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ANTI-RETROVIRAL DRUG AND CONDOM USE AMONG DISCORDANT COUPLES IN WESTERN KENYA

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Abstract
The purpose of this study is to investigate the use of Anti-Retroviral drugs and condom use among discordant couples in Western Kenya. HIV seropositive individuals in discordant partnerships remain a unique target group in the prevention of HIV transmission, as the HIV-negative partners are at a high risk of acquiring infection from their HIV-positive partners if they do not adhere to established measures in infection prevention and control. Specifically, this study aimed to determine the uptake of Anti-Retroviral Drugs (ARVs) and condoms among discordant couples in HIV/AIDS support groups. This study followed a descriptive cross-sectional design in which a total of 104 seropositive individuals in HIV discordant relationships were included. The study was conducted in Migori County, Kenya. Quantitative analysis was done using SPSS. From our findings, the proportion of male to female participants in the study was equal (52 [50%] each) 100 per cent of the participants were taking ARVs, and 81 per cent of couples used condoms. All spouses in polygamous families and 77 per cent of those in monogamous families used condoms. All workers in skilled employment used condoms compared to 75 per cent of unskilled workers. In conclusion, despite the high alert on the risk of contracting HIV/AIDS among serodiscordant couples, not all couples use condoms to protect their negative partners. This increases the risk of transmission of the disease within this high-risk group. We recommend that prevention measures should be geared towards counselling discordant couples to curtail the further spread of the disease to non-infected partners in HIV-discordant relationships.

Keywords: ARVs, cohabiting, condoms, HIV/AIDS, spouses.

1.0 INTRODUCTION

Despite the challenges faced in early treatment, adherence to ARVs and the use of condoms, not enough emphasis has been placed on factors related to ARVs and condom use among discordant couples (Attia et al., 2009; Liu et al., 2014). Discordant couples are a critical risk group since the HIV-negative partner is at high risk of infection. Therefore, it is imperative to investigate factors that affect the adoption of ARVs and condom use among these partners. This study thus aims to determine the use of ARVs and condoms among HIV seropositive individuals in discordant marriages in Western Kenya.

Among the estimated thirty-six million individuals worldwide currently living with HIV infection, approximately sixty-five per cent reside in sub-Saharan Africa (Joint United Nations Programme on HIV/AIDS, 2016). In Kenya, the national adult HIV prevalence rate was estimated at 4.9 per cent in 2017 (National AIDS Control Council, 2018). It is further estimated that 40–50 per cent of married or cohabitating HIV-seropositive persons in East Africa have an HIV-negative partner (Bunnell et al., 2006). Several new infections that contribute to high HIV prevalence in the region arise from this group. Reports from Kenya and Malawi show that up to 80 per cent of unprotected sexual acts by HIV individuals occur between them and their spouses or cohabiting partners (Anand et al., 2009). HIV transmission rates within serodiscordant couples are consequently high, with over ten to fifteen per cent of HIV-negative partners seroconverting each year (Allen et al., 2003; Dunkle et al., 2008).

The use of Anti-retroviral therapy (ART) in combination with condoms is highly effective in reducing the rates of transmission in this group (Liu et al., 2014; Wall et al., 2017; LeMessurier et al., 2018). The uptake of these preventive measures among discordant couples has not received the required attention in the African setting, majorly because HIV programs focus on prevention efforts among uninfected people (Yalew et al., 2012). In Kenya, the prevalence of HIV discordance is high, with half (50 per cent) of married or cohabitating HIV-infected persons having an HIV-negative spouse (Maina et al., 2014). HIV-negative partners within discordant relationships are Kenya's largest risk group in the acquisition of new infections (UNAIDs, UNICEF, and World Health Organization 2011). Reports on condom use among HIV-discordant partners are variable, with some studies indicating an increase in the use of condoms following Anti-retroviral therapy (ART) initiation. In contrast, others show the converse (Venkatesh et al., 2010). There is no consensus on the predictors of consistent condom use (Kaye et al., 2013). Evidence suggests that HIV-infected persons on ART may adopt safer sex practices to avoid HIV transmission to regular partners (Sarna et al., 2008; Kaye et al., 2013). However, the rate of unprotected sex among HIV-infected persons on ARVs remains considerably high, as shown in data from some African countries (Ragnarsson et al., 2011).

2.0 LITERATURE REVIEW

HIV discordance in couples has been received with mixed feelings among the couples and society as a whole. Discordant couples' uptake of ARVs and condoms may be influenced by demographic factors, including age, sex, type of marriage, number of children the couple have, their religion, education level, occupation and ethnicity (Maina et al., 2014). In a marriage where the man is the one who is HIV positive, it is easier to initiate ARVs and condom use, unlike in a situation where the

woman is the one positive. It is difficult to use condoms in polygamous marriages consistently. The issue of HIV discordancy is also coupled with a lot of myths and misconceptions (Wall et al., 2017).

Young couples and couples with no or few children resort to unprotected sex due to a desire for children (Beyeza-Kashesya et al., 2010). Couples with little knowledge of ARVs and condom use also may not take the issues of their benefits seriously. The take on religions pertaining to ARVs and condom use determines their faithfuls' take on the matter (Agha et al., 2006). Couples with low income have less understanding of the risks associated with the uptake of ARVs and condom use. Women's bargaining power on the use of condoms is suppressed by cultural beliefs that men are the head of the house and, therefore, the initiators of anything to do with family issues (Langen, 2005).

Stigma, denial and discrimination lead to engaging in unprotected sex among HIV discordant couples. This creates a high risk of transmission to negative partners (Attia et al., 2009; Wechsberg et al., 2010). Studies reveal low rates of consistent condom use among HIV-infected persons on ART (Liu et al., 2014; Sarna et al., 2008). Other studies indicate that although good proportions of HIV-infected persons on ART have a record of using condoms consistently, up to one-third continue to have unprotected sex despite knowing the positive HIV status of their partners (Rispel et al., 2011; Ragnarsson et al., 2011; Beyeza-Kashesya et al., 2010; Campbell et al., 2007).

HIV infections occur majorly among married or cohabiting couples (Kaiser et al., 2011; Dunkle et al., 2008). Discordant couples are a critical risk group since an HIV-negative partner is at a high risk of infection. Even though several studies have been undertaken on HIV-discordant couples, few studies have been conducted on ARVs and condom use among HIV-discordant couples. Early treatment and adherence to ARV reduce the rate of new infections (Dunkle et al., 2008). However, condom use is an essential additional measure to curtail the transmission of HIV among HIV-discordant couples. The study was conducted in Awendo, Rongo, and Uriri sub-county hospitals in Migori County, western Kenya.

3.0 METHODOLOGY

This descriptive cross-sectional study focused on quantitative data obtained from structured questionnaires administered to participants. The study population consisted of HIV seropositive individuals in discordant marriages drawn from HIV/AIDS support groups in the study area. One hundred and twenty (120) HIV seropositive individuals in discordant marriages were listed in the programs. After consenting to the study, one hundred and four (104) were interviewed, while the rest (16) declined. The study focused on the seropositive spouses of the discordant couples. The procedures performed in this study involving human participants were per the Great Lakes University Ethical Review Committee, Ref no: (GREC/005/243/2016). Five research assistants with tertiary-level education and basic knowledge of HIV/AIDS were selected from community mobilizers. They were trained on the data tools and ethical issues relating to the study. The data tool was pretested on a pilot group one week before the official collection to ensure quality and the pertinence of questions asked. The research assistants administered structured questionnaires to each seropositive partner who signed written consent. The data collected was then entered in an

excel sheet then imported into SPSS.SPSS (version 21, Chicago, IL) was used for data entry. All variables were coded into a numerical format, with values assigned to the labels. Data cleaning was done to ensure the accuracy of the data and avoid common errors in statistics. The information was analysed through descriptive statistics, frequencies, and cross-tabulations. The data was presented in a table.

4.0 FINDINGS AND DISCUSSION

All couples interviewed were using ARVs, and about eighty-one per cent (81.2 %) of HIV seropositive individuals in discordant marriages were using condoms during sexual intercourse. On further analysis, condom use varied with the individual characteristics of the participants. A higher proportion of HIV seropositive male partners in discordant marriages were using condoms during sexual intercourse as compared to their female counterparts (46/57[87 %] and 39/57[5%], respectively). As regards age, all couples with mean ages fifty and above were using condoms as opposed to seventy-two per cent (72.7%) of couples with mean ages 16-49 years. All couples from polygamous families were using condoms compared to seventy-six per cent (76.9%) in monogamous families [Table]. Of the participants using condoms, twenty (100%) participants were Catholic, twenty-six (100%) were members of the Anglican Church Kenya (ACK), twenty-six (66.7%) were Seventh Day Adventist (SDA) and seven (53.8%) from Maranatha. Also, all (100%) that had no level of education, all (100%) who attained secondary level, sixty-five (83.3%) who attained primary level and seven (53.8%) who attained college level were using condoms. All (100%) participants who were skilled workers were using condoms, whereas only seventy-seven (77.8%) farmers and seventy-five (75%) unskilled workers were using condoms [Table 1].

Table: Condom use by the Individual Characteristics among HIV Discordant Couples in Awendo Sub County, Migori County, Kenya

Characteristics		N	Condom use - n (%)
Sex	Male	52	46(87.5)
	Female	52	39(75.0)
Age group	16-49	72	52(72.7)
	50+	32	32(100)
Type of marriage	Monogamy	84	65(76.9)
	Polygamy	20	20(100)
Number of children	Less than 5 children	39	26(66.7)
	5 children and above	65	59(90)
Religion	Seventh Day Adventist	39	26(66.7)
	Catholic	20	20(100)
	Maranatha	13	7(53.8)
	Anglican Churches of Kenya	26	26(100)
	Others	6	6(100)
Education	None	6	6(100)
	Primary	78	65(83.3)
	Secondary	6	6(100)
	College	13	7(53.8)
Occupation	Farmers	58	45(77.8)
	Unskilled	26	20(75.0)
	Skilled	20	20(100)
Ethnicity	Luo	98	78(80.0)
	Luhyas	6	6(100)

N - Total number of persons in the group; n - number of persons using condoms

Discussion

This study included HIV-discordant couples who were already attending care services in HIV/AIDS support groups at Rongo, Awendo and Uriri Sub County Hospitals in western Kenya. The high level of adherence to ARVs discovered in this study may indicate the efficacy of these programs in ensuring compliance. In previous studies, stigma targeted at individuals taking ARVs has adversely affected mental health, caused depression and interfered with the uptake of the drugs and adherence to the regimen (Attia et al., 2009; Wechsberg et al., 2010). ARVs require strict- adherence for effectiveness, which is the strongest determinant of patient survival (Luchters et al., 2008).

Considering the uptake of condom use amongst discordant couples, more HIV seropositive males in discordant marriages used condoms compared to their female counterparts. This may be due to differences in partner influence over the use of condoms between males and females (Blanc & Wolff, 2001). Studies in conservative settings reveal that men have a more significant impact on

initiating the use of condoms in sexual relations compared to women counterparts (Langen, 2005; Younge et al., 2008; Wagner et al., 2010). These observations portray a power imbalance in women's ability to negotiate sex.

According to our study, the age of participants shows a link to condom use. The study concurs with other studies that realized couples of reproductive ages are less likely to use condoms due to their desire for children (Adih & Alexander, 1999). The majority of HIV seropositive individuals in HIV-discordant marriages with five children and above were using condoms, unlike their counterparts with less than five children. Those with five children may use condoms both for protection and as a family planning method (Kaiser et al., 2011). However, the desire for children may lead to unprotected sex among discordant couples (Campbell et al., 2007; Beyeza-Kashesya et al., 2010; Rispel et al., 2011).

Polygamy is a common practice in African society (Sarna et al., 2008). In this study, all HIV seropositive individuals in polygamous marriages were using condoms. This may be either due to fear of infecting other sexual partners or pressure from their HIV-negative partners (Hunter, 2005). Polygamy increases the risk of HIV spread since it involves several sexual partners in marriage; therefore, it requires greater attention.

Different religions have varied opinions on condom use. The uptake of condoms was significant among Catholics in the study population as compared to Seventh Day Adventist, Maranatha, and other denominations. The church strategically promotes behavioural change (Campbell et al., 2007). Differences should, however, be noted in the teachings and standpoints of various churches, which may influence gender disparities and the ability to combat HIV/AIDS (Agadjanian, 2005). Religious group affiliation may also affect the use of condoms during sex, with studies showing lower initiation of sex and less use of condoms due to deprecation of condom use in conservative denominations (Agha et al., 2006).

This study reveals that condom use varies with education level. All couples who achieved secondary education and those with no education used condoms compared to sixty-five per cent of those who had undergone primary education as the highest qualification. Education is a crucial determinant of condom use, which has been linked to improved response to condom promotion (Wagner et al., 2010; Lurie et al., 2008; Lagarde et al., 2001). The observations of fifty-three per cent of condom use in individuals who had attained college education may be due to their small number among our study participants. In terms of occupation, all skilled workers were using condoms compared to seventy-seven per cent of unskilled workers. Experienced workers are more informed and, therefore, more likely to use condoms (Chamratrithirong & Kaiser, 2012). Luo was the ethnic majority of the surveyed population. Only twenty per cent (20%) of Luo participants were not using condoms, while all Luhyas surveyed were using condoms. Different ethnic groups and their beliefs influence condom use (Adetunji & Meekers, 2001). Beliefs such as "condoms are used by commercial sex workers" or "condoms are used only by people with multiple partners" limit acceptability.

5.0 CONCLUSION AND RECOMMENDATIONS

Conclusion: Despite the potential risk of contracting HIV/AIDS among HIV discordant couples, not all are using condoms. This exposes HIV-negative spouses to contracting the virus. The focus of HIV prevention should shift to discordant couples to reduce the further spread of the virus to non-infected partners.

Recommendations: We recommend that efforts should be made to improve counselling for discordant couples visiting HIV clinics to encourage them to use condoms to protect their HIV-negative partners. Future research may employ qualitative methods to get more insight into the factors barring the use of condoms among the HIV discordant couples.

6.0 REFERENCES

1. Adetunji, J., & Meekers, D. (2001). Consistency in condom use in the context of HIV/AIDS in Zimbabwe. *Journal of Biosocial Science, 33*(1), 121–138. https://doi.org/10.1017/S0021932001001213
2. Adih, W. K., & Alexander, C. S. (1999). Determinants of condom use to prevent HIV infection among youth in Ghana. *Journal of Adolescent Health, 24*(1), 63–72. https://doi.org/10.1016/S1054-139X(98)00062-7
3. Agadjanian, V. (2005). Gender, religious involvement, and HIV/AIDS prevention in Mozambique. *Social Science & Medicine, 61*(7), 1529–1539. https://doi.org/10.1016/j.socscimed.2005.03.012
4. Agha, S., Hutchinson, P., & Kusanthan, T. (2006). The effects of religious affiliation on sexual initiation and condom use in Zambia. *Journal of Adolescent Health, 38*(5), 550–555. https://doi.org/10.1016/j.jadohealth.2005.04.012
5. Allen, S., Meinzen-Derr, J., Kautzman, M., Zulu, I., Trask, S., Fideli, U., Musonda, R., Kasolo, F., Gao, F., & Haworth, A. (2003). *AIDS, 17*(5), 733–740. https://doi.org/10.1097/00002030-200303280-00012
6. Anand, A., Shiraishi, R. W., Bunnell, R. E., Jacobs, K., Solehdin, N., Abdul-Quader, A. S., Marum, L. H., Muttunga, J. N., Kamoto, K., Aberle-Grasse, J. M., & Diaz, T. (2009). Knowledge of HIV status, sexual risk behaviours and contraceptive needs among people living with HIV in Kenya and Malawi. *AIDS, 23*(12), 1565–1573. https://doi.org/10.1097/QAD.0b013e32832cb10c
7. Attia, S., Egger, M., Müller, M., Zwahlen, M., & Low, N. (2009). Sexual transmission of HIV according to viral load and antiretroviral therapy: Systematic review and meta-analysis. *AIDS, 23*(11), 1397–1404. https://doi.org/10.1097/QAD.0b013e32832b7dca
8. Beyeza-Kashesya, J., Ekström, A. M., Kaharuza, F., Mirembe, F., Neema, S., & Kulane, A. (2010). My partner wants a child: A cross-sectional study of the determinants of the desire for children among mutually disclosed serodiscordant couples receiving care in Uganda. *BMC Public Health, 10*(1), 247. https://doi.org/10.1186/1471-2458-10-247
9. Blanc, A. K., & Wolff, B. (2001). Gender and decision-making over condom use in two districts in Uganda. *African Journal of Reproductive Health*, 15–28. https://doi.org/10.2307/3583320
10. Bunnell, R., Mermin, J., & De Cock, K. M. (2006). HIV prevention for a threatened continent: Implementing positive prevention in Africa. *JAMA, 296*(7), 855–858. https://doi.org/10.1001/jama.296.7.855

11. Campbell, M. K., Hudson, M. A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health, 28*, 213–234. https://doi.org/10.1146/annurev.publhealth.28.021406.144016

12. Chamratrithirong, A., & Kaiser, P. (2012). The dynamics of condom use with regular and casual partners: Analysis of the 2006 National Sexual Behavior Survey of Thailand. *PLoS ONE, 7*(7), e42009. https://doi.org/10.1371/journal.pone.0042009

13. Dunkle, K. L., Stephenson, R., Karita, E., Chomba, E., Kayitenkore, K., Vwalika, C., Greenberg, L., & Allen, S. (2008). New heterosexually transmitted HIV infections in married or cohabiting couples in urban Zambia and Rwanda. *The Lancet, 371*(9631), 2183–2191. https://doi.org/10.1016/S0140-6736(08)60953-8

14. Hunter, M. (2005). Cultural politics and masculinities: Multiple partners in historical perspective in KwaZulu-Natal. *Culture, Health & Sexuality, 7*(3), 209–223. https://doi.org/10.1080/13691050412331293458

15. Joint United Nations Programme on HIV/AIDS. (2016). *Global AIDS update 2016*. https://www.unaids.org/en/resources/documents/2016/Global-AIDS-update-2016

16. Kaiser, R., Bunnell, R., Hightower, A., Kim, A. A., Cherutich, P., Mwangi, M., Oluoch, T., Dadabhai, S., Mureithi, P., Mugo, N., & Mermin, J. (2011). Factors associated with HIV infection in married or cohabitating couples in Kenya. *PLoS ONE, 6*(3).

17. Kaye, D. K., Kakaire, O., Osinde, M. O., Lule, J. C., & Kakande, N. (2013). The impact of highly active antiretroviral therapy on high-risk behaviour of HIV-infected patients in sub-Saharan Africa. *Journal of Infection in Developing Countries, 7*(6), 436–447. https://doi.org/10.3855/jidc.2644

18. Lagarde, E., Caraël, M., Glynn, J. R., Kanhonou, L., Abega, S. C., Kahindo, M., Musonda, R., Auvert, B., Buvé, A., & Study Group on the Heterogeneity of HIV Epidemics in African Cities. (2001). Educational level is associated with condom use within non-spousal partnerships in four cities of sub-Saharan Africa. *AIDS, 15*(11), 1399–1408.

19. Langen, T. T. (2005). Gender power imbalance on women's capacity to negotiate self-protection against HIV/AIDS in Botswana and South Africa. *African Health Sciences, 5*(3), 188–197.

20. LeMessurier, J., Traversy, G., Varsaneux, O., Weekes, M., Avey, M. T., Niragira, O., Gervais, R., Guyatt, G., & Rodin, R. (2018). Risk of sexual transmission of HIV with suppressed viral load and condom use: A systematic review. *CMAJ, 190*(46), E1350–E1360. https://doi.org/10.1503/cmaj.180311

21. Liu, H., Su, Y., Zhu, L., Xing, J., Wu, J., & Wang, N. (2014). Effectiveness of ART and condom use for prevention of sexual HIV transmission in serodiscordant couples. *PLoS ONE, 9*(11). https://doi.org/10.1371/journal.pone.0111175

22. Luchters, S., Sarna, A., Geibel, S., Chersich, M. F., Munyao, P., Kaai, S., Mandaliya, K. N., Shikely, K. S., Rutenberg, N., & Temmerman, M. (2008). Safer sexual behaviours after 12 months of antiretroviral treatment in Mombasa, Kenya. *AIDS Patient Care and STDs, 22*(7), 587–594. https://doi.org/10.1089/apc.2007.0247

23. Lurie, M., Pronyk, P., De Moor, E., Heyer, A., De Bruyn, G., Struthers, H., McIntyre, J., Gray, G., Marinda, E., Klipstein-Grobusch, K., & Martinson, N. (2008). Sexual behaviour and reproductive health among HIV-infected patients in South Africa. *Journal of Acquired Immune Deficiency Syndromes, 47*(4). https://doi.org/10.1097/QAI.0b013e3181648de8

24. Maina, W. K., Kim, A. A., Rutherford, G. W., Harper, M., K'Oyugi, B. O., Sharif, S., Kichamu, G., Muraguri, N. M., Akhwale, W., & De Cock, K. M. (2014). Kenya AIDS Indicator Surveys 2007 and 2012. *Journal of Acquired Immune Deficiency Syndromes, 66*(Suppl 1), S130. https://doi.org/10.1097/QAI.0000000000000123

25. National AIDS Control Council. (2018). *Kenya HIV estimates report 2018*. https://nacc.or.ke/wp-content/uploads/2018/11/HIV-estimates-report-Kenya-20182.pdf

26. Ragnarsson, A., Ekström, A. M., Carter, J., Ilako, F., Lukhwaro, A., Marrone, G., & Thorson, A. (2011). Sexual risk-taking among patients on ART in Kenya. *Journal of the International AIDS Society, 14*(1), 20. https://doi.org/10.1186/1758-2652-14-20

27. Rispel, L. C., Metcalf, C. A., Moody, K., Cloete, A., & Caswell, G. (2011). Sexual relations and childbearing decisions of HIV-discordant couples. *Reproductive Health Matters, 19*(37), 184–193. https://doi.org/10.1016/S0968-8080(11)37552-0

28. Sarna, A., Luchters, S. M. F., Geibel, S., Kaai, S., Munyao, P., Shikely, K. S., Mandaliya, K., Van Dam, J., & Temmerman, M. (2008). Sexual risk behaviour and HAART in Kenya. *International Journal of STD & AIDS, 19*(2), 85–89. https://doi.org/10.1258/ijsa.2007.007097

29. UNAIDS, UNICEF, & World Health Organization. (2011). *Global HIV/AIDS response: Progress report 2011*. https://www.who.int/hiv/pub/progress_report2011/en/

30. Venkatesh, K. K., De Bruyn, G., Lurie, M. N., Mohapi, L., Pronyk, P., Moshabela, M., Marinda, E., Gray, G. E., Triche, E. W., & Martinson, N. A. (2010). Decreased sexual risk behaviour in the era of HAART. *AIDS, 24*(17), 2687. https://doi.org/10.1097/QAD.0b013e32833e78d4

31. Wagner, G. J., Holloway, I., Ghosh-Dastidar, B., Ryan, G., Kityo, C., & Mugyenyi, P. (2010). Factors associated with condom use among HIV clients in Uganda. *AIDS and Behavior, 14*(5), 1055–1065. https://doi.org/10.1007/s10461-010-9673-4

32. Wall, K. M., Kilembe, W., Vwalika, B., Haddad, L., Khu, N. H., Brill, I., Onwubiko, U., Chomba, E., Tichacek, A., & Allen, S. (2017). Optimizing prevention of HIV and unplanned pregnancy in discordant couples. *Journal of Women's Health, 26*(8), 900–910. https://doi.org/10.1089/jwh.2016.6169

33. Wechsberg, W. M., Luseno, W. K., Kline, T. L., Browne, F. A., & Zule, W. A. (2010). HIV intervention on condom use among at-risk women in South Africa. *Journal of Prevention & Intervention in the Community, 38*(2), 132–146. https://doi.org/10.1080/10852351003640799

34. Yalew, E., Zegeye, D. T., & Meseret, S. (2012). Patterns of condom use among HIV-positive clients in Ethiopia. *BMC Public Health, 12*(1), 308. https://doi.org/10.1186/1471-2458-12-308

35. Younge, S. N., Salazar, L. F., Crosby, R. F., DiClemente, R. J., Wingood, G. M., & Rose, E. (2008). Condom use at last sex as a proxy measure. *Adolescence, 43*(172), 927.