availability in public hospitals, promoting long-acting reversible contraceptives, and providing tailored counseling and education to empower women's informed choices.

***Keywords*:** hormonal contraceptives, antiretroviral therapy, IUDs, COCs, Implants.

INTRODUCTION

The prevalence of Human Immunodeficiency Virus (HIV) infections exerts a significant health burden globally. In particular, Sub-Saharan Africa continues to bear a disproportionate portion of this burden with women predominantly being the affected population. Evidently, as of 2022, the World Health Organization (WHO) estimated that about 39 million people were living with HIV/AIDS globally; out of which 25.6 million were found in Sub-Saharan Africa (WHO, 2022). Adults (15+ years) seem to be most affected contributing to about 96% of the global cases. Notably, 20 million women were living with HIV by end of the year 2021 worldwide compared to only 17.4 million men. Here in Kenya, there is about 1.4 million people living with HIV which contributes nearly to 4% of the global prevalence of HIV infection. Without proper medical attention, HIV infections have a poor prognosis and high mortality rate as underscored by WHO who reported an average of 630,000 deaths due to HIV-related causes in 2022. Advancement in retroviral disease treatment has led to emergence of antiretroviral therapy (ART) which has become the cornerstone management of HIV infections. Consequently, HIV patients have been able to live more productive and healthier lives. In Kenya, about 86% of the people living with HIV are on active antiretroviral therapy. Thus although, the complete control of HIV infections remains work in progress, initiatives such as the 90-90-90 HIV-programme are poised to yield promising improvements in near future.

Consequently, the focus on women living with HIV/AIDS is shifting to encompass not only reduction of viral loads but also fulfilment of their reproductive health needs. Indeed, the confluence of infectious diseases such as retroviral diseases and reproductive health remains salient especially in regions where HIV is a significant public health threat such as the Sub-Saharan Africa. As such, the use of hormonal contraceptives by women with HIV who are concurrently receiving ART has become an intriguing multifaceted area of study. This has largely been driven by the complex interplay between HIV, ART and use of hormonal contraceptives which is still relatively underexplored; particularly in resource-constrained regions such as Kenya.

Hormonal contraceptives are one of the modern contraception methods that have been established as an effective means of preventing unplanned pregnancies. They offer numerous options that are tailored to meet individual preferences of patients. They include implants, oral contraceptives and injectable. They help women exercise control over their reproductive choices which in the context of HIV infection would aid in minimizing vertical transmission of the infection. Despite their widespread use, much skepticism surrounding their safety, efficacy and drug-drug interactions with ART medications exists (Haddad et al., 2014). This has created the need to determine when, why and what factors influence the use of a specific hormonal contraceptive by women living with HIV/AIDS. Further, literature suggests that specific hormonal contraceptives may influence the virological control of HIV, its pathophysiology and overall immune response of the patient.

In Kenya, significant effort has been put in expanding access to ART especially among women of childbearing age. However, the patterns of utilization of hormonal contraceptives by women living with HIV/AIDS in Kenya has not been comprehensively explored. Factors such as cultural norms, sociodemographic characteristics, sources of contraceptives, reasons for contraception and start of using hormonal contraceptive influence contraceptive choices made by women living with HIV/AIDS. This study therefore aimed to assess patterns of hormonal contraceptive utilization by women afflicted with HIV/AIDS and are on active ART medications in a tertiary hospital in Kenya.

METHODS

Study Design & Location

This research utilized a cross-sectional retrospective study design. In this type of study design, elements of both retrospective and cross-sectional study approaches are utilized by gathering information concerning a population at a specific point in time, looking back into the past. This research was conducted at the Comprehensive Care Centre (CCC) of Nakuru County Referral and Teaching Hospital (NCRTH) located in Nakuru City along Nakuru-Sigor road.

Target & Study Population

The target population for this study comprised women of childbearing age who were attending the CCC, were using antiretroviral and were on hormonal contraception methods. Nakuru County Referral and Teaching Hospital is a primary treatment centre for more than 2.1 million people. The number of patients who are enrolled for antiretroviral therapy in the hospital is about 7600 where the number of women on antiretroviral therapy is 3417. In Nakuru county as of May 2022, the number people of diagnosed HIV patients was 58,575 (Mwangi, 2022).The hospital serves not only Nakuru county but environs such as Baringo, Laikipia, Kericho and Kiambu counties. It offers preventive, curative and diagnostic health services. It is currently a training and research ground for different healthcare professionals.

Inclusion Criteria

The study included women of childbearing age attending the Comprehensive Care Clinic at the NCRTH who were adherent to antiretroviral therapy, on at least one hormonal method of contraception, and had voluntarily consented to participate.

Exclusion Criteria

Women who were excluded from the study included those on non-hormonal contraception, those suffering from mental illnesses or disorders affecting mental function, HIV-negative women, HIV-positive women not on antiretroviral therapy, women non-adherent to antiretroviral therapy, women who declined to participate, pregnant women, and minors under 18 years of age unaccompanied by their guardians. These exclusions were necessary to ensure the validity and safety of the study.

Sample Size Determination

The study population for this research was 3417 women who are on antiretroviral therapy. Taro Yamane formula (Israel, 2003) was used to calculate our sample size of 378 at a confidence level at 95%**.** Only 226 participants were able to participate in the study within the set time frame and partly because the population to be sampled was of reproductive age and as a result, expectant mothers were automatically excluded from the study. Additionally, participants between the ages of 13 and 18 were also difficult to interact with as most were not accompanied to the clinic with their guardians hence consent could not be obtained. These factors contributed to a lower sample size than previously presumed.

Research Instruments

A structured questionnaire with close ended questions and sectioned twice was used to collect data. The questionnaire was thoroughly reviewed by the research supervisor to ensure only accurate information required for this study was included. Section A of the questionnaire collected data on demographic characteristics such as age, marital status, level of education, patients' religion, number of children and occupational status. Section B had questions on prevalence and pattern of contraceptive use; where respondents provided information on whether they had heard of family planning methods, which methods of family planning they had heard of, if they had ever used hormonal contraceptives in the past and also the type of contraception they had used, the reason for using the contraceptive and the source of acquiring the contraceptive.

Validity and Reliability of Research Instruments

We conducted a pilot study using 20 women who had HIV/AIDS and were taking antiretrovirals and at the same time they were using a hormonal contraceptive at the

Comprehensive Care Center at Nakuru County Referral and Teaching Hospital. This was necessary to establish reliability and validity of the questionnaire. This helped ensure that the language used could be understood clearly and the questions are concise, clear and short. It also helped establish the time required to administer a single questionnaire and its ability to capture data as per the objectives of the study. Any flaws identified in the questionnaire were corrected to ensure the objectives of the study were met before the actual study began. All the data obtained during the pilot study was excluded during actual data analysis.

Sampling Procedure

Simple random sampling method was used to select participants for this study. Unique numbers were randomly generated and issued to study participants who met the eligibility criteria and had consented. On a daily basis about 10 study participants who met the eligibility criteria could present at the CCC hence the estimated sample size could not be met within the limited time frame. This selection was done until a sample size of 226 participants was obtained. This was to ensure that the participants who met the eligibility criteria were included in the study without any biases.

Data Collection Procedure

Data was collected upon receiving approval from KUREC, approval from NACOSTI and permission from CCC pharmacy at NCRTH. Information about the study was explained to the eligible participants after which consent was obtained and the participants signed the consent forms. The participants were issued with questionnaires which were self-administered. All the questions were standardised so that the participants got the same questions with similar format, language and words. The patients stayed with the questionnaire for an estimated period of about 20 minutes. The research investigators provided help to the participants who were illiterate and those who had difficulties with the questions so as to obtain accurate information. The filled questionnaires were stored in a lockable file cabinet whose accessable only by the research investigators. The information from the questionnaires was then entered in a Microsoft excel designed database where the data was sorted and analysed.

Data Protection Procedure

This study involved interaction with the study participants and also handling of study information sheets, consent forms and questionnaires. The same interaction occurred during screening of the participants for eligibility. To protect the study participants, these interactions only took place in a private room where only the study investigators and the study participant were present.

Data Monitoring Plan

To ensure integrity and completeness of data during data collection, the data was screened to check for any missing data, outliers and other data related issues which could have an impact on the data integrity. Upon completion of data screening, the data was cleaned to remove errors and inconsistencies.

Data Analysis

Data obtained from the questionnaire was checked for any inconsistencies then sorted and entered in the Microsoft Excel package Version-*Microsoft Excel 2019*. It was then analysed using Statistical Package for Social Sciences(SPSS). Descriptive statistics was use to analyze sociodemographic characteristics, patterns of hormonal contraceptive use, sources of hormonal contraceptives, types of hormonal contraceptive used and the reason and time when a patient started using a specific hormonal contraceptive. Subsequently, the association between preference/reason and contraceptive use, as well as the association between socio-demographic factors and contraceptive choice, were explored using the Chi-squared test.

Ethical Considerations

Ethical approval to enable the research to be carried out was sought from the Kabarak University Ethics Review Committee (KUREC). Permission to conduct this study in was obtained from the National Commission for Science Technology and Innovation (NACOSTI). Permission to collect data from

the CCC department of NRTH was also obtained prior to start of data collection. Participants were provided with an information sheet with all details about the study. Any questions about the study were answered at that time. To avoid loss of privacy the questionnaires were stored in a file record cabinet which was lockable. Data extracted from the questionnaires was stored in a password protected laptop. The data collected was only handled and accessed by the research investigators, no other individual had access to the data. Collected data will be stored for a period of 5 years after which the electronic records will be discarded by deletion while the questionnaires will be destroyed by shredding. Prior to undertaking the research consent was obtained from the patients who were eligible and no patient was lured or forced in any way to be a participant in the study. Unique codes were used instead of patient names in the questionnaires. All the information obtained was handled with a lot of confidentiality.

RESULTS

Sociodemographic Characteristics

Table 1 below shows the sociodemographic characteristics of study participants. Majority of participants were between 35-39 years constituting 25.2% while participants aged 13-19 years constituted the smallest group at 0.4%. The mean age of participants was 34.5 years. Marital status demonstrated a spectrum of engagement, with the largest cohort (70.4%) being married, and the smallest (3.5%) being widowed. Occupational distribution indicated that the majority of participants were self-employed (56.2%), contrasting with the minority who were employed (16.8%). Education levels revealed that the highest portion (39.4%) had completed secondary education, while the lowest (2.2%) reported no educational background. Regarding family composition, the most study participants had two children (29.21%), followed closely by those with three children (28.31%), and a notable proportion with one child (19.92%). Participants with four children constituted 18.15% of the cohort, while smaller portions had five (3.09%), six (0.88%), and seven (0.44%) children.

Table 1:

Descriptive Analysis of Sociodemographic Characteristics of Study Participants

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	13-19	1	0.4
	20-24	26	11.5
	25-29	42	18.6
	30-34	56	24.8
	35-39	57	25.2
	40-45	33	14.6
	46-49	11	4.9
	Total	**226**	**100.0**
Marital status	Married	159	70.4
	Divorced	21	9.3
	Single	38	16.8
	Widowed	8	3.5
	Total	**226**	**100**
Occupational status	Employed	38	16.8
	Self employed	127	56.2
	Unemployed	61	27.0
	Total	**226**	**100.0**

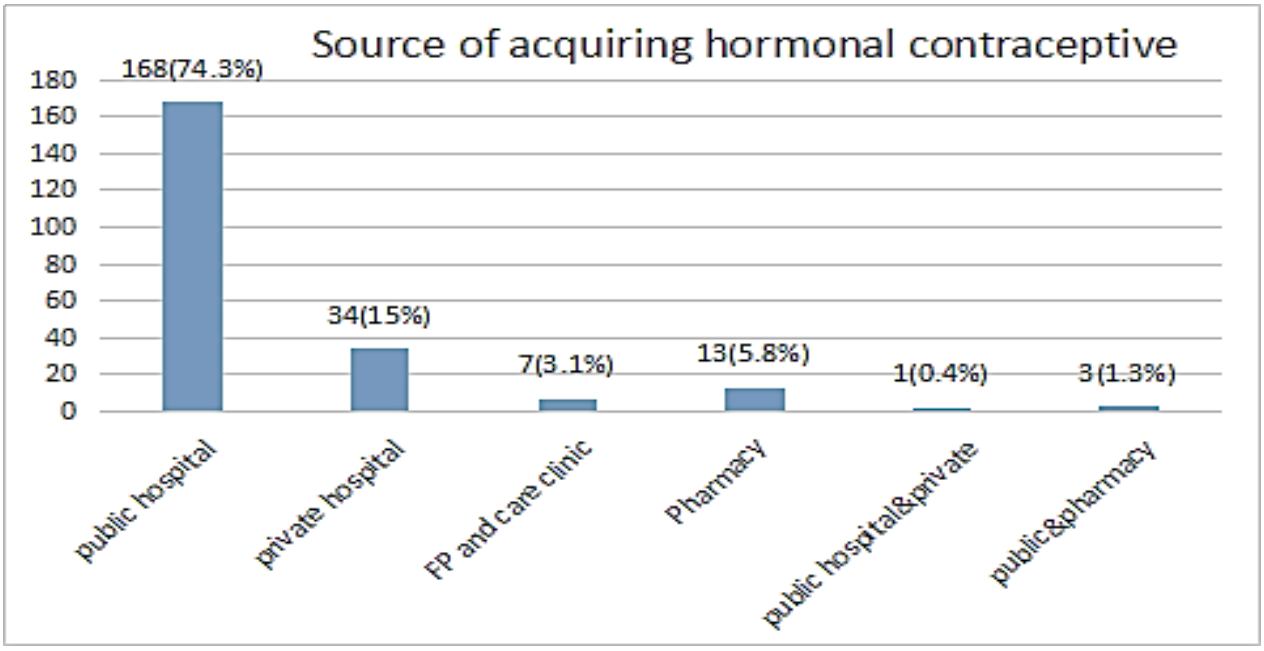
Variable	Category	Frequency (n)	Percentage (%)
Education level	None	5	2.2
	Primary	68	30.1
	Secondary	89	39.4
	College	53	23.5
	University	11	4.9
	Total	**226**	**100.0**
Religion	Catholic	55	24.3
	Protestant	157	69.5
	Muslim	1	0.4
	Others	13	5.8
	Total	**226**	**100.0**
Number of children	1	45	19.92%
	2	66	29.21%
	3	64	28.31%
	4	41	18.15%
	5	7	3.09%
	6	2	0.88%
	7	1	0.44%
	Total	**226**	**100.00%**

Source of Acquiring Hormonal Contraceptive

Figure 1 below shows that 168 (74.3%) participants acquired their hormonal contraceptives from a public hospital while 34 (15%) participants from a private hospital. Further, one study participant (0.4%) stated to have acquired the hormonal contraceptive from both a public and private hospital.

Figure 1:

Sources of Acquiring Hormonal Contraceptives as Indicated by Study Participants

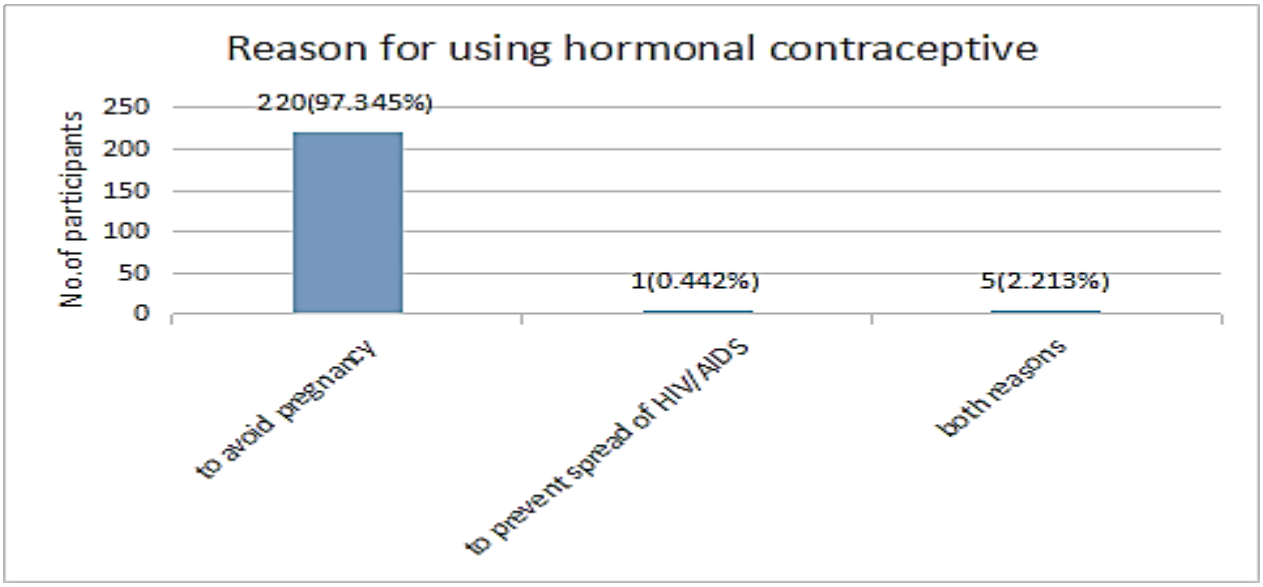


Reason for Use of a Particular Hormonal Contraceptive

Figure 2 below shows that majority (97.345%) of participants used a hormonal method of contraception to avoid getting pregnant while only 0.4% used a hormonal contraceptive to prevent spreading HIV/AIDS to their children. Notably, five (2.213%) study participants used hormonal contraceptives to avoid getting pregnant and also prevent the spread of HIV/AIDS.

Figure 2:

Reasons for Using a Hormonal Contraceptive as Noted by Study Participants

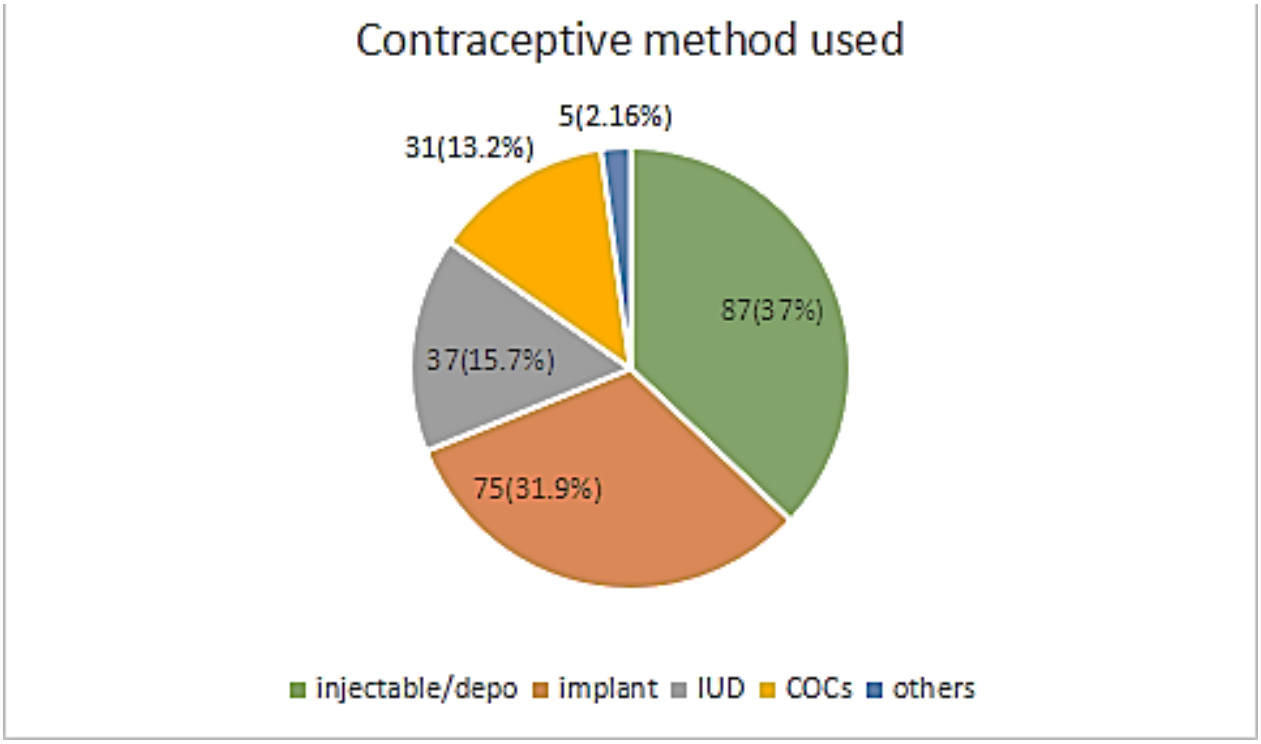


Choice of Contraceptive Method Used

Figure 3 below shows that the use of Injectable (Medroxyprogesterone) was the most used hormonal contraceptive (37%) while mini pill or progestin only pill was the least used (2.1%). The use of implant (31.9%) came in second while use of IUD was in third place (15.7%)

Figure 3:

Different Methods of Hormonal Contraceptives as Used by Study Participants

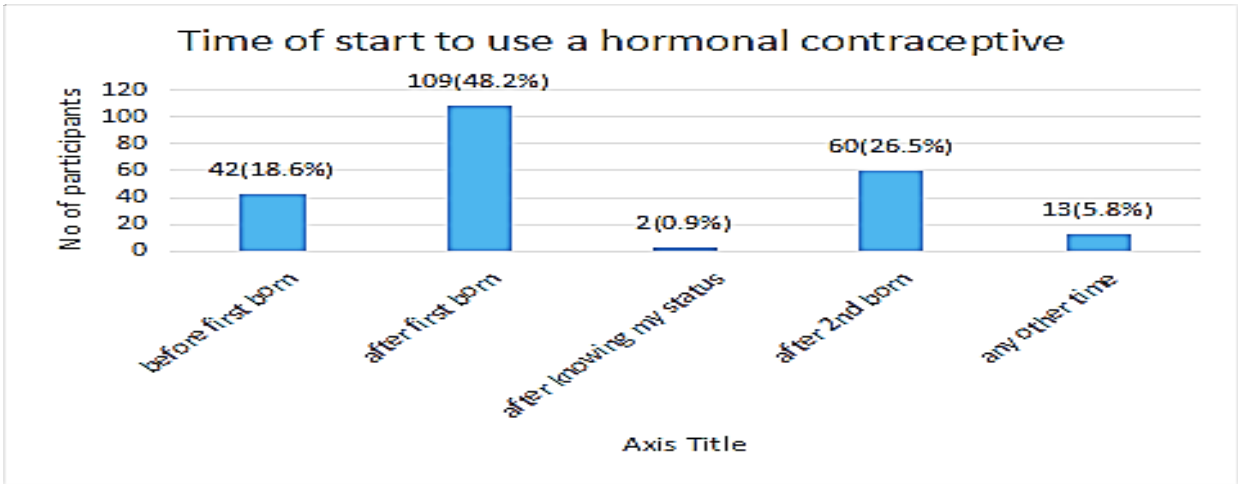


Initiation of Hormonal Contraceptive Use

Figure 4 below shows that 109 (48.2%) participants started using a hormonal contraceptive after delivering their first born. Forty two (18.6%) participants started using a hormonal contraceptive before the delivery of their first born. Sixty (26.5%) participants started using a hormonal contraceptive after delivery of their second born. notably 2 (0.9%) participants started using a hormonal contraceptive after knowing their HIV status while 13 (5.8%) participants were not able to tell the specific time they started using their contraceptive.

Figure 4:

Time of Initiation of Hormonal Contraceptive Use by Study Participants

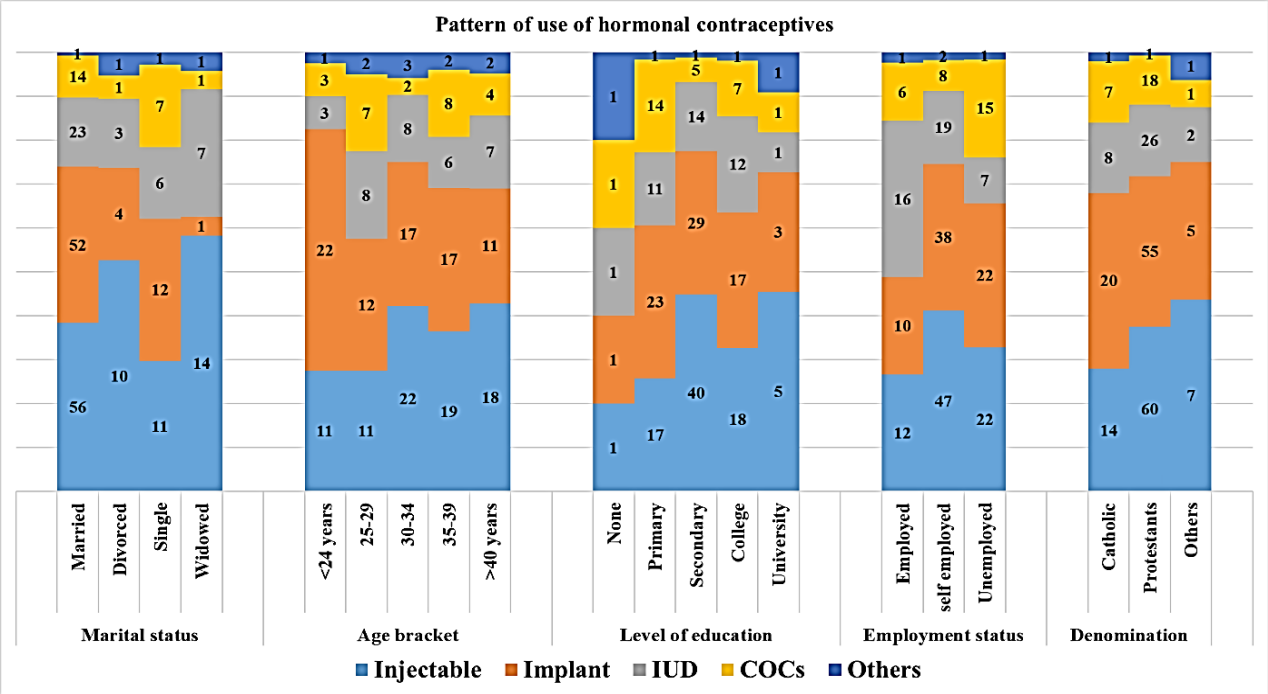


Pattern of Use of Hormonal Contraceptives with Regard to: Marital Status, Age, Level of Education, Occupational Status, Religion

Figure 5 below provides an analysis of type of hormonal contraceptive used depending on the sociodemographic characteristics of the study participants. **Marital Status**: Married individuals constitute the highest users of contraceptive methods, with Injectable being the most preferred method (38.35%). Divorced and Single individuals also utilize contraceptives, with injectable and Implant being a prominent choice (52.63% and 32.43% respectively). Widowed individuals preferably used the injectable type (58.33%). **Age Bracket**: The age bracket 25-29 years demonstrates substantial usage across all contraceptive methods, particularly Injectable and Implant (27.5% and 30% respectively). Individuals below 24 years preferred implants (55%) while those in the 30-34 age range prefer using injectable (42.31%). **Level of Education**: Participants with secondary education levels dominate contraceptive usage across all methods, with Injectable (44.94%), Implant (32.58%), and IUD (15.73%) being popular choices. Majority of individuals with primary (34.85%) and college (32.73%) education levels have a preference of using implants and injectable respectively. **Employment Status**: Employed women preferred using IUDS (35.56%) while self-employed individuals were active users of injectable (41.23. majority of unemployed individuals exhibit equal preference for using either injectable (32.84%) or implants (32.84%). **Denomination (Religious Affiliation)**: Catholics and Protestants respondent had a preference of using implants (40%) and injectable (37.5%) respectively.

Figure 5:

Patterns of Hormonal Contraceptive Usage as Governed by Sociodemographic Characteristics of Study Participants

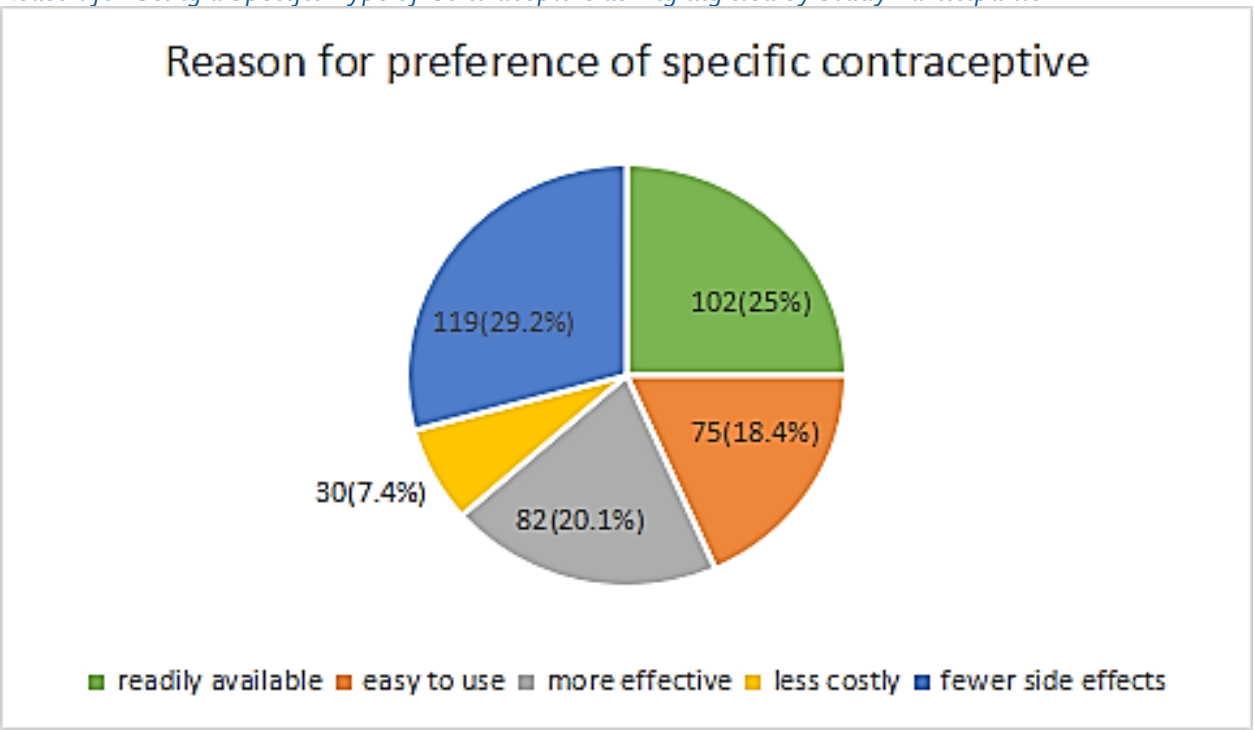


Preference/Reason for Using Specific Contraceptive

Figure 6 below shows that 119 (29.2%) participants preferred to use the contraceptive they were on at time of data collection because it had fewer side effects. Further, 102 (25%) participants preferred the contraceptive because it was readily available while 82 (20.1%) participants preferred the contraceptive they were on because it was more effective. Seventy five (18.4%) participants preferred the contraceptive because it was easy to use while 30 (7.4%) participants had a preference because it was less costly.

Figure 6:

Reason for Using a Specific Type of Contraceptive as Highlighted by Study Participants



Association Between Preference Reason and Use of Specific Hormonal Contraceptive

Table 2 below shows that there was a significant association between ease of availability of implants and their use (*P-value=0.02*). Additionally, there was an association between ease of use of injectable and their use (*P-value=0.05*). Lastly, there was an association between use of intrauterine devices mainly due to them having less side effects (*P-value=0.00*). However, there was no significant association between: ease of availability and use of injectable (*P-value=0.37*), intrauterine devices (*P-value=1.21*) and combined oral contraceptives (*P-value=0.10*); ease of use and the use of implant (*P-value=0.08*), intrauterine devices (*P-value=0.08*) and combined oral contraceptives (*P-value=0.22*).

Table 2:

Chi-Squared Analysis of Association Between Various Contraceptive Preference Reasons and Use of Specific Hormonal Contraceptive

	Injectable			Implant			IUD			COCs		
	proportion	X^2	P-value	Proportion	X^2	P-value	Proportion	X^2	P-value	Proportion	X^2	P-value
Readily available	43 (27.04%)	39.19	0.37	30 (24%)	30.80	0.02	12 (18.18%)	16.26	1.21	17 (26.56%)	15.77	0.10
Easy to use	30 (18.86%)	28.8	0.05	24 (19.2%)	22.64	0.08	11 (16.67%)	11.96	0.08	10 (15.63%)	11.59	0.22
More effective	37 (23.27%)	33.8	0.30	25 (20%0	26.57	0.09	17 (25.76%)	14.03	0.63	9 (14.06%)	13.60	1.56
Less costly	7 (4.4%)	11.91	2.20	6 (4.8%)	9.36	1.21	7 (10.61%)	4.94	0.86	11 (17.19%)	4.79	8.04
Fewer side effects	42 (26.41%)	45.3	0.24	40 (32%)	35.64	0.54	19 (28.79%)	18.81	0.00	17 (26.56%)	18.24	0.08

Association Between Socio-Demographics and Use of Specific Contraceptives

Table 3 below shows that there was only a statistically significant association between employment status and use of specific contraceptives (*P-value=0.007175*).

Table 3:

Analysis of Association Between Socio-Demographic Characteristics of Study Participants and the Use of Specific Contraceptives

Sociodemographic		Injectable	Implant	IUDs	COCs	Others
Marital Status	Married	56 (58.79)	52 (44.58)	23 (25.19)	14 (14.86)	1 (2.58)
	Divorced	10 (7.65)	4 (5.80)	3 (3.28)	1 (1.93)	1 (0.34)
	Single	11 (14.90)	12 (11.30)	6 (6.38)	7 (3.77)	1 (0.65)
	Widowed	14 (9.66)	1 (7.33)	7 (4.14)	1 (2.44)	1 (0.42)
Age	<24 years	11 (14.34)	22 (13.98)	3 (5.66)	3 (4.25)	1 (1.77)
	25-29	11 (14.34)	12 (13.98)	8 (5.66)	7 (4.25)	2 (1.77)
	30-34	22 (18.64)	17 (18.18)	8 (7.36)	2 (5.52)	3 (2.30)
	35-39	19 (18.64)	17 (18.18)	6 (7.36)	8 (5.52)	2 (2.30)
	>40 years	18 (15.05)	11 (14.68)	7 (5.95)	4 (4.46)	2 (1.86)
Employment status	Employed	12 (1.06)	10 (1.11)	16 (6.97)	6 (**0.01**)	1 (**0.05**)
	self employed	47 (0.92)	38 (0.20)	19 (0.23)	8 (3.00)	2 (**0.00**)
	Unemployed	22 (0.17)	22 (0.08)	7 (2.39)	15 (4.77)	1 (**0.03**)
Education Level	None	1 (1.79)	1 (1.62)	1 (0.86)	1 (0.62)	1 (0.11)
	Primary	17 (23.65)	23 (21.32)	11 (11.39)	14 (8.18)	1 (1.46)
	Secondary	40 (31.90)	29 (28.75)	14 (15.36)	5 (11.03)	1 (1.97)
	College	18 (19.71)	17 (17.77)	12 (9.49)	7 (6.81)	1 (1.22)
	University	5 (3.94)	3(3.55)	1 (1.90)	1 (1.36)	1 (0.24)
Denomination	Catholic	14 (17.92)	20 (17.70)	8 (7.96)	7 (5.75)	1 (0.66)
	Protestants	60 (57.35)	55 (56.64)	26 (25.49)	18 (18.41)	1 (2.12)
	Others	7 (5.73)	5 (5.66)	2 (2.55)	1 (1.84)	1 (0.21)

n (P-value provide in brackets)

DISCUSSION

Hormonal contraceptives are a method of birth control that contains synthetic hormones (estrogen and/or progestin) which are similar to natural reproductive hormones produced by the female body. These contraceptives work by altering the hormonal balance in the body to prevent pregnancy through various means such as inhibiting ovulation, thickening cervical mucus to impede sperm entry and changing the thickness of the uterine lining making implantation less likely. As such, women of childbearing age use various forms of hormonal contraceptives such as oral contraceptives, injectable contraceptives, hormonal implants, hormonal IUDs and hormonal patch to avoid getting unplanned pregnancies. The choice to use a particular hormonal contraceptive method is governed by several factors such as potential side effects, health status of patients, concurrent medications and costs among other factors. In the event that a woman is suffering from another health conditions, their contraceptive choice spectrum is often limited. This is further worsen if the women are on other medications. All these limitations are in a bid to ensure efficacy of such hormonal contraceptives is maintained even in such non-homeostatic conditions. Correspondingly, women diagnosed with HIV/AIDS and are on antiretroviral therapy are at a higher risk of contraceptive failure due to the potential disease- and drug-drug interactions. Consequently, the pattern of hormonal contraceptive use by women suffering from HIV/AIDS is not only governed by personal preference but by such exogenous factors as outlined previously. This study therefore aimed to investigate patterns of hormonal contraceptive utilization among women with retroviral disease receiving antiretroviral therapy at a referral hospital in Kenya.

A total of 226 participants were recruited in this study representing a 60% response rate. Evidently majority of participants were between 35-39 years (25.2%), married (70.4%), self-employed (56.2%), reached secondary school education as their highest level (39.4%), were protestants (69.5%) and had an average of 2 children (29.21%). in contrast, Lunani *et al*. (2018) reports that majority of childbearing women in Kenya are between 15 and 24 years. In general, the sociodemographic outlooks portray that most women in Nakuru county diagnosed with HIV/AIDS and on ART and contraceptive use are literate, prefer not having many children and are protestants.

Majority of study respondents (74.3%) source their hormonal contraceptives from a public hospital. Comparatively, Corroon et al. (2016) reports that in Kenya, drug shops and pharmacies were the major sources of oral contraceptive pills while injectable contraceptives were majorly obtained from public facilities. Evidently, almost all respondents (97.345%) were using a particular hormonal contraceptive to avoid getting pregnant reflecting correct use of such and knowledge of such medications. Notably only 0.4% of study participants used hormonal contraceptives to prevent spreading HIV/AIDS to their children. Thus although hormonal contraception does not protect against HIV or other sexually transmitted disease (UNAIDS, 2012), study by Sherwood et al. (2021) showed that use of contraception by women living with HIV prevented an estimated 43,559 new infant infections with HIV annually across 70 countries. In addition, most respondents (48.2%) started using hormonal contraceptives after delivering their first child. This may be due to the fact that their either knew their status while delivering the first child or were not looking forward to having another child.

In terms of choice for a given method of hormonal contraception, majority (37%) preferred the Injectable (Medroxyprogesterone) contraceptives. This parallels study by Feyissa et al. (2020) who found out that 44.8% of sexually active women living with HIV prefer using injectable as a method of contraception. This is despite the fact that they are anecdotal evidence showcasing that use of injectable medroxyprogesterone contraceptives may increase the risk of a woman acquiring HIV or transmitting it to uninfected males (Haddad et al., 2014). However, Polis et al. (2016) states that injectable contraceptives are most popular hormonal contraceptives in resource-constrained settings such as Kenya.

Interestingly, only 13.2% of respondents used combined oral contraceptives. This may be done to reduce the pill burden the woman living with HIV/AIDS has. In addition, Robinson et al. (2012) reports that concurrent use of COCs and certain ARVs decreases serum levels of estrogen and progestin which could contribute to less advocating of use of such contraception method by physicians.

This study went ahead to look at patterns of hormonal contraceptive use based on sociodemographic characteristic of study participants. The patterns of contraceptive use as influenced by sociodemographic factors, as depicted in Figure 5, underscore the importance of considering various dimensions of women's lives when designing contraceptive interventions. Marital status appears to influence the choice of contraceptive method, with married individuals primarily favoring injectable. Age bracket plays a role, with different methods being preferred across different age groups. Education levels show an interesting trend, with secondary education holders predominantly using injectable and implants. Employment status and religious affiliation also exhibit variations in contraceptive choices. This aligns with prior research suggesting that these variables play a crucial role in shaping women's access to and preferences for contraceptive methods (Alspaugh et al., 2019; Kiplagat, 2016). Figure 6 delves into the reasons behind contraceptive preference, where effectiveness, fewer side effects, ease of use, and cost are identified as critical factors influencing contraceptive decision-making. This is a common theme in reproductive health studies globally. This analysis resonates with previous research that highlights factors such as side effects, availability, effectiveness, ease of use, and cost as pivotal in contraceptive decision-making (Hall, 2011).

The chi-squared analysis in Table 2 shows significant associations between various preference/reasons and the use of specific contraceptive methods. The association between ease of availability and the use of implants suggests the importance of accessibility in contraceptive utilization as reported by Jacobstein (2018). Similarly, associations between ease of use and fewer side effects with injectable and IUDs was also noted pointing to the value of user-friendly methods with fewer adverse effects. These associations can contribute to the development of tailored interventions. The finding aligns with previous studies emphasizing the need to align contraceptive education and access with women's preference reasons (Zeal et al., 2022). Table 3 underscores the impact of employment status on contraceptive use, suggesting potential links between occupational roles and contraceptive choices. This finding resonates with study by McDougal et al. (2021) indicating that employment status can influence contraceptive behaviors due to factors like economic independence and decision-making power.

CONCLUSION

This study demonstrates that demographic factors, such as age, marital status, education, and employment, significantly influence the choice of hormonal contraceptive methods among women with retroviral diseases in Kenya. Additionally, access to healthcare, the effectiveness of contraceptive methods, and ease of use are crucial factors driving contraceptive choices in this population.

RECOMMENDATIONS

To enhance contraceptive uptake among women with retroviral diseases, healthcare providers should prioritize increasing access to a variety of hormonal contraceptive methods and providing comprehensive education on contraceptive options, benefits, and potential side effects. Additionally, integrating contraceptive services into existing HIV care programs can help to address the specific needs of women with retroviral diseases, reduce barriers to contraceptive use, and improve overall health outcomes.

REFERENCES

Alspaugh, A., Barroso, J., Reibel, M., & Phillips, S. (2019). Women's contraceptive perceptions, beliefs, and attitudes: An integrative review of qualitative research. *Journal of Midwifery & Women's Health*, *65*(1), 64-84. https://doi.org/10.1111/jmwh.12992

Corroon, M., Kebede, E., Spektor, G., & Speizer, I. (2016). Key role of drug shops and pharmacies for family planning in urban Nigeria and Kenya. *Global Health: Science and Practice*, *4*(4), 594-609. https://doi.org/10.9745/ghsp-d-16-00197

Feyissa, T. R., Harris, M. L., Forder, P. M., & Loxton, D. (2020). Contraceptive use among sexually active women living with HIV in western Ethiopia. *PLOS ONE*, *15*(8), e0237212. https://doi.org/10.1371/journal.pone.0237212

Haddad, L. B., Polis, C. B., Sheth, A. N., Brown, J., Kourtis, A. P., King, C., Chakraborty, R., & Ofotokun, I. (2014). Contraceptive methods and risk of HIV acquisition or female-to-Male transmission. *Current HIV/AIDS Reports*, *11*(4), 447-458. https://doi.org/10.1007/s11904-014-0236-6

Hall, K. S. (2011). The health belief model can guide modern contraceptive behavior research and practice. *Journal of Midwifery & Women's Health*, *57*(1), 74-81. https://doi.org/10.1111/j.1542-2011.2011.00110.x

Israel, G. D. (2003). *Determining Sample Size*. University of Florida. Retrieved from https://www.tarleton.edu/academicassessment/documents/samplesize.pdf

Jacobstein, R. (2018). Liftoff: The blossoming of contraceptive implant use in Africa. *Global Health: Science and Practice*, *6*(1), 17-39. https://doi.org/10.9745/ghsp-d-17-00396

Kiplagat, C. E. (2016). *Determinants of Contraceptive Choices Among HIV Positive Women of Reproductive Age Attending Comprehensive Care Centre at Kitale County Referral Hospital, Kenya* [Master›s thesis]. https://ir-library.ku.ac.ke/bitstream/handle/١٥٠٢٨/١٢٣٤٥٦٧٨٩/Determinants٢٠٪of٢٠٪Contraceptive٢٠٪Choices.....pdf?sequence=١&isAllowed=y

Lunani, L. L., Abaasa, A., & Omosa-Manyonyi, G. (2018). Prevalence and factors associated with contraceptive use among Kenyan women aged 15–49 years. *AIDS and Behavior*, *22*(S1), 125-130. https://doi.org/10.1007/s10461-018-2203-5

McDougal, L., Singh, A., Kumar, K., Dehingia, N., Barros, A. J., Ewerling, F., Atmavilas, Y., & Raj, A. (2021). Planning for work: Exploring the relationship between contraceptive use and women's sector-specific employment in India. *PLOS ONE*, *16*(3), e0248391. https://doi.org/10.1371/journal.pone.0248391

Mwangi, E. (2022, May 9). *Nakuru County intensifies fight against HIV – Kenya News Agency*. Kenya News Agency. Retrieved March 26, 2023, from https://www.kenyanews.go.ke/nakuru-county-intensifies-fight-against-hiv/

Polis, C. B., Bradley, S. E., Bankole, A., Onda, T., Croft, T., & Singh, S. (2016). Typical-use contraceptive failure rates in 43 countries with demographic and health survey data: Summary of a detailed report. *Contraception*, *94*(1), 11-17. https://doi.org/10.1016/j.contraception.2016.03.011

Robinson, J. A., Jamshidi, R., & Burke, A. E. (2012). Contraception for the HIV-positive woman: A review of interactions between hormonal contraception and antiretroviral therapy. *Infectious Diseases in Obstetrics and*

Gynecology, *2012*, 1-15. https://doi.org/10.1155/2012/890160

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). https://doi.org/10.1186/s12889-021-10570-w

UNAIDS. (2012). *HIV and hormonal contraception*. https://www.unaids.org/sites/default/files/media_asset/JC2309_HIV_hormonal_contraception_en_0.pdf

Zeal, C., Paul, R., Dorsey, M., Politi, M. C., & Madden, T. (2022). Young women's preferences for contraceptive education & development of an online educational resource. *PEC Innovation*, *1*, 100046. https://doi.org/10.1016/j.pecinn.2022.100046