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Assessment of Knowledge, Attitudes, and Barriers Influencing Hormonal Contraceptive Utilization among Women Afflicted with Retroviral Disease Receiving Antiretroviral Therapy at a Referral Hospital in Kenya

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ABSTRACT

Contraception among women living with HIV is crucial not only to avoid getting unplanned pregnancies but also minimize transmission of virus to either partner or unborn child. Uptake of contraception by such cohort of women is however governed by multiple factors. This study thus aimed to examine the knowledge, attitudes and barriers influencing hormonal contraceptive utilization among women living with HIV/AIDS and are on antiretroviral therapy. The study was a cross-sectional retrospective study carried out at the comprehensive Care Centre (CCC) at NCRTH from March 2023 to April 2023. Taro Yamane formula was used to determine the sample size. Simple random sampling was our method of sample determination. Use of structured questionnaires with close ended questions was our method of data collection. Data analysis was conducted using a statistical package for social sciences (SPSS) software version 26. Descriptive data was presented using frequency tables, bar graphs and percentages. The descriptive statistics done included mode, median and mean while the inferential statistics was done using chi-square analysis. $P<0.05$ was considered significant. Healthcare providers were the main source (67.2%) of hormonal contraceptive knowledge followed by social media (14%) emerged as an influential platform, while traditional media had limited impact. Peer and partner influence played roles, with 61.06% making independent contraceptive decisions. Partners (30.09%) and healthcare providers (21.68%) also influenced decisions. Majority (82%) used contraceptives to avoid unwanted pregnancies, while 74.77% valued their benefits over side effects. Bleeding was the most common hormonal contraceptive side effect across the different methods, particularly in injectables (45.23%). Injectable, implant, and IUD users reported amenorrhea. Weight-related effects varied by method. Mood swings were prevalent, especially in implant users (14.86%). Chi-squared analysis indicated associations between methods and specific side effects; with injectables and mini pills having highest and lowest frequency of associated side effects respectively. Participants' religious values (75%), affordability (70%), and lack of belief in contraceptive-related infertility (69%) were influential in contraceptive use decisions. No religion was found to outright deny contraceptive use. The factors influencing knowledge acquisition and decision-making on hormonal contraceptives among women underscores the need for effective communication strategies, diversified information dissemination, and individualized healthcare guidance to empower women in making informed reproductive health choices.

Keywords: Hormonal contraceptive utilization, Women living with HIV, Knowledge and attitudes, Barriers to contraception, Antiretroviral therapy

INTRODUCTION

Even with advancement in technology witnessed in the current modern world, HIV/AIDS still remains a global epidemic (Warren et al., 2017). Evidently, it is the number one leading cause of illness and death globally (UNAIDS, 2018). Since its inception, nearly 76 million people have been infected with about half of them dying from AIDS-related illnesses (UNAIDS, 2016). Notably, as recent as 2017, approximately 36.9 million people were infected with the virus out which 18.2 million were women of reproductive age while 1.8 million were children below 15 years of age (World Health Organization, 2020). Correspondingly, infants, young children and women account for more than half of new infections being recorded particularly in Sub-Saharan Africa. In Kenya, HIV/AIDS burdens 1.4 million people with significant mortality and morbidity rates (National AIDS Control Council, 2018). Luckily, development of antiretroviral therapy (ART) has revolutionized the management of HIV/AIDS principally by suppressing viral replication. Consequently, people living with HIV/AIDS (PLWHIV) have had better quality of life and increased life expectancy. This has also been aided by the implementation of targeted programme such as the 90-90-90 treatment for all; which aimed aims at ensuring: 90% of all PLWHIV know their status- 90% of people diagnosed with HIV receive sustained antiretroviral therapy and that 90% of people receiving ART have viral suppression (UNAIDS, 2020). However, there is still a significant number of new infections particularly among infants. Due to the increased life expectancy, improved life quality and high rates of new infant HIV infections, the focus has shifted beyond infection management and control to encompass holistic health approaches by including reproductive health and family planning.

Therefore, the question of uptake and effective utilization of contraception by women living with HIV/AIDS is thus raised. Such a cohort of individuals faces unique reproductive health challenges due to the potential risk associated with pregnancy and vertical transmission of the virus (Comfort et al., 2022; Forsyth et al., 2002). Correspondingly, use of hormonal contraceptives such as implants, injectables and oral contraceptives helps women exercise control over their reproductive choices and the means to plan pregnancies, reduce the risk of vertical transmission, and ensure optimal health outcomes for both the mother and child (WHO, 2019). The utilization of hormonal contraceptives by women living with HIV/AIDS necessitates consideration of multiple factors such as drug-drug interactions, drug-disease interactions and individual preferences. Moreover, cultural and societal influences, extend of awareness created and attitude of healthcare providers also tend to shape the decisions a woman makes in regards to hormonal contraception (Dombola et al., 2021). Therefore, the intersection of HIV infection, ART and hormonal contraceptive use is complex and requires a comprehensive understanding of women's knowledge, attitudes and barriers. Against this backdrop, we sought to assess the knowledge, attitudes and barriers influencing hormonal contraceptive utilization among women living with HIV/AIDS who are undergoing ART at a referral hospital in Kenya.

METHODS

Study Design & Location

This study employed a cross-sectional retrospective study design, combining elements from both retrospective and cross-sectional methodologies. This approach involved collecting data about a specific population at a particular moment while also retrospectively analyzing past information. The research was carried out at the Comprehensive Care Centre (CCC) of Nakuru County Referral and Teaching Hospital (NCRTH), situated along Nakuru-Sigor road within Nakuru City.

Target & Study Population

The target population for this study encompassed women within the reproductive age group who were attending the CCC of NCRTH for antiretroviral treatment, and were also using hormonal contraceptive methods. Nakuru County Referral and Teaching Hospital functions as a primary healthcare hub catering to a population exceeding 2.1 million individuals.

The hospital registers approximately 7,600 patients enrolled in antiretroviral therapy, with around 3,417 of these being women. In Nakuru county alone, the recorded count of diagnosed HIV patients reached 58,575 as of May 2022 (Mwangi, 2022). The hospital's service reach extends not only to Nakuru county but also to neighboring regions, including Baringo, Laikipia, Kericho, and Kiambu counties. The institution provides an array of preventive, curative, and diagnostic health services and currently serves as a training and research hub for various healthcare professionals.

Inclusion Criteria

Those included in the study were patients who;

i. Are women of child-bearing age.

ii. Attend the Comprehensive Care Clinic at the NCRTH.

iii. Are adherent to Antiretroviral Therapy i.e those who do not miss taking their antiretroviral drugs.

iv. Are on at least a hormonal method of contraception for pregnancy prevention.

v. voluntarily provided consent to be included in the study.

Exclusion Criteria

Those excluded from the study were:

i. Women on non-hormonal methods of contraception.

ii. Women suffering from mental illness or disorders affecting mental function as these are patients who may not be able to give voluntary and well-informed consent due to impaired judgement.

iii. Women who are HIV negative.

iv. Women who are HIV positive and not on ART.

v. women who are non-adherent to antiretroviral therapy.

vi. women who decline to provide consent to be included in the study.

vii. Expectant mothers were automatically excluded from the study as they could not be on any form of hormonal contraception.

viii. Participants between the ages of 13 and 18 years who were not accompanied to the clinic with their guardians hence consent could not be obtained

Sample Size Determination

The research focused on a study population consisting of 3,417 women undergoing antiretroviral therapy. To determine the appropriate sample size, the Taro Yamane formula (Israel, 2003) was applied, resulting in a calculated sample size of 378, with a confidence level of 95%. However, due to specific constraints and considerations, only 226 participants were successfully enrolled within the specified timeframe. One contributing factor was the reproductive age of the target population, leading to the automatic exclusion of expectant mothers from the study. Furthermore, engaging with participants aged 13 to 18 proved challenging, as many of them were unaccompanied by guardians during clinic visits, preventing the acquisition of informed consent. These combined factors collectively led to a smaller sample size than initially projected.

Research Instruments

Data collection employed a structured questionnaire featuring close-ended questions that were divided into four distinct sections. The questionnaire underwent rigorous scrutiny by the research supervisor to ensure the inclusion of exclusively pertinent and accurate information essential for the study. Section A of the questionnaire encompassed data collection concerning knowledge on use of hormonal contraceptives. In Section B, inquiries were directed toward attitudes and influences on use of hormonal contraceptives. In section C, respondents were prompted to indicate barriers they face in using of hormonal contraceptives while the last section had questions addressing impact of support from health care providers on use of contraceptives.

Validity and Reliability of Research Instruments

A pilot study was executed involving 20 women

diagnosed with HIV/AIDS, concurrently receiving antiretroviral treatment and on a hormonal contraceptive at the Comprehensive Care Center located within Nakuru County Referral and Teaching Hospital. This preliminary investigation aimed to validate and ensure the reliability of the questionnaire employed in the main study. This process facilitated the evaluation of questionnaire comprehensibility, precision, conciseness, and brevity of the questions. Additionally, the pilot study assisted in gauging the time required for administering an individual questionnaire and its effectiveness in capturing data aligned with the study's objectives. Any identified shortcomings in the questionnaire were rectified to ensure alignment with the study's objectives prior to initiating the main research phase. It is pertinent to note that data acquired during the pilot study were excluded from the subsequent actual data analysis.

Sampling Procedure

This study's methodology employed simple random sampling technique to select participants. Distinctive numerical identifiers were generated in a random manner and assigned to eligible study participants who had provided informed consent. Due to a daily influx of approximately 10 eligible study participants at the Comprehensive Care Centre (CCC), it was observed that the stipulated sample size could not be feasibly achieved within the predetermined timeframe. Consequently, only a final sample size of 226 participants was attained. This approach was adopted to guarantee the unbiased inclusion of eligible participants in the study, ensuring the absence of partiality or prejudice.

Data Collection Procedure

Data collection commenced following the receipt of approvals from KUREC, NACOSTI, and the CCC pharmacy at NCRTH. The study's particulars were comprehensively explained to eligible participants, and their explicit consent was then obtained. Subsequently, participants were provided with self-administered questionnaires. These questionnaires were standardized to ensure uniformity in terms of format, language, and vocabulary, thereby offering identical questions to all participants. The respondents were allocated an approximate timeframe of 20 minutes to complete the questionnaires. In instances where participants faced illiteracy or challenges in comprehending the questions, the research investigators offered assistance to ensure the accuracy of information obtained. The completed questionnaires were securely stored within a lockable file cabinet, accessible solely by the research investigators. Subsequently, the data extracted from the questionnaires was meticulously input into a database structured using Microsoft Excel to facilitate sorting and systematic analysis of the collected data.

Data Protection Procedure

This research encompassed engagement with study participants, handling of study information sheets, consent forms, and questionnaires. Comparable interactions were also conducted during the screening phase to determine participants' eligibility. In order to ensure the safeguarding of study participants, these interactions were exclusively conducted within a designated private room, thereby limiting the presence to solely the study investigators and the respective participant. This measure was instituted to uphold participant confidentiality and provide an environment conducive to candid and confidential communication.

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 following which it was systematically organized and entered into the Microsoft Excel software (*v-Microsoft Excel 2019*). Subsequently, the data was subjected to analysis through Statistical Package for the Social Sciences (SPSS). Data analysis encompassed the application of descriptive

statistics and inferential analysis to check for association at 95% confidence interval.

Ethical Considerations

Prior to the initiation of the research, the necessary ethical clearances were procured through the Kabarak University Ethics Review Committee (KUREC), as indicated by reference number [...]. Authorization to conduct the study was further obtained from the National Commission for Science, Technology, and Innovation (NACOSTI), with reference number [...]. Additionally, formal permission was acquired from the CCC department of Nakuru County Referral and Teaching Hospital (NRTH) prior to the commencement of data collection. To ensure participants' understanding, an exhaustive information sheet detailing all pertinent aspects of the study was provided. Any inquiries participants had been addressed during this period. In order to uphold participants' privacy, the questionnaires were securely stored within a lockable file cabinet. The extracted data from the questionnaires was stored on a laptop secured with password protection. The handling and accessibility of the collected data were strictly restricted to the research investigators, with no external parties granted access to the data. The accumulated data will be retained for a period of 5 years, after which electronic records will be expunged through deletion, while the physical questionnaires will be destroyed via shredding. In adherence to ethical standards, consent was obtained from eligible patients prior to their involvement in the research, ensuring that participation was entirely voluntary and free from any form of coercion. To uphold anonymity, unique codes were assigned to participants in place of their names within the questionnaires. Rigorous confidentiality measures were applied to all gathered information.

RESULTS

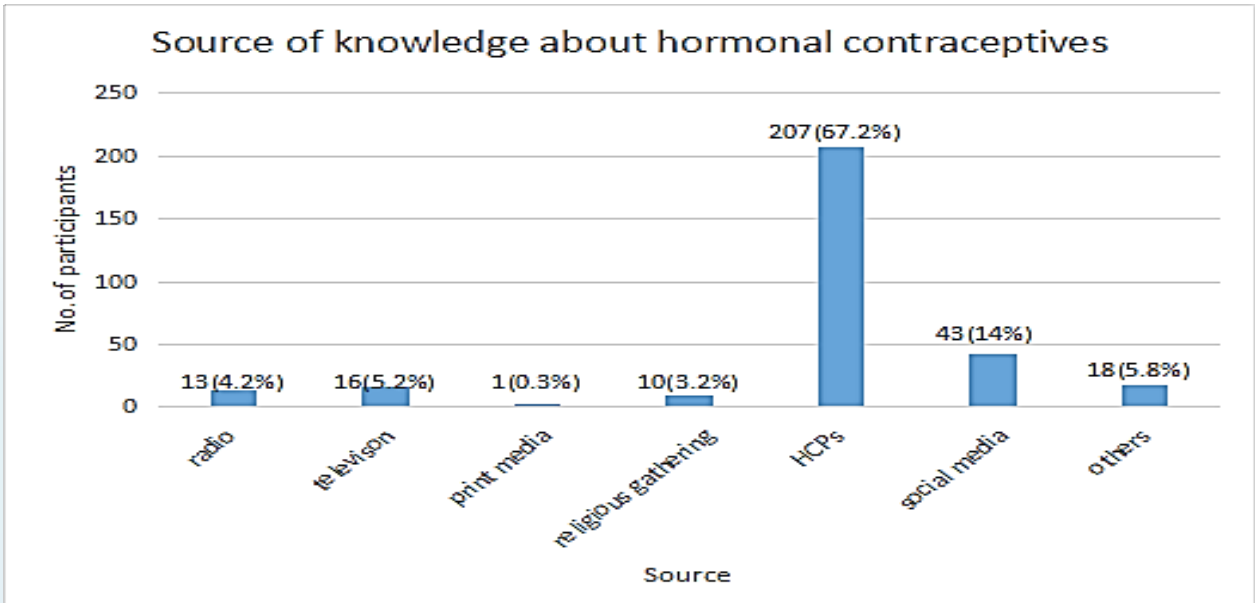
Knowledge on Use of Hormonal Contraceptives

All the study participants reported having heard of hormonal methods of contraception one way or the other from multiple sources.

Source of Knowledge About Hormonal Contraceptives

Figure I below shows that 207 (67.2%) participants claimed that they acquired the knowledge about hormonal contraceptives from health care providers. Forty-three (14%) participants acquired the knowledge from social media. Only one (0.3%) participant claimed to have acquired the knowledge about hormonal contraceptives from print media. Thirteen (4.2%) participants had acquired the knowledge from radio stations. Sixteen (5.2%) participants had acquired the knowledge from television. Ten (3.2%) participants had acquired the knowledge from religious meetings.

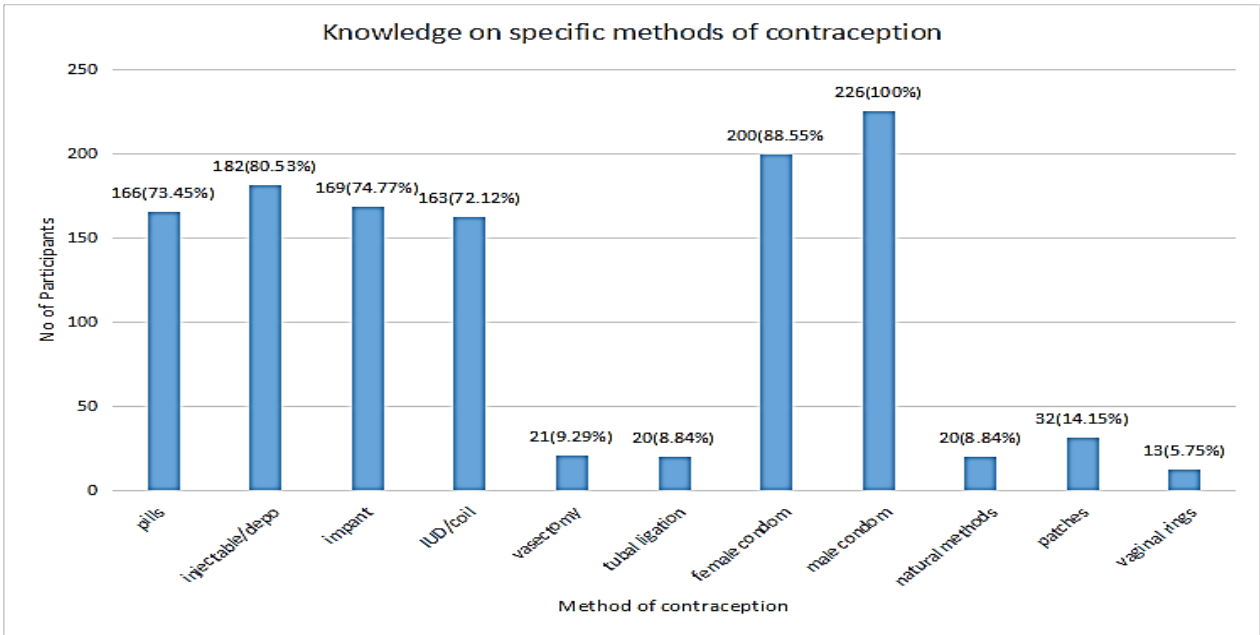
Figure 1:
Source of Knowledge about Hormonal Contraceptives as Indicated by Sampled Participants



Knowledge on Specific Methods of Contraception

Figure 2 below shows that all the participants had knowledge about male condoms. Two hundred (88.55%) participants had knowledge about female condoms. One hundred and eighty two (80.53%) participants had knowledge about injectable or depo-provera. One hundred and sixty nine (74.77%) participants had knowledge about implants. One hundred and sixty six (73.45%) participants had knowledge about pills. One hundred and sixty three participants (72.12%) participants had knowledge about coil or intrauterine devices. Twenty one (9.29%) participants had knowledge about vasectomy. Twenty (8.84%) participants had knowledge about bilateral tubal ligation and natural methods respectively. Thirty two (14.15%) participants had knowledge about patches. Thirteen (5.75%) participants had knowledge about vaginal rings.

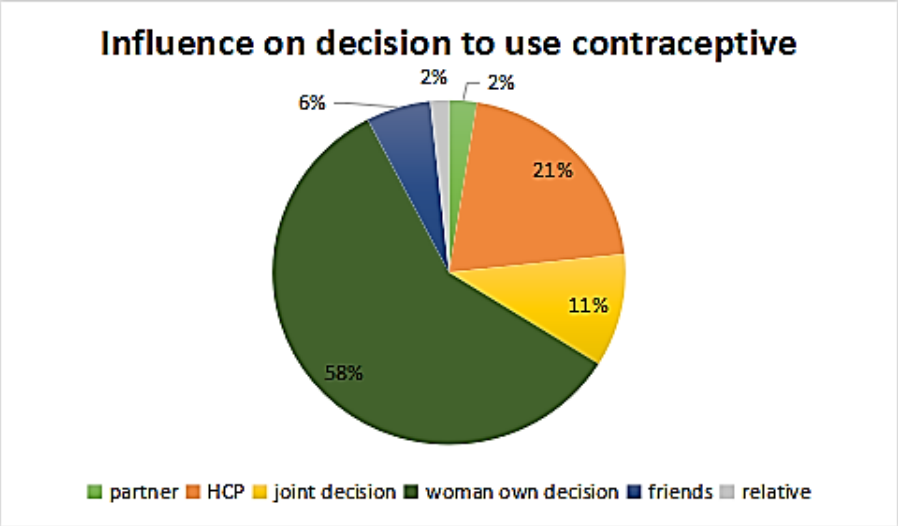
Figure 2:
Frequency of Knowledge on Specific Methods of Contraception by Study Participants



Parties Influencing Use of Hormonal Contraceptives

Figure 3 below shows that 138 (61.06%) participants stated that the decision to use hormonal contraceptives was their own decision. Sixty eight (30.09%) participants stated that their partners influenced their decision to use hormonal contraceptives. Forty nine (21.68%) participants stated that the health care providers influenced their decision to use hormonal contraceptives. Twenty five (11.06%) participants stated that the decision to use hormonal contraceptives was a joint decision with their partners. Four (1.77%) participants stated that their relatives had influenced their decision to use a hormonal contraceptive.

Figure 3:
Frequency of Influencers on Study Participants Decision to Use Hormonal Contraceptives



Factors influencing Decision to Use Hormonal Contraceptive

Table 1 below shows 71 participants (31%) strongly disagreed that partners influenced their decision to use contraceptives. Sixty five participants strongly agreed that their partners influenced their use of contraceptives. Twenty participants had a neutral opinion on the partner's influence to use contraceptives. Sixty eight (30%)participants strongly disagreed that their peers influenced them to use hormonal contraceptives. Twenty three (10%) participants strongly agreed that their peers influenced them to use hormonal contraceptives. Fifty five (24%) participants had a neutral opinion on peer influence to use contraceptives. One hundred and eighty five (82%) participants strongly agreed that they use hormonal contraceptives to avoid unwanted pregnancies. 2 (1%)participants disagreed that they use contraceptives to avoid unwanted pregnancies. 5 (2%) participants had a neutral opinion. One hundred and sixty nine (74.77%) participants strongly agreed that they use hormonal contraceptives because they have more benefits than side effects. Only one (0.4%) participant strongly disagreed that hormonal contraceptives have more benefits than side effects. Two participants had a neutral opinion. One hundred and fourteen (50%) participants strongly disagreed that they must use a convenient and effective contraceptive to avoid infecting their partners. Seventy participants had a neutral opinion. Eight participants strongly agreed that they must use a convenient and effective contraceptive to avoid infecting their partner.

Table 1:
Factors Influencing Decision to Use Hormonal Contraceptives as Pointed Out by Study Participants

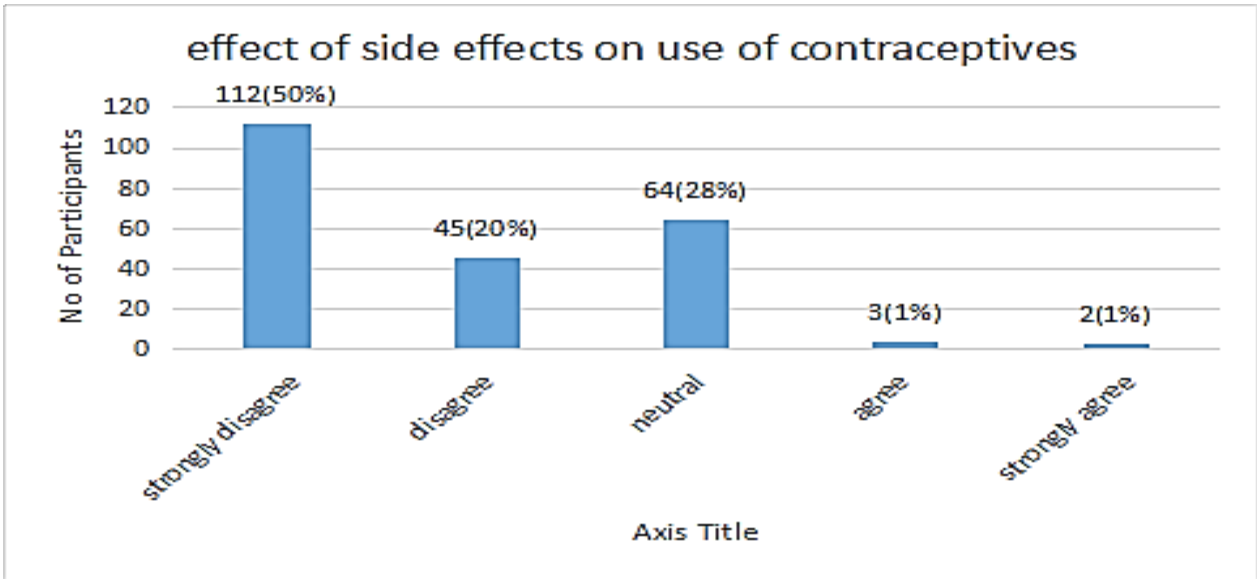
Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Partners influenced your decision to use contraceptives	71 (31%)	25 (11%)	20 (9%)	45 (20%)	65 (29%)
Peers influenced them to use hormonal contraceptives	68 (30%)	53 (23%)	55 (24%)	27 (12%)	23 (10%)
You use hormonal contraceptives to avoid unwanted pregnancies	0 (0%)	2 (1%)	5 (2%)	34 (15%)	185 (82%)
You use hormonal contraceptives because they have more benefits than side effects	1 (0.4%)	1 (0.4%)	2 (0.8%)	53 (23.5%)	169 (74.8%)
My status requires me to use a convenient and effective contraceptive to avoid infecting my partner	114 (50%)	25 (11%)	70 (31%)	9 (4.2%)	8 (3.8%)

Barriers To Use Of Hormonal Contraceptives

Effect of hormonal contraceptive side effects on their use

Figure 4 below shows that 112 (50%) participants had the opinion that despite the hormonal contraceptives having life threatening side effects they must use them. Two (1%) participants strongly agreed that due to the life threatening side effects of hormonal contraceptives they cannot use them despite their status. Sixty four (28%) participants had a neutral opinion.

Figure 4:
Influence of Hormonal Contraceptive Side Effects on Their Use as Specified by Study Participants



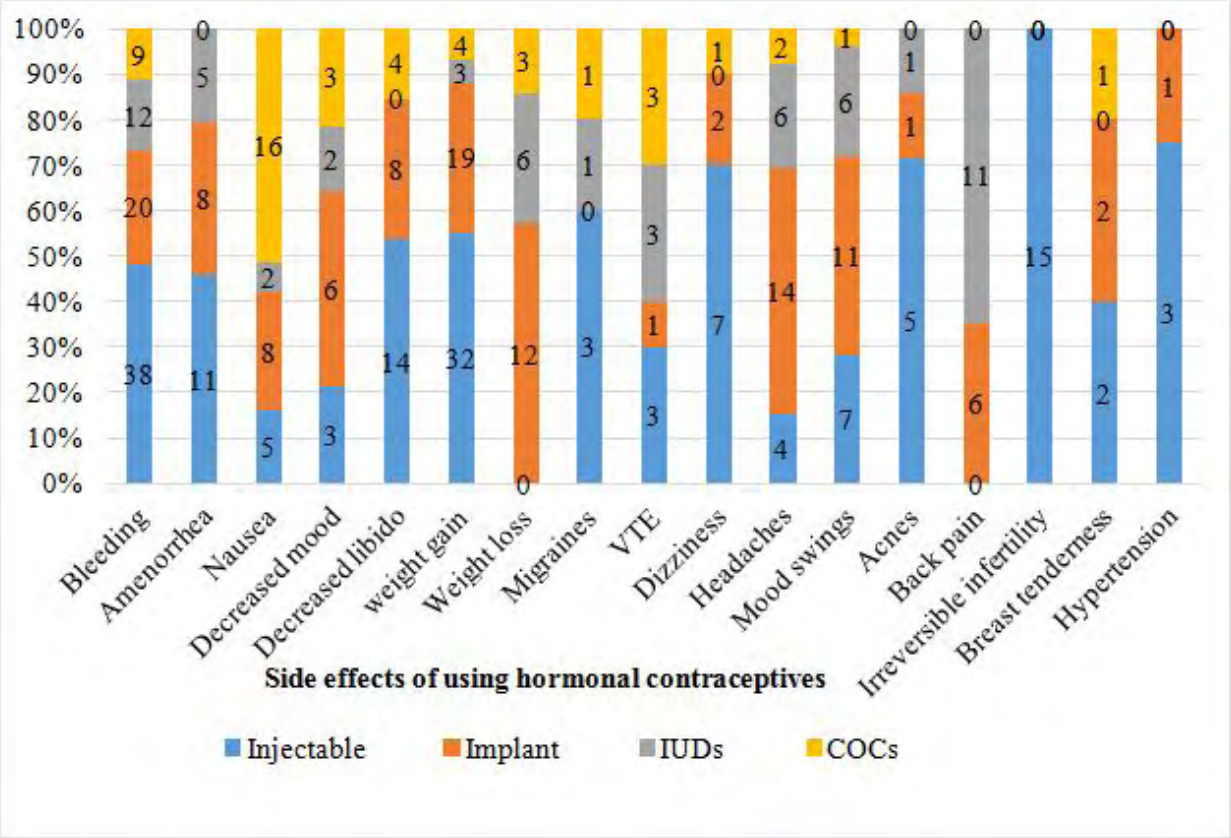
Side Effects Associated With Use of Specific Hormonal Contraceptives: Injectable, Implants, IUDs, Combined Oral Contraceptives

Figure 5 below reveals insights into the reported side effects associated with different types of hormonal contraceptives. Among the reported side effects, **bleeding** emerged as a common occurrence across all contraceptive methods, with Injectable users having the highest prevalence (45.23%), followed by IUDs (33.33%), COCs (28.13%), and Implant (27.03%). **Amenorrhea**, the absence of menstruation, was reported by Injectable users (13.09%), IUD users (13.89%), and Implant users (10.81%), while COC users did not report this side effect. **Nausea** was particularly prominent among COC users (50. Injectable users reported the lowest occurrence of nausea (5.9%). **Decreased libido**, another side effect, was most prevalent among Injectable users (16.67%), followed by COC users (12.5%) and Implant users (10.81%). **Weight-related side effects** varied among methods, with Injectable users reporting the highest prevalence of weight gain (38.01%) and Implant users reporting a notable occurrence of weight loss (16.21%). IUD users experienced weight gain at a lower frequency (25.68%). **Headaches** were notably reported by Implant users (18.92%), while Injectable users had a lower occurrence (4.76%). IUD users and COC users reported intermediate frequencies of headaches (16.67% and 6.25%, respectively). **Mood swings** were observed across all methods, with Implant users reporting the highest prevalence (14.86%), followed by Injectable users (8.33%) and IUD users (16.67%). COC users had the lowest reported occurrence (3.125%). Certain side effects, such as **migraines, VTE** (Venous Thromboembolism), and **hypertension**, were reported with lower frequencies across methods. Injectable and IUD users reported occurrences of VTE (3.57% and 8.33%, respectively), while Implant users reported only one case (1.35%). Notably, IUD users reported a significant occurrence of **back pain** (30.56%), whereas Injectable and Implant

users did not report any instances. **Irreversible infertility** was exclusively reported by Injectable users (17.86%), whereas Implant and IUD users reported no such cases. **Breast tenderness** and **dizziness** were generally reported by a minority of users across methods, with low percentages of occurrence.

Figure 5:

Side Effects Associated with Use of Specific Hormonal Contraceptives as Highlighted by Study Participants



Association Between Type of Contraceptives and Specific Side Effects Commonly Observed

Figure 6 below shows a chi-squared analysis examining association between contraceptive type and occurrence of specific side effects. **Injectable(Medroxyprogesterone);**there was statistically significant association between use of injectable/depo contraceptives and occurrence of bleeding *(P-value =0.036)* , nausea *(P-value =0.012)*, weight gain *(P-value =0.021)*, weight loss *(P-value =0.005)*, dizziness *(P-value =0.039)*, acne *(P-value =0.039)* and reversible infertility *(P-value =0.00)* as a side effect. **Implant;** there was statistically significant association between use of implant contraceptives and occurrence of weight loss *(P-value =0.014)*, mood swings *(P-value =0.047)* and reversible infertility *(P-value =0.003)* as a side effect. **IUD;** there was statistically significant association between use of IUD contraceptives and occurrence of decreased libido *(P-value =0.05)*, weight gain *(P-value =0.03)* and back pain *(P-value =0.00)* as a side effect. **COCs;** there was statistically significant association between use of COCs contraceptives and occurrence of nausea *(P-value =0.00)* as a side effect. **Mini Pill;** there was statistically significant association between use of mini pill contraceptives and occurrence of headaches *(P-value =0.012)* as a side effect.

Figure 6:

Chi-Squared Analysis Assessing Association Between Contraceptive Type and Common Side Effects as Pointed Out by Study Participants

Chi Square Analysis to Check for Association Between Type of Contraceptive Use and Side Effects Commonly Observed

	Injectable/Depo		Implant		Patch		IUD		Vaginal Ring		COCs		Mini Pill		Bilateral Tubal Ligation	
	X^2	P	X^2	P	X^2	P	X^2	P	X^2	P	X^2	P	X^2	P	X^2	P
Bleeding	4.407	.036	1.032	.310	-	-	.156	.693	-	-	.643	.422	1.657	.198	1.099	.294
Amenorrhea	2.328	.127	.019	.891	-	-	.013	.910	-	-	3.043	.081	.452	.501	.300	.584
Nausea	6.343	.012	.873	.350	-	-	2.854	0.91	-	-	40.677	.000	.507	.477	.336	562
Decreased Mood	.663	.416	.786	.375	-	-	.054	.816	-	-	.707	.400	.203	.653	.135	.714
Decreased Libido	.092	.761	2.635	.105	-	-	7.931	.005	-	-	.153	.696	.544	.461	.361	.548
Weight Gain	5.339	.021	1.929	.165	--	-	8.618	.003	-	-	1.178	.278	1.382	.240	.917	.338
Weight Loss	7.850	.005	5.978	.014	-	-	1.402	.236	-	-	.44	.834	1.626	.202	.242	.623
Migraines	2.010	.156	2.920	0.87	-	-	.000	.992	-	-	.039	.843	.084	.772	.56	.814
VTE	.334	.557	.708	.400	-	-	1.38	.240	-	-	2.267	.132	.142	.706	.094	.759
Dizziness	4.279	0.39	.708	.400	-	-	2.071	.150	-	-	.133	.715	.142	.706	.094	.759
Headaches	1.5	.221	1.5	.221	-	-	.037	.847	-	-	2.155	.142	6.261	.012	.361	.548
Mood Swings	1.059	.304	3.930	.047	-	-	1.402	.236	-	-	2.129	.144	.365	.546	.242	.623
Acnes	4.279	.039	2.353	.125	-	-	.092	.762	-	-	.543	.461	.142	.706	.094	.759
Back Pain	3.821	.051	.015	.902	-	-	21.613	.000	-	-	3.743	.053	2.054	.152	.209	.648
Irreversible Infertility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reversible Infertility	28.969	.000	8.714	.003	-	-	3.640	.056	-	-	2.971	.085	.250	.617	.166	.684
Breast Tenderness	.003	.957	.145	.704	-	-	1.012	.314	-	-	.159	.690	.069	.792	.046	.830
Hypertension	2.242	.134	.095	.758	-	-	.806	.369	-	-	.658	.417	.055	.814	.037	.848

df = 1

X^2 = Chi square value; P = p-value; significant level $\alpha = 0.05$

Effect of Religion, Cost and Availability, and Beliefs About Infertility on Use of Hormonal Contraceptives

Table 2 below shows 170 participants (75%) had the opinion that their religion does not deny them use of hormonal contraceptives. None of the participants stated that their religion denies them to use hormonal contraceptives. Eleven (5%) participants had a neutral opinion. One hundred and fifty eight (70%) participants strongly agreed that the cost and availability of hormonal contraceptives make it easy to use them. Nine (4%) participants strongly disagreed that cost and availability make it easy to use hormonal contraceptives. Eleven (5%) participants had a neutral opinion. One hundred and fifty seven(69%) participants strongly disagreed that beliefs about infertility caused by use of contraceptives hinder them from using hormonal contraceptives. Three(0.82%) participants agreed and one(0.18%) strongly agreed that beliefs about infertility hinders them from using hormonal contraceptives. Thirty one (14%) participants had a neutral opinion.

Table 2:

Attitudes Towards Effect of Religion, Cost and Availability, and Beliefs About Infertility on Use of Hormonal Contraceptives

Variable	Strongly disagree	disagree	Neutral	Agree	Strongly agree
Religion has an effect on use of hormonal contraceptive	170 (75%)	45(20%)	11 (5%)	0 (0)	0 (0%)
Cost and availability have an effect on use of contraceptives	9 (4%)	7 (3%)	11 (5%)	41(18%)	158 (70%)
Beliefs about infertility have an effect on use of hormonal contraceptives	157 (69%)	34(15%)	31(14%)	3(0.82%)	1 (0.18%)

Impact Of Support From Health Care Providers On Use Of Contraceptives

Table 3 below shows 167 (74%) participants strongly agreed that they were using contraceptives because of the information provided to them by health care providers. Fifty (22%) participants agreed that they used contraceptives because of the information on contraceptives provided to them by health care providers. Three (1.6%) participants strongly disagreed. Five participants (2%) had a neutral opinion. One hundred and forty nine (66%) participants strongly agreed that they received counselling on use of contraceptives in order to reduce the burden of HIV transmission to newborns. Forty eight (21%) participants agreed that they received counselling. One (0.44%) participant strongly disagreed that they received counselling. Twenty two (10%) participants had a neutral opinion.

Table 3:
Impact of Support from Health Care Providers On Use of Contraceptives as Pointed Out by Study Participants

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am on a given hormonal contraceptive because of the information provided to me by healthcare provides	3 (1.6%)	1(0.44%)	5 (2%)	50(22%)	167(74%)
I received counselling on use of contraceptives in order to reduce the burden of HIV transmission to newborns	1 (0.44%)	6(2.56%)	22(10%)	48(21%)	149(66%)

DISCUSSION

In spite of the revolutionary advancements in medical field, over 100 million women globally want to prevent unintended pregnancy but are not on contraceptives. this has been fueled by unavailability of services, limited choices, fear of social disapproval, opposition from partners, doubts about side effects, a lack of knowledge and health concerns. The acquisition of knowledge about hormonal contraceptives plays a pivotal role in influencing individual choices and practices related to family planning. Evidently, in this study all participants had knowledge about hormonal contraceptives. The findings of this study were consistent with other similar studies done to assess knowledge of hormonal contraceptives in Kitale County Referral hospital (Kiplagat, 2016) in Cameroon (Nkwabong, 2015) and also in Tanzania (Lwelamira, 2012). Notably, health care providers emerged as the most prominent source, with 67.2% of participants attributing their knowledge acquisition to interactions with these providers. Correspondingly, this underscores the critical role that health professionals play in disseminating accurate and reliable information to the public, emphasizing their position as trusted sources of medical advice. Furthermore, in terms of participants' perceptions and experiences related to the impact of support and information provided by health care providers on their contraceptive decisions and behaviors [table 3]; majority of participants (74%) strongly agreed that they were using contraceptives due to the information provided to them by health care providers. An additional 22% of participants agreed with this statement. This overwhelming agreement highlights the significant influence that healthcare providers have on individuals' contraceptive choices as reiterated by Kiplagat (2016). Furthermore, a substantial proportion of participants (66%) strongly agreed that they received counseling on the use of contraceptives in order to reduce the burden of HIV transmission to newborns. An additional 21% of participants agreed with this statement. This reflects on the commendable awareness of the interconnectedness between family planning and the prevention of HIV transmission.

Social media, as evidenced by the 14% of participants who reported acquiring knowledge through this platform, has become an increasingly

influential channel for health information dissemination. Moreover, the negligible contribution of print media (0.3%) to knowledge acquisition about hormonal contraceptives is indicative of shifting information consumption patterns in the digital age. This aligns with the contemporary trend of digital communication shaping health-related behaviors and decisions (Taj et al., 2019). The utilization of social media for disseminating contraceptive information can have far-reaching implications, potentially enabling broader access to accurate information while also necessitating measures to ensure the credibility and quality of information shared through these platforms (Wakefield et al., 2010). On the other hand, radio (4.2%), television (5.2%), and religious meetings (3.2%) each played a minor role in disseminating information. These traditional media outlets, although less influential compared to health care providers and social media, still present opportunities for targeted health education campaigns, especially in communities where these channels remain relevant (Yepes et al., 2016). These findings collectively highlight the dynamic landscape of health communication in the modern era. Health care providers continue to be a crucial source of information, necessitating their ongoing training and engagement in effective communication strategies. Simultaneously, the rise of social media as a source of knowledge emphasizes the importance of developing accurate, evidence-based content for online platforms (Kapoor et al., 2017). While traditional media outlets like radio and television remain relevant, their influence appears to be less pronounced in comparison to digital channels. Collaborative efforts should focus on leveraging both traditional and digital channels while maintaining a strong emphasis on accurate, evidence-based, and culturally sensitive information dissemination. Such an approach ensures that individuals have access to reliable knowledge about hormonal contraceptives from diverse sources, enabling them to make informed choices for their reproductive health and family planning.

Figure 2 of the study provides valuable insights into the participants' knowledge about specific methods of contraception, highlighting their awareness of a range of options available for family planning. Male condoms emerged as a universally known contraceptive method, with 100% of participants reporting awareness of their existence. This widespread awareness likely reflects the longstanding prominence of male condoms in sexual and reproductive health education and their availability as a widely accessible method for preventing unintended pregnancies and sexually transmitted infections (Centers for Disease Control and Prevention, 2020). Comparatively, 88.55% of participants had knowledge about female condoms which is encouraging, as these devices offer an additional tool for safe and protected sexual encounters, although their usage has historically been less common compared to male condoms. This shows that a significant portion of participants knew about female condoms which reflects upon the efforts of educational and awareness campaigns meant to introduce these alternative contraceptives to the public (Uchendu et al., 2019). Injectable contraceptives, particularly depo-provera, were known to a substantial majority of participants (80.53%). This reflects the popularity of injectable contraceptives due to their long-lasting nature and convenience as noted by Kungu et al. (2020). Similarly, the participants' awareness of other methods like implants (74.77%), pills (73.45%), and intrauterine devices (72.12%) indicates a well-informed group with knowledge about a diverse range of contraceptive options, including both hormonal and non-hormonal methods. It's noteworthy that awareness of permanent methods of contraception, such as vasectomy (9.29%) and bilateral tubal ligation (8.84%), was relatively low compared to other methods among the study participants. Additionally, the knowledge levels about patches (14.15%) and vaginal rings (5.75%) are relatively moderate and low, respectively. This could be attributed to the fact that these methods are relatively newer additions to the contraceptive repertoire and are not readily available thus lowering their awareness level among study participants (Al-Husban et al., 2022, Raine et al., 2009).

Figure 3 of the study delves into the intricate dynamics and influencers shaping participants'

decisions to use hormonal contraceptives. It is notable that a substantial portion of participants (61.06%) asserted that their decision to use hormonal contraceptives was autonomously driven. This highlights the significance of personal agency in reproductive health choices, underlining the importance of informed decision-making and the recognition of individual autonomy when it comes to family planning as noted by Prata et al. (2017). This is consistent with findings from a study conducted in Kitale County Referral Hospital by Kiplagat (2016). This suggests that participants are actively engaging in evaluating their reproductive health needs and making choices that align with their personal circumstances and goals. The influence of partners emerged as another noteworthy factor, with 30.09% of participants acknowledging that their decision was impacted by their partners. Further, the finding that 11.06% of participants made joint decisions with their partners signifies the collaborative nature of some reproductive health choices. This emphasizes the interdependence and collaborative nature of decisions related to family planning. The influence of partners could stem from shared goals, communication, and a desire to jointly manage reproductive health outcomes (Irani et al., 2014). The relatively lower percentage compared to individual agency implies that while partner input is significant, participants still hold a substantial role in shaping their contraceptive choices. Healthcare providers also play a pivotal role, as 21.68% of participants reported their influence on the decision to use hormonal contraceptives. This underscores the importance of the healthcare system in guiding individuals toward well-informed choices. The guidance of healthcare providers can empower individuals with accurate information, dispel myths, and address concerns, contributing to more confident and effective contraceptive use (Kiplagat, 2016). Interestingly, a small percentage (1.77%) of participants mentioned that their decision was influenced by relatives. While this influence might be less prevalent, it still suggests the role of broader social networks in shaping individual choices, particularly in cultural contexts where extended family opinions hold significance.

In terms of factors influencing participants' decision to use hormonal contraceptives, table 1 notes that 31% of participants strongly disagreed that partners influenced their choice to use contraceptives, suggesting a substantial subset of individuals who assert their personal autonomy in family planning. Conversely, 65 participants (29%) strongly agreed that their partners did impact their contraceptive use. This variability highlights the diversity of relationships and communication dynamics, with some individuals exercising independent decision-making while others prioritize shared choices with their partners (Osamor & Grady, 2018) reflecting on results presented in figure 3. The presence of participants who held neutral opinions (9%) also indicates the complexity of partner influence, with varying levels of awareness or uncertainty regarding this factor. Similarly, the role of peers emerges as another dynamic influencer, with 30% of participants strongly disagreeing that peers influenced their decision to use hormonal contraceptives. In contrast, 10% strongly agreed that peers did have an impact. This discrepancy might reflect the varying levels of susceptibility individuals have to peer influence, and it underscores the importance of understanding the sources of information and support that individuals rely on when making such personal decisions (Calhoun et al., 2021).

The study also sheds light on participants' motivations for using hormonal contraceptives. An overwhelming 82% strongly agreed that they used these methods to avoid unwanted pregnancies. This high percentage underscores the central role that contraception plays in family planning and reproductive health. The relatively low percentage of participants (1%) who disagreed with this statement might indicate a minority who may not view avoiding pregnancy as their primary motivation or who have other contraceptive preferences. Moreover, 74.77% strongly agreed that they use hormonal contraceptives due to their perceived benefits outweighing potential side effects. This finding speaks to the importance of risk-benefit assessment in contraceptive decision-making (National Research Council (US) Committee on

Population, 1984). The extremely low percentage (0.4%) of participants who strongly disagreed with this statement suggests a widespread consensus regarding the positive impact of hormonal contraceptives, although individual considerations of benefits and risks might still vary. Furthermore, while 50% strongly disagreed that they must use a convenient and effective contraceptive to avoid infecting their partners, it is interesting that a significant proportion (50%) holds this viewpoint. This finding implies that a considerable portion of participants recognize the role of contraceptives not just in preventing pregnancies but also in contributing to sexual health and infection prevention.

In terms of participants' perception and decisions concerning use of hormonal contraceptives, 50% of participants believed that they must use hormonal contraceptives despite the existence of life-threatening side effects suggests a compelling dynamic at play. This finding indicates a prevailing attitude among a significant portion of the study population that places a higher value on the benefits of hormonal contraceptives, such as pregnancy prevention, than on the potential risks associated with their use as noted by Ochako et al. (2015). This viewpoint suggests that individuals prioritize their reproductive health goals over concerns about severe side effects, underscoring the critical role that contraception plays in family planning. Conversely, the 1% of participants who strongly agreed that they cannot use hormonal contraceptives due to life-threatening side effects highlight a subset of individuals who perceive these risks as too significant to proceed with such methods. This extreme stance underscores the importance of recognizing and respecting individuals' informed choices when it comes to their own health and safety. These participants might have specific medical conditions or personal considerations that make them particularly risk-averse, emphasizing the need for tailored healthcare guidance and options for alternative contraceptive methods. About 2% of participants were neutral which may stem from a lack of clear information or a genuine ambivalence about the balance between the benefits and risks of hormonal contraceptives.

Evaluation of reported side effects associated with different types of hormonal contraceptives show that bleeding emerges as a common side effect across all hormonal contraceptive methods, with notable variations in prevalence. Injectable users exhibit the highest prevalence (45.23%), suggesting a potentially significant impact on their menstrual patterns (Odwe et al., 2020). This aligns with the nature of injectable contraceptives, which can influence menstrual bleeding as reported by similar studies (Ochako et al, 2015). IUD and COC users also report considerable occurrences of bleeding (33.33% and 28.13%, respectively), highlighting the need for patients and healthcare providers to discuss and manage this side effect effectively. Amenorrhea, the absence of menstruation, was reported by Injectable, IUD, and Implant users, suggesting diverse hormonal interactions. Notably, COC users did not report this side effect, which is expected given the consistent hormone levels provided by combination oral contraceptives. Nausea, prominent among COC users (50%), is a well-known side effect associated with hormonal contraceptives. Injectable users report the lowest occurrence (5.9%), aligning with the method's direct administration into the bloodstream, potentially reducing gastrointestinal effects. Weight-related side effects demonstrate variations among methods. Injectable users report higher rates of weight gain (38.01%), while Implant users experience a notable occurrence of weight loss (16.21%). This contrast suggests the importance of individual hormonal responses in shaping these effects. IUD users report intermediate weight gain (25.68%), potentially indicating that this side effect may result from hormonal or systemic factors rather than direct hormonal contraception.

Headaches are notably reported by Implant users (18.92%), perhaps due to the method's continuous release of hormones. Injectable and IUD users report intermediate frequencies of headaches (4.76% and 16.67%, respectively), reflecting potential hormonal triggers. COC users report a lower occurrence (6.25%). Mood swings emerge as a significant side effect across methods, with Implant users experiencing the

highest prevalence (14.86%). This aligns with the influence of continuous hormone release on emotional well-being (Mu & Kulkarni, 2022). COC users report the lowest occurrence (3.125%), possibly due to their consistent hormone levels. Reported occurrences of certain side effects, such as migraines, VTE, and hypertension, demonstrate variations among methods. Injectable and IUD users report VTE occurrences (3.57% and 8.33%, respectively), highlighting the importance of assessing thrombotic risk. IUD users also report a substantial occurrence of back pain (30.56%), potentially linked to the device's placement. Irreversible infertility is exclusively reported by Injectable users (17.86%), possibly reflecting misconceptions or unique perceptions about this method's long-term effects. Breast tenderness and dizziness are reported by a minority of users across methods, suggesting that while these side effects are less prevalent, they can still impact users' experiences.

Evidently, Chi-squared test of association as presented in figure 6 showed that there was statistically significant association between use of injectables and occurrence of bleeding (*P-value = 0.036)*, nausea *(P-value = 0.012)*, weight gain *(P-value = 0.021)*, weight loss *(P-value = 0.005)*, dizziness *(P-value = 0.039)*, acne *(P-value = 0.039)*, and reversible infertility *(P-value = 0.00)*. Implant contraceptive use was significantly linked with weight loss (P-value = 0.014), mood swings *(P-value = 0.047)*, and reversible infertility *(P-value = 0.003)*. further, IUD use was linked to decreased libido *(P-value = 0.05),* weight gain *(P-value = 0.03),* and back pain *(P-value = 0.00),* while use of combined oral contraceptives was associated with occurrence of nausea *(P-value = 0.00)*. Lastly, the mini pill was only linked with occurrence of headaches *(P-value = 0.012)* as a side effect. Therefore, the hierarchy of hormonal contraceptives in terms of decreasing frequency of associated side effects starts with use of injectables, hormonal implants, hormonal IUDs, COCs and least with use of mini pill.

Concerning participants' attitudes towards the influence of religion, cost and availability, as well as beliefs about infertility on the use of hormonal contraceptives, table 2 notes that majority of participants (75%) expressed the opinion that their religion does not deny them the use of hormonal contraceptives. This is despite the significant societal and cultural a factor, religion often plays in influencing individual's choices even in matters reproductive health (Krull et al., 2020). Notably, none of the participants reported that their religion outright denies them the use of hormonal contraceptives, indicating a potential alignment between religious values and contraceptive practices. Further, a significant proportion of participants (70%) strongly agreed that the cost and availability of hormonal contraceptives make it easy to use them underscoring the importance of affordable and accessible contraceptive options in promoting family planning and reproductive health (Prata, 2009). Conversely, a smaller subset (4%) strongly disagreed with this assertion, suggesting potential barriers in terms of financial constraints or limited access for certain individuals. The influence of beliefs about infertility, particularly those attributed to contraceptive use, is another intriguing aspect. Majority of participants (69%) strongly disagreed that beliefs about infertility caused by contraceptive use hinder them from using hormonal contraceptives. This suggests a prevailing awareness and understanding among participants that modern contraceptive methods do not necessarily lead to infertility, thereby debunking potential misconceptions that might discourage contraceptive utilization (Sedlander et al., 2022). However, it is worth noting that a minority of participants (0.18% strongly agreed and 0.82% agreed) expressed concerns about infertility linked to contraceptive use.

CONCLUSION

The study highlights that knowledge, attitudes, and barriers significantly influence hormonal contraceptive utilization among women living with retroviral disease and receiving antiretroviral therapy. Healthcare providers play a crucial role as trusted information sources, while personal autonomy, religious values, and affordability are key determinants in contraceptive decision-making. Despite reported side effects, most

participants valued the benefits of hormonal contraceptives, underscoring the importance of tailored counseling to address barriers and enhance utilization.

RECOMMENDATION

Healthcare providers should prioritize tailored counseling and education on hormonal contraceptive options, addressing specific barriers such as misconceptions, side effects, and affordability, to enhance informed decision-making and utilization among women living with retroviral disease on antiretroviral therapy.

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