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Pre-Exposure Prophylaxis Adherence Among HIV Sero-Discordant Couples:
Showcasing Homabay County

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Abstract
HIV sero-discordance is a condition in which one partner is HIV-positive while the other is HIV-negative. The seronegative partner is at great risk of infection. The majority of discordant couples are of reproductive age; hence, safe conception interventions is key. Pre-exposure prophylaxis (PrEP) is an HIV prevention strategy that is used to prevent infection of the seronegative partners. This strategy involves antiretroviral drugs that are used before a person gets exposed to the risk of infection with HIV. For complete protection against HIV transmission among the sero-discordant couples, daily adherence to oral intake of PrEP is required. However, adherence to the daily intake of Pre-exposure prophylaxis has been noted to be irregular among the sero-discordant couples hence, endangering the safety of the seronegative partner. The specific objectives were to assess the current adherence status to PrEP. Two coefficients of healthcare provider related barriers; provider's willingness PrEP (β = -0.098, t = -0.391, Sig. = 0.697), and whether education of clients (β = -0.120, t = -0.467, Sig. = 0.642) were not statistically significant, hence healthcare provider related barriers did not affect the adherence to PrEP.

Key Terms: Adherence, Couples, HIV, Pre-exposure, Prophylaxis, Sero-discordant

Introduction

According to CDC (2021), Human Immunodeficiency Virus (HIV), is transmitted through contact with body fluids like semen, blood, vaginal fluid, anal mucus and breast milk of someone with HIV. HIV is commonly spread during unprotected sexual intercourse, or by sharing injection needly during drug abuse. If not controlled, HIV can lead to acquired immunodeficiency syndrome (AIDS). HIV AND AIDS has continued to be a key public health concern since 1981 creating major negative impacts on both social and economic development in developing counties more so, the Sub-Saharan Africa (Mwakalapuka *et al.*, 2017). Great progress has been made in the fight against the HIV pandemic in low- and middle-income countries especially in the Sub-Saharan Africa (Sidibe et al, 2016), however, about two million people globally acquire HIV infection annually and in 2017, 24 million people including discordant couples were living with HIV and AIDS (WHO 2017). According to UNAIDS, 2016, following

the discovery of HIV about three decades ago, at least 60 million people were infected globally. HIV became the leading cause of death in some parts of the world (Gaolathe 2016).

According to a report by Gisslen et al., (2017), around 940 000 people globally succumbed of HIV-related illnesses in 2017 and almost 37 million people were living with HIV by the end of 2017 while 1.8 million of the people were newly infected with HIV including sero-discordant couples (Davila et al, 2018). According to WHO (2017), Africa was the most affected region globally, where approximately 25.7 million people were living with HIV in 2017. Recently, 68 percent of the new HIV infections was in Sub-Saharan Africa and almost 50 percent of all deaths worldwide took place in Southern Africa. In regions where HIV and AIDS epidemic was predominant. Most of the HIV infections occurred among heterosexual couples (David, 2015).

In Africa, the prevalence of Sero-discordant people was high (16%) (William et al.,2015), and among the Sero-discordant couples, there was a high rate of mortality associated to HIV infection ranging from 1.8 percent in South East Nigeria and 5.4 percent in Nigeria, (Idele et al., 2014, Borre et al., 2017). This phenomenon may be related to the lack of knowledge on sero-discordance towards the risk behavior in Sub-Saharan Africa. Approximately 30 percent of the married HIV positive couples, there is a negative spouse (sero-discordant) and those discordant couples are at 10 percent annual risk of acquiring HIV infection and a greater number of new HIV infections are occurring in stable relationships (Hiam et al., 2014).

A study done in the northern Vietnam showed 58% sero-discordance rate. Men had a higher rate at 71% of sero-discordance while women trailed behind at 18% sero-discordance (Van Tam *et al*., 2016). About 30% of positive couples are in HIV-discordant relationship and are at 10% annual risk of being infected with HIV infection (Hiam *et al*., 2014). A great number of new HIV infections take place in stable relationships.

An Ethiopian demographic health survey 2016 report of a study carried out by Abebayehu et al., (2016), indicates that even if the prevalence of HIV and AIDS decreased from 2011 to 2016, the burden of the disease was still high throughout Ethiopia. In Ethiopia, regional HIV prevalence is higher in Gambelia (4.8%), Addis Ababa (3.4%), Dire Dawa (2.5%), and Harari (2.4%) than other remaining regions in Ethiopia. The HIV Sero-negative partners in HIV sero-discordant relationship are at very high risk of contracting HIV through sexual intercourse transmission. Approximately, 60 percent of the new HIV infections occur in HIV Sero-discordant partners (Tadesse 2014).

Kenya had a HIV prevalence of 3.7% which is approximately 1.4 million of people living with HIV according to a report released by National Syndemic Disease Control Council (NDCC, 2022). According to this study, Homabay County had the highest prevalence at 15.2%. Pre-exposure prophylaxis is an HIV prevention strategy that is used to lower the infection rates of new infections of HIV among the seronegative people. This strategy involves antiretroviral drugs that are used before a person gets exposed to the risk of infection with HIV. This is to lower the risk of HIV and AIDS and continues to use the drug for the period of time they get exposed to the risk of infection (Mitchell *et al*., 2016). The NDCC 2022 report indicates a third of the HIV infected couples to be discordant.

According to Joseph *et al*., (2023), socio-demographic characteristics affects the level of adherence to PrEP among sero-discordant couples. These include age, education level, marital status, occupation and area of residence. Knowledge and health education on side effects of PrEP have great statistical importance to adherence of PrEP. The adherence to PrEP is greatly aided by highly and well-structured health education programs to the discordant couples (Joseph *et al.,* 2023).

There are several healthcare related barriers that affect the adherence to PrEP among the discordant couples. These include: lack of knowledge about the efficacy, worries on developing drug resistance and the guidelines on PrEP among the healthcare providers, disagreement on who is more qualified to prescribe PrEP among the PCPs and HIV specialists, personal biases affecting prescribers' ability and willingness to prescribe PrEP, (Pleuhs *et at*., 2020). It was therefore crucial to conduct thorough assessment of the adherence to PrEP as a safe conception package among sero-discordant couples with reproductive desires.

Problem Statement

According to a report released by National Syndemic Disease Control Council (NDCC, 2022), Kenya had a HIV prevalence of 3.7% which is approximately 1.4 million of people living with HIV. On the basis of Counties, Homabay had the highest HIV and AIDS prevalence of 15.2% which is way higher than the national prevalence. According to the NDCC 2022 report, an estimate of at least a third of the infected couples are discordant. Targeted HIV prevention strategies such as antiretroviral therapy for the seropositive partner and PrEP for the seronegative partner can be of great use in minimizing HIV infection among the discordant couples.

According to Haberer *et al*., (2022), PrEP is a highly effective HIV prevention strategy when taken daily during HIV exposure, unfortunately, adherence to its usage is very low and is on the decline, hence the high discordance prevalence in Kenya and subsequently Homabay County. If the PrEP adherence level is not timely assessed and addressed accordingly with a more drastic patient-friendly strategy, the seroconversion level may end up skyrocketing, hence, ending up with more HIV related casualties. Therefore, this study was seeking to fill the knowledge gap by assessing the adherence to pre-exposure prophylaxis as a safer conception package and identifying possible players responsible for the low adherence among HIV sero-discordant patients in Homabay County.

Purpose of the study

This study purposed to assess the adherence to pre-exposure prophylaxis as a safe conception intervention for the HIV sero-discordant partners seeking for treatment at Homabay County Referral Hospital.

The Specific Objectives

i. To assess the current adherence status to pre-exposure prophylaxis among the HIV sero-discordance couples in Homabay County Referral Hospital.
ii. To assess how socio-demographic characteristic among HIV sero-discordant couples affect their adherence to pre-exposure prophylaxis in Homabay County Referral Hospital.
iii. To assess the effect of the level of knowledge on pre-exposure prophylaxis adherence among the sero-discordant partners in Homabay County Referral Hospital.

Justification of the study

HIV sero-discordant couples experience grave challenges revolving around emotional, sexual, social and relationships. The key basis of fights includes acquisition of HIV, seroconversion and decisions on fertility. The main challenge is on decision on fertility. This is because the majority of the sero-discordant couples are of reproductive age, hence, having reproductive desires. Therefore, assessing the level of adherence to PrEP as a safe conception method among the sero-discordant is key in ensuring minimal or zero seroconversion during sexual intercourse.

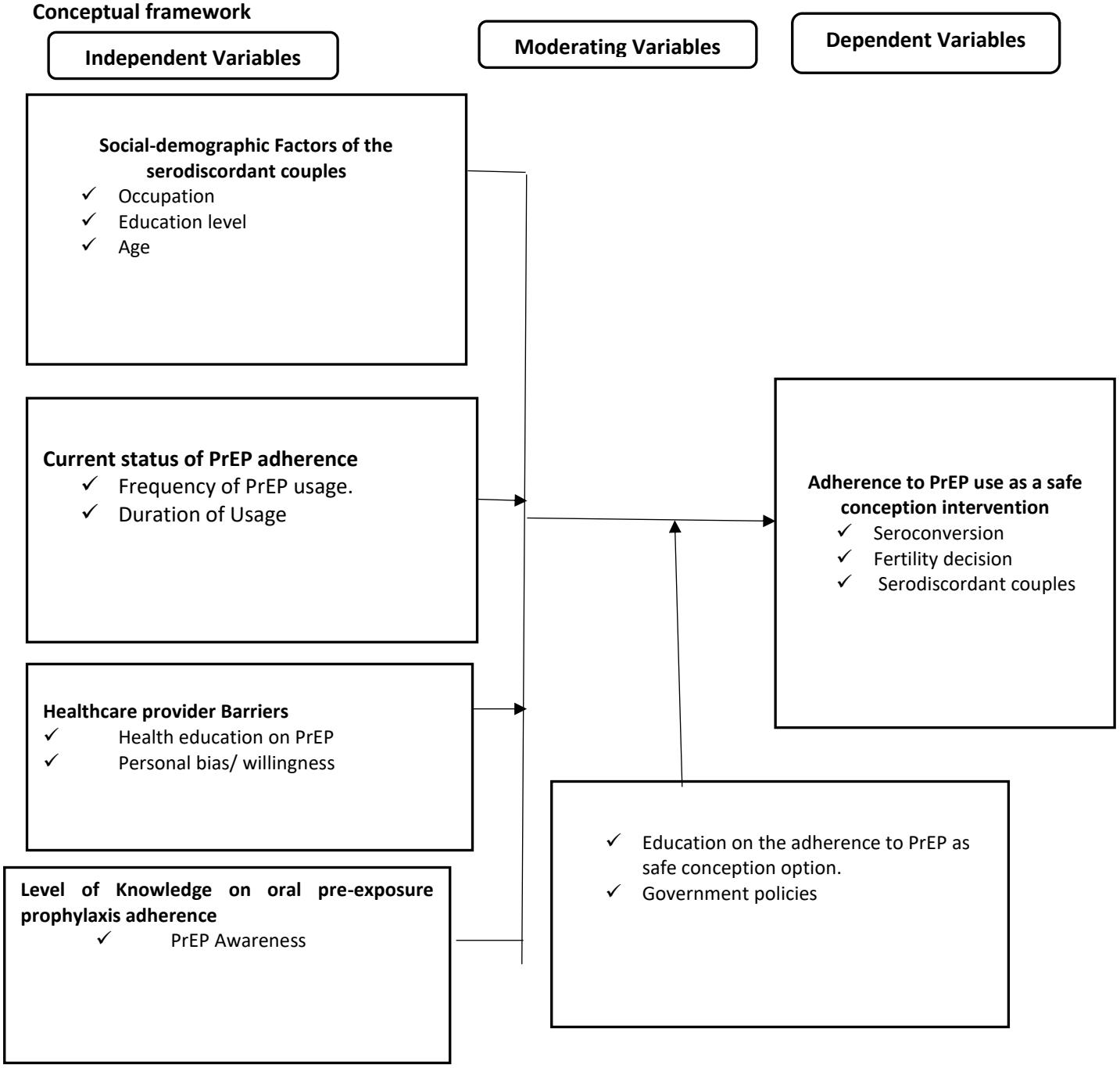
A healthy population is key in driving the economy of a country as it forms the manpower resource. Reduction of transmission of HIV and AIDS to the seronegative partner is key in building the labor resource of a country. Therefore, it is fundamental to ensure the sero-discordant couple adhere to the use of PrEP to protect the labor resource and subsequently the economy of a nation.

Literature Review

According to Haberer *et al*., (2022), PrEP is a highly effective HIV prevention strategy when taken daily during HIV exposure, unfortunately, adherence to its usage is very low and is on the decline, hence the high discordance prevalence in Kenya and subsequently Homabay County. A study done in the northern Vietnam showed 58% sero-discordance rate. Men had a higher rate at 71% of sero-discordance while women trailed behind at 18% sero-discordance (Van Tam *et al*., 2016). About 30% of positive couples are in HIV-discordant relationship and are at 10% annual risk of being infected with HIV infection (Hiam *et al*., 2014). A great number of new HIV infections take place in stable relationships. According to Kimanga et al., (2014), Kenyans aged 15-64 years old, 1 in 10 of couples or those cohabiting together are HIV-positive.

A study conducted in Kinshasha, in the Democratic Republic of Congo, shows 52.9% of female partners are affected by HIV. The greatly affected age bracket was between 36 and 45 years old. The majority of partners at 61.7% had secondary school education level, primary level at 41.7% and 23.5% at the university level. On occupation, the informal labor sector topped with 44.1% of partners, housewives at 11.7%, electronics technicians at 8.8%, and taxi drivers 5.8% (Inkale *et al*., 2023). In Africa, the prevalence of Sero-discordant people was high (16%) (William et al.,2015), and among the Sero-discordant couples, there was a high rate of mortality associated to HIV infection ranging from 1.8 percent in South East Nigeria and 5.4 percent in Nigeria, (Idele et al., 2014, Borre et al., 2017).

Conceptual framework



Source: Researcher 2024

Figure 1: Conceptual framework

Study design

This study was conducted using a descriptive cross-sectional sequential exploratory study design. Qualitative and quantitative data collection methods was employed in this study. This study design helped the researcher get a more comprehensive understanding of the research problem. Focus group discussions was used to collect qualitative data while closed-ended interviewer administered questionnaires was applied to collect quantitative data.

Study variables

This study had independent, dependent and moderating variables. The independent variables were grouped under four main categories; Status of sero-discordance, Healthcare provider Barriers, Level of Knowledge on oral pre-exposure prophylaxis adherence and Socio-demographic characteristics among the sero-discordant couples.

Location of the study

This study was conducted in Homabay County, which is one of the 47 counties in the republic of Kenya. According to the national simple random sampling in 2019, the total population of Homabay County was 1.132 million*.*

Research Findings, Analysis and Presentation

4.0 Introduction

This study sought to answer four research questions about adherence to PrEP among HIV sero-discordant couples in Homabay County Referral Hospital, Home Bay County; status of adherence, effect of socio-demographic factors, effect of level of knowledge, and provider related barriers to PrEP adherence. The study was conducted between the months of May, 2024 and July, 2024 at the comprehensive Care Center in Homabay County Referral Hospital, Homabay County. A total of 105 participants turned up for the quantitative data collection using electronic questionnaire through KOBO toolbox while 20 turned up for the qualitative data collection using Focus Group Discussion. Below are the presentation of the findings, interpretation, analysis and discussion of the findings.

4.1 Descriptive Statistics

	Age	Occupation	Level of Education	Are you aware of PrEP?	For how long have you used PrEP?	Do you use PrEP daily
Valid	105	105	105	105	105	105
Missing	0	0	0	0	0	0
Std. Deviation	1.161	0.713	0.815	0.098	0.502	0.233

Table 1: Descriptive Statistics

4.1.1 Level of Knowledge on oral pre-exposure prophylaxis adherence

Are you aware of PrEP				
	Frequency	Percentage	Valid percentage	Cumulative Percentage
No	1	1.0	1.0	1.0
Yes	104	99.0	99.0	100.0
Total	105	100.0	100.0	

Table 2*:* Are you aware of PrEP

The average awareness of PrEP among the HIV sero-discordant couples in Homabay County is 0.99 with a standard deviation of 0.098 as shown in the above Table 2. It indicates that nearly all the respondents were aware of pre-exposure prophylaxis. Table 1 also shows that on average, the sero-discordant couples in Homabay County surveyed had used pre-exposure prophylaxis for a duration of between 1 and 5 years. The mean rating for pre-exposure prophylaxis daily usage is 0.94 (SD = 0.233) suggesting most of the HIV sero-discordant couples in Homabay County were using pre-exposure prophylaxis daily. Table 1 shows that 99% of the HIV sero-discordant couples in Homabay County surveyed were aware of pre-exposure prophylaxis. Only one of the respondents was not aware of pre-exposure prophylaxis.

4.1.2 Current status of PrEP adherence

For how long have you used PrEP?				
	Frequency	Percentage	Valid percentage	Cumulative Percentage
Less than 1 year	51	48.6	48.6	48.6
Above 1 year	54	51.4	51.4	100.0
Total	105	100.0	100.0	

Table 3: Duration of Usage

Do you use PrEP daily?				
	Frequency	Percentage	Valid percentage	Cumulative Percentage
No	6	5.7	5.7	5.7

Yes	99	94.3	94.3	100.0
Total	105	100.0	100.0	

Table 4: Daily Usage of PrEP

Table 3 above shows that most (51.4%) of the HIV sero-discordant couples in Homabay County surveyed had used pre-exposure prophylaxis for between 1 and 10 years, while 48.6% had used it for less than one year. The duration of usage can be associated with increased knowledge of pre-exposure prophylaxis. Table 4 above indicates that 94.3% of the respondents used pre-exposure prophylaxis daily, with only 5.7% (6 respondents) not using pre-exposure prophylaxis daily. Those who did not use pre-exposure prophylaxis daily had valid reasons including spouse being away due to work, and pre-exposure prophylaxis' side effects, among other reasons.

4.2 Regression Analysis

Coefficients					
Unstandardized coefficient			Standardized coefficient		
Model	B	Std Error	Beta	t	Sig
Constant	1.011	.509	.007	.063	.050
Age	0.001	.023	.007	.063	.950
Occupation	-.011	.040	-.035	-.283	.778
Level of Education	0.017	.034	.058	.489	.626
Are you aware of PrEP?	-.030	.251	-.013	-.120	.905
For how long have you use PrEP?	-.040	.052	-.086	-.765	.446
Was the healthcare willing to prescribe PrEP to you?	-.098	.250	-.041	-.391	.697
Did the healthcare provider explain to you what PrEP is and how to use it?	-.120	.257	-.050	-.467	.642

Table 5: Regression Analysis

Multiple regression analysis was conducted to examine the relationship between adherence status to pre-exposure prophylaxis among the HIV sero-discordance couple and socio-demographic factors, level of knowledge, and healthcare provider related barriers.

4.2.1 Social-demographic Factors of the serodiscordant couples

The coefficients of age (β = 0.001, t = 0.063, Sig. = 0.950), occupation (β = -0.011, t = -0.283, Sig. = 0.778), and level of education (β = 0.017, t = 0.489, Sig. = 0.626) are not statistically significant. This indicates that socio-demographic factors age, level of education, and occupation have no significant effect on adherence status to pre-exposure prophylaxis among the HIV sero-discordance couples in Homabay County.

4.2.2 Level of Knowledge on oral pre-exposure prophylaxis adherence

The coefficient of pre-exposure prophylaxis awareness or knowledge (β = -0.030, t = -0.12, Sig. = 0.905) is not statistically significant. This shows that there is no significant association between PrEP awareness and adherence status to pre-exposure prophylaxis among the HIV sero-discordance couples in Homabay County. The result is attributed to the fact that 99% of the respondents were aware of pre-exposure prophylaxis and how to use it. Only one of the respondents indicated lack of awareness of pre-exposure prophylaxis.

4.2.3 Healthcare provider related Barriers

The above results also indicate that healthcare provider related barriers did not affect the adherence to Pre-Exposure Prophylaxis among HIV sero-discordant couples in Homabay County. The two coefficients of healthcare provider related barriers;

provider's willingness to prescribe PrEP (β = -0.098, t = -0.391, Sig. = 0.697), and whether the provider explained what PrEP is and how to use it (β = -0.120, t = -0.467, Sig. = 0.642) are not statistically significant.

4.3 Qualitative Data Analysis

Analysis of qualitative data collected during focus group discussions identifies the following key themes; awareness of PrEP, usage consistency, usage timing and frequency, and healthcare provider interaction.

4.3.1 Awareness of PrEP

All the 20 respondents who participated in focus group discussions are aware of PrEP. While most participants defined PrEP as a drug used for HIV prevention, some had varied definitions on those who should use PrEP. For instance, participant 2 indicated that PrEP is used by HIV negative partners to prevent them from infection, while others indicated that PrEP is used by discordant couples or those exposed to HIV. All the participants agreed that the rationale for taking PrEP is HIV prevention. All the participants also perceive PrEP as safe with some emphasis on consistent usage. This analysis is consistent with the quantitative data analysis which found that 99% of the respondents were aware of PrEP.

4.3.2 Frequency and Consistency of PrEP Usage

Most participants indicated that PrEP should be used every time one is exposed to HIV. However, there were some variations in the timing of usage with one participant indicating that PrEP should be used two weeks before sexual intercourse with a HIV positive partner. This is consistent with quantitative data analysis which showed that 94% of the respondents are using PrEP daily, with those who do not use PrEP daily providing valid reasons including spouse being away due to work, and pre-exposure prophylaxis' side effects, among other reasons.

4.3.3 Healthcare Provider Interactions

All participants indicated that healthcare providers were sufficiently aware of PrEP, its usage and dosage, as well as side effects. The healthcare providers explained these aspects to the respondents before use. Most participants indicated that healthcare providers were willing to prescribe PrEP, with a few incidences of bias where the provider believed the respondents were not serious or needed counselling. The analysis also shows easy access to PrEP. Most participants were not transferred between multiple attendants or providers when seeking PrEP.

4.4 Discussion of Results

This research study sought to answer four research questions about adherence to PrEP among HIV sero-discordant couples in Home Bay County; status of adherence, effect of socio-demographic factors, effect of level of knowledge, and provider related barriers to PrEP adherence. This study finds a high adherence to PrEP among the HIV sero-discordant couples in Homabay County. 94% of the respondents indicated that they use PrEP daily, while the 5.7% of the respondents who do not use PrEP daily cited valid reasons including their partners being away due to work. The high adherence of 94% is an attribute of the 99% awareness of the PrEP, its usage, dosage and importance. The awareness on PrEP created by the key stakeholders in Homabay County which has contributed to the 99% awareness and subsequently 94% adherence.

The healthcare providers have also contributed greatly to the high adherence. The healthcare providers passionately explaining the complete aspects of PrEP to the respondents before use was very fundamental in achieving the 94% adherence. By most participants indicating that healthcare providers were willing to prescribe PrEP, this greatly reduces stigma and encourages adherence of the clients. The study also shows easy access to PrEP which could also be key in ensuring adherence which is similar to the findings of a study by Corneli et al., (2014) where the availability of the drug showed high adherence among the discordant couples.

On the effect of socio-demographic factors on PrEP adherence, this study found no evidence of a significant association between adherence to PrEP and age, level of education, occupation, and gender. This outcome is not consistent with previous studies such as Inkale et al., (2023) who found that age has a significant effect on adherence to PrEP. According to Inkale et al., 2023, a study conducted in Kinshasha shows 52.9% of female partners were affected by HIV. The greatly affected age bracket was between 36 and 45 years old. The majority of partners at 61.7% had secondary school education level, primary level at 41.7% and 23.5% at the university level. On occupation, the informal labor sector topped with 44.1% of partners, housewives at 11.7%, electronics technicians at 8.8%, and taxi drivers 5.8%. The outcome of this study may be attributed to the sample used.

The study included only HIV discordant couples attending their monthly clinics at the Comprehensive Care Center in Homabay County Referral Hospital. Most of the respondents surveyed used PrEP daily hence a regression of socio-demographic factors shows no significant associations. The inclusion of couples who are not attending monthly clinics may show a different outcome on the effect of socio-demographic factors.

On the effect of knowledge on PrEP adherence, this study finds no effect of level of knowledge or awareness on PrEP adherence. The outcome is attributed to the fact that all the respondents were aware of PrEP. Quantitative data analysis showed that 99% of the participants were aware of PrEP. Qualitative analysis also showed high level of knowledge on PrEP including its definition, usage, and the rationale for usage, among other aspects. The 99% awareness led to the 94% adherence to PrEP. This awareness is attributed to the healthcare providers whom the study shows to be providing adequate information on the PrEP to the clients prior to initiation to the drug. This finding is in agreement with the finding of a study done in Europe among women at a greater risk of getting infected with HIV, 59% of the women participants showed that lack of information about PrEP had the highest influence on adherence to PrEP (Moseholm *et al*., 2021).

However, findings by Walters et al., 2018, do not conform to the findings of this study. According to Walter et al.,2018, the information about PrEP among heterosexual discordant partners remains very low, hence a good number of the sero-discordant couples are likely not able to seek for the PrEP even though adherence to PrEP is critical to its efficacy. Though, the findings of this study on PrEP awareness cannot explain the variations in PrEP adherence among the participants since 99% of the participants were aware. If the sample had included participants who do not attend monthly clinic at the Comprehensive Care Center, the level of knowledge could have been found to significantly affect PrEP adherence as in previous studies such as those that contained in Moseholm et al., (2021).

The study also found that healthcare provider related barriers did not affect the adherence to Pre-Exposure Prophylaxis among HIV sero-discordant couples in Homabay County. Qualitative data analysis shows that healthcare providers were well-informed on PrEP, its usage, dosage, and side effects, among other relevant aspects. Most participants indicated that healthcare providers were willing to prescribe PrEP. The study finds that there are no significant healthcare provider related barriers which is not consistent with the findings of other studies such as Clement *et al*., (2018) and Pleuhs *et al.,* (2020). According to the study done by Clement *et al*., (2018) in North Carolina, 75% of the family planning providers and 42% of the PCPs reported that were not comfortable prescribing the PrEP due to lack of knowledge. Pleuhs *et al.,* (2020) reports that out of the 28 articles that were included in their systematic review, 18 reported lack of the healthcare provider knowledge as a barrier in PrEP prescription.

Conclusion and recommendations

5.0 Introduction

In this section, the researcher summarizes the results of the study, draw conclusion that comes from the study results, recommend appropriate action to be taken by the stake holders in line with the finding and desired suggestion for further studies.

5.1 Summary of the result findings

5.1.1 The current status of adherence to pre-exposure prophylaxis among the HIV sero-discordance couples

This study finds a high adherence to PrEP among the HIV sero-discordant couples in Homa Bay County. 94% of the respondents indicated that they use PrEP daily, while the 5.7% of the respondents who do not use PrEP daily cited valid reasons including their partners being away due to work.

5.1.2 The socio-demographic characteristic affecting adherence to PrEP among HIV sero-discordant couples.

The coefficients of age (β = 0.001, t = 0.063, Sig. = 0.950), occupation (β = -0.011, t = -0.283, Sig. = 0.778), and level of education (β = 0.017, t = 0.489, Sig. = 0.626) are not statistically significant. This indicates that socio-demographic factors age, level of education, and occupation have no significant effect on adherence status to pre-exposure prophylaxis among the HIV sero-discordance couples in Homabay County.

5.1.3 Level of Knowledge on oral pre-exposure prophylaxis adherence

The coefficient of pre-exposure prophylaxis awareness or knowledge (β = -0.030, t = -0.12, Sig. = 0.905) is not statistically significant. This shows that there is no significant association between PrEP awareness and adherence status to pre-exposure prophylaxis among the HIV sero-discordance couples in Homabay County. The result is attributed to the fact that 99% of the

respondents were aware of pre-exposure prophylaxis and how to use it. Only one of the respondents indicated lack of awareness of pre-exposure prophylaxis.

5.1.4 Healthcare provider related barriers that affect the adherence to Pre-Exposure Prophylaxis among discordant partners. Healthcare provider related barriers did not affect the adherence to Pre-Exposure Prophylaxis among HIV sero-discordant couples in Homabay County. The two coefficients of healthcare provider related barriers; provider's willingness to prescribe PrEP (β = -0.098, t = -0.391, Sig. = 0.697), and whether the provider explained what PrEP is and how to use it (β = -0.120, t = -0.467, Sig. = 0.642) are not statistically significant.

5.2 Conclusions

Homa Bay County has a high adherence to PrEP among the HIV sero-discordant couples. The high level of adherence to PrEP among the sero-discordant couples indicates that the discordant couples use PrEP daily, while the a very few of the respondents who do not use PrEP daily cited valid reasons including their partners being away due to work. The high adherence to PrEP use is an attribute of the high awareness of the PrEP, its usage, dosage and importance.

This research study found no evidence of a significant association between adherence to PrEP and age, level of education, occupation, and gender. This is likely because most of the respondents surveyed used PrEP daily hence a regression of socio-demographic factors showing no significant associations. The inclusion of couples who are not attending monthly clinics may show a different outcome on the effect of socio-demographic factors.

The research study finds no effect of level of knowledge or awareness on PrEP adherence. The outcome is attributed to the fact that all the respondents were aware of PrEP. If the sample had included participants who do not attend monthly clinic at the Comprehensive Care Center, the level of knowledge could have been found to significantly affect PrEP adherence.

The research study found that healthcare provider related barriers did not affect the adherence to Pre-Exposure Prophylaxis among HIV sero-discordant couples in Homabay County. Healthcare providers were well-informed on PrEP, its usage, dosage, and side effects, among other relevant aspects. Most participants indicated that healthcare providers were willing to prescribe PrEP.

5.3 Recommendations

The high adherence level of PrEP among the discordant couples in Homabay County is attributed to the high awareness or knowledge on PrEP and availability of the drug. Therefore, it is the recommendation of this study that the national government and county authorities to formulate and implement government policies that recommends daily use of PrEP for both men and women who are at substantial risk of acquiring HIV, reduces stigmatization among the discordant couples, increase friendly counselling and health education programs, ensure efficient and ready availability of the PrEP across the country and expand the awareness campaign programs to other counties up to the lowest tier of the healthcare system. This will ensure adherence to PrEP is high across the country which in return will boost the fight against HIV and AIDS.

The high level of adherence to PrEP has equally been contributed by the individual discordant couple's daily adherence to PrEP. It is therefore the recommendation of this study that all the discordant couples in other counties to emulate the success of the implementation of the PrEP adherence in Homabay County and use PrEP daily to help win the fight towards zero seroconversion among the discordant couples.

The high level of adherence to PrEP among the discordant couples in Homabay County has also been greatly attributed to the efficient and coordinated efforts of other stakeholders like the healthcare providers. It is therefore the recommendation of this study to the other stakeholders to equally join hands with the governments, healthcare providers and other stakeholders to initiate programs that help in fighting stigmatization, biasness among other issues that may affect the level of adherence to PrEP among the discordant couples.

5.4 Recommendations for further studies

i. I suggest studies on this subject to be carried out with incorporation of a larger population and a larger sample size to ensure the findings greatly represent the discordant couple population.
ii. I suggest studies on this subject to be carried out with inclusion of couples who are not attending monthly clinics at the facility to have a wider view of the whole phenomenon.

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