A Study on the Factors that Predisposes Couples to new HIV Infection: A Case-study of Mary Immaculate Voluntary Counseling and Testing (VCT) Centre, Nairobi-Kenya

V. O. Okech (Victor Otieno Okech)[1], V. N. Wanjala (Victor Namulanda Wanjala)[2,3]

Original Article

[1] Comenius University in Bratislava, Faculty of Education, Department of Social Work, Slovak Republic.
[2] St. Elizabeth University College of Health and Social Sciences, Malnutrition Programme, Nairobi, Kenya.
[3] Mary Immaculate Voluntary Counselling and Testing Centre, Nairobi, Kenya.

E-mail address:

okech1@uniba.sk

Reprint address:

Victor Otieno Okech
Comenius University in Bratislava
Faculty of Education
Department of Social Work
Soltesovej 4
813 34 Bratislava
Slovakia

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Abstract:

Minimizing the spread of Human Immunodeficiency Virus (HIV) is one of the primary goals of any public health system. Couple testing is one of the strategies that is widely used in achieving this goal. In our study we sought to determine factors that predispose couples to acquiring HIV. Secondly, we also wanted to quantify the amount of risk of HIV infections couples were willing to tolerate when initiating new sexual relationships.

This study was done at the Mary Immaculate VCT Center Nairobi, from 2012 to 2018. A total of 360 couples was recruited into the study using systematic random sampling technique. A couple comprised of two persons of opposite gender who came for VCT services. In this study we observed that only 45.3% of the respondents engaged in sexual affairs within marriage compared 54.73% who did not. We also observed that the mean age difference within couples was 2.4 years and those who had an age difference of 3-5 years were more likely to engage in pre-marital sex. In addition, we also found that that 86.1% of the couples had engaged in sexual affairs without knowing the HIV status of their partner(s).

We conclude that most couples were engaging in premarital and extramarital sex than in marital sex. Sex outside marriage is a risk factor that contributes to acquisition and spread of HIV. An average of 2.4 years was the age difference preferred by most study couples. Age difference is a factor that facilitates transmission of HIV from one generation to another. We also concluded that most couples in this study preferred having sex first before knowing their HIV status. This is a risky practice that facilitates new acquisition of HIV infection.

Introduction

Vertical and parenteral transmissions are the two modes through which individuals acquire HIV. The former refers transmission of HIV virus from mother to child during pregnancy and labor while the latter refers to transmission that involves contact with HIV contaminated body fluids such as blood, semen, vaginal fluids and human breastmilk (Horvathova, *et al.,* 2011, Shahum, A et al. 2017). HIV in these body fluids can be transmitted to another person through body cuts/pricks with sharp objects that are contaminated, sexual contact with infected individuals, and blood transfusion. Transmission of HIV through transfusion is nowadays very rare due to stringent blood screening procedures. Parenteral mode of transmission accountants for a large proportion of new HIV cases especially among Female Sex Workers (FSW); Men who have Sex with Men (MSM); People Who Inject Drugs (PWID); Individuals with casual partners and Monogamous partnership (Zara, Sharmistha, Vesga, & Marie-Claude, 2014) .

There is a worrying trend being reported by most public health surveillance tools in regions where HIV is endemic. In these regions, cases of people who have been newly infected with HIV continue to be reported on a yearly basis. For instance, according to the Kenya HIV Estimates Report released in

2018, the national HIV prevalence rate was estimated at 4.9% with at least 52,800 people having been newly infected in the year 2017. Out of this figure, 44,800 were adult older than 15 years while 8,000 were children below 14 years (Ministry of Health, 2018). Based on prevalence rates of HIV, we were more interested in understanding factors that make people to be newly infected with HIV. Secondly, we also wanted to quantify the amount of risk of HIV infections couples were willing to tolerate when initiating new sexual relationships.

2. Methods

2.1 Study Population and Procedure

This research was carried out at the Mary Immaculate VCT Center, in Nairobi, Kenya. Respondents to this research were couples of opposite genders who had voluntarily sought VCT services in this center. They were recruited voluntarily into this study after giving their consent. A systematic random sampling technique was used in enlisting them into this study. This involved picking every 5th couple who had been served in the VCT. The research interview was only done after they had received their VCT services and were on their way home. This study was done for a period of 6 years, between 2012-2018. Within this period a total of 360 couples were enlisted into the study. A couple comprised adults of opposite gender.

2.2 Research Design and Data Collection

This research employed a case-study design, where only couples of opposite genders who had voluntarily sought VCT services were enrolled into the study. Couples who were below the age of 18 years were also excluded from the study. A structured questionnaire was used in collecting data from the respondents. Research assistants were also trained before being allowed to collect data.

2.3 Statistical Analysis

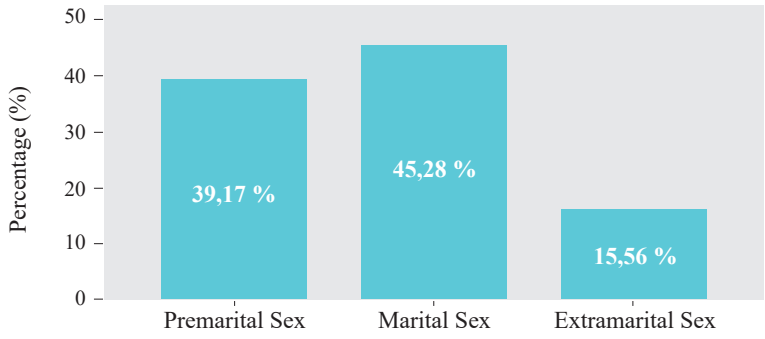
This study applied chi square test in conducting inferential statistics while descriptive statistics were also analyzed using mean and tabulation of frequency. The results of the study were presented in form of tables and figures. A two-sided p value of < 0.05 was set as the threshold for statistical significance.

3. Results

3.1 Distribution of Couples According to their Sexual Behavior

Majority of the couples observed (45.28%) in the study were engaging in marital sex, 39.17% of the couples were engaging in premarital sex while 15.56% were engaging in extramarital sex.

Fig. 1: Distribution of Couples According to their Sexual Behavior



3.2 Distribution of respondents according to age differences

Table: 1 Distribution of respondents according to age differences

Age difference	Frequency	Percentage	Mean	Median	Mode
0-2 years	115	31.9	2.4	2.0	1
3-5 years	112	31.1			
6-8 years	54	15			
9-11 years	36	10			
12 and more	43	11.9			
Total	360				

On average most couples prefered partners who were either ± 2.4 years olders than themselves. 31.9% prefered patrners with an age difference of ± 2 years while 11.9% of preferred partners who were either below or exceeded them with more than 12 years.

Table 2: Crosstabulation of couples sexual behavior and age differences

Sexual behavior	Age differences within couples (years)					
	0-2 N (%)	3-5 N (%)	6-8 N (%)	9-11 N (%)	12 & above N (%)	Total
Premarital sex	47 (33.3)	51(36.2)	19(13.5)	9 (6.4)	15(10.6)	141
Marital Sex	53(32.5)	45(27.6)	28 (17.2)	19 (11.7)	18 (11.0)	163
Extramarital sex	15(26.8)	16 (28.6)	7 (12.5)	8 (14.3)	10 (17.9)	56
Total	115(31.9)	112 (31.1)	54(15)	36 (10)	43 (11.9)	360

$X^2 = 8.727, P=0.366$

Couples who had an age difference of 3-5 years were more likely to engage in premarital and extramarital sex while those who had an age difference of 0-2 years were likely to engage in marital sex.

86.1% of the couples preferred having sex prior to knowing HIV status of their sexual partners while to 13.9% preferred to go for a HIV test prior to having sex. Thus, risk of exposure to HIV was at 86.1%.

Table 3 Risk of exposure to HIV

Sexual Behavior	Couples sexual intercourse Prior to visiting VCT		
	Yes N (%)	No N (%)	Total
Premarital Sex	109 (77.3)	32 (22.7)	141
Marital Sex	159 (97.5)	4 (2.5)	163
Extramarital Sex	42 (75.0)	14 (25)	56
Total	310 (86.1)	50 (13.9)	360

$X^2 = 32.7, P=0.00$

Discussion

HIV prevalence rate or rather the number of people who are newly infected with HIV per year has been of great concern, not only to policy makers but also to practitioners as well. The concern has always been on identifying factors that predispose couples to acquiring HIV. Some of these factors we studied in this research were patterns of sexual behavior, age differences between partners forming a couple and amount of risk of infection couples were willing to tolerate when initiating new sexual relationships. We also examined quantity of risk of HIV exposure couples were willing to tolerate before engaging in sexual activities.

In this study, we identified three patterns of sexual behaviors that were common among couples; premarital sex, marital sex and extramarital sex. We defined premarital

sex as a type of sexual relationship that involves vaginal penetration before marriage. It is mostly preferred by young unmarried people aged 15 to24 years. They mostly engage in this type of sexual relation mainly as a way of conforming to peer pressure, gaining sexual pleasure and in some cases as a mode of gaining material goods such as money (Pouline, 2007; Kobor, *et al.,* 2007). In addition, this type of sexual relation maintained by young people is usually of short duration and in some situations, it may involve a series of multiple partners. Multiple partners has been considered as a high risk factor for unplanned pregnancies, illegal abortions, psychosocial problems and acquisition of sexually transmitted infections including HIV, especially when condoms are either not used correctly and/or consistently (Santelli, Nancy, Richard, Amita, & Laurie, 1998; Behnam, *et al*., 2016; Kumar, Dandona, Kuma, & Dandona, 2011). In our study we found that 39.2% of the respondents were engaging in premarital sex. This finding shows that young and unmarried people were not abstaining from sexual activities as being advocated by most policy makers.

A similar result was found by Finer (2007) in the United States where at least 75% of their respondents were engaging in premarital sex. Several psychological, economical, socio-cultural, and biological factors have been identified as factors that push young people to premarital sex. Psychological factors including alcohol and drug abuse have been known to lower decision-making abilities of those under their influence especially when making judgements about safer sex. Economic factors especially poverty has disempowering effects on those living under it. In the context of HIV and couples, poverty lowers the ability of the partner from lower socio-economic backgrounds from bargaining for safer sex. Young people who normally engage in premarital sex are usually in their late teenagerhood and early adulthood. These two stages of development are normally characterized by rapid hormonal and emotional changes. These rapid changes may make young people to engage in premarital sex with multiple partners so as to satisfy their emotional needs. Having multiple sexual partners may predispose them to acquiring HIV (Santelli, Nancy, Richard, Amita, & Laurie, 1998).

We also examined marital sex, a type of sexual behavior where sex is only performed within the institution of marriage. This form of sexual behavior carries least amount risk of HIV infections if performed exclusively within the marital institution. This is especially true if both partners tested negative before their first sexual encounter and have remained faithful to each other. In our study we observed that 45.3% of respondents were engaging in sexual activities within the marriage.

The 3rd pattern we examined was extra-marital sex, where married people were engaging in sexual activities outside marriage. In our study we found that at least 15.6% of the respondents were engaging in extra-marital affairs. We attributed this finding to the fact that extra marital relationships are normally short lived and that some partners resort to it as a way of revenging

on a cheating partner. According to Ashley (2014), multiple sexual partners is the underlying driver for high HIV infections rates in regions where the infection is epidemic. This is because multiple sexual partners are more likely to engage in sexual activities during asymptomatic phase of the HIV infection. The infected individual may then in turn pass on the virus to their unsuspecting and sometimes faithful marital partner. Extra-marital sex also provides the avenue through which HIV is spread from one region to another, especially when marital partners are in long distance relationships. A person in a long-distance relationship

may pick up the virus in one region and pass it on to his/her partners who live in another region (Kalavska, *et al*., 2015; Kafkova & Kimuli, 2015).

Other aspects of sexual behavior we examined was age differences among sexually active couples. Most studies have found age differences among couples in intimate relationships to be a factor that contributes to acquisition and spread of sexually transmitted infections such as HIV (Joost *et al,* 2018). Various models including the widely used STI model have been advanced in explaining how age differences among couples lead to the acquisition and spread of infectious diseases (Easterly *et al*, 2018; Herdics et al. 2017). In our study we observed that 31.9% of the respondents were in sexual relationships with someone who was either ± 2 years older than themselves. Other respondents (68.1%) chose sexual partners who were either younger or older than them with a margin of three or more years. We speculate that age difference did not only influence their choices of sexual partner but also contributed to the transmission of HIV. This is because most societies have social norms that are too lenient on promiscuous men compared to women. A promiscuous man may be given heroic titles such as 'a womanizer' while a woman may be labelled with demeaning and shameful titles such as 'harlot', 'slut', 'hoe' 'prostitute' among many other offensive adjectives. This leniency may predispose men to a higher risk of being exposed to HIV virus. Thus, we can assume that HIV prevalence for men picks at old age compared to women (Roxanne, Hens, & Delva, 2018; Enright & Rowland, 2018). Since, men prefer to marry or have sexual relationships with younger heterosexual partners, they may end up passing on HIV virus to younger women who in turn it passes it to younger men. This is because as men age their sexual drive also diminishes while that of their heterosexual younger partners reaches climax. This may force younger women married to old men to engage in casual sexual relationships with younger men in order to satisfy their sexual desires. In short, older men look for younger women for long term relationships while older women look for younger men for short term relationships. In addition, older partners are always the alpha of these relationships, i.e. they always determine or have the last word in what happens in these relationships. Thus, the younger partner may find it difficult to negotiate for safer sex such as use of condoms or going for HIV tests. This may explain how HIV is passed from one generation to another.

The last aspect of sexual behavior we examined was amount of risk of HIV infection couples were willing to tolerate when initiating new sexual relationships. More specifically we wanted to know whether our study couples took time to know HIV status of their partners before engaging in sexual activities. In our study we found that 86.6% of the respondents had had sex prior to knowing HIV status of their partners. This risk may even be elevated by the fact that infants who acquired HIV during pregnancy and labor process in the early 90s, are now in their early adulthood. In the 90s, Antiretroviral drugs (ARV) which helps in reducing chances of transmitting HIV from mothers to their children, were not readily available in most public hospitals. Thus, a significant proportion of infants were infected with virus during labor and pregnancy. This heightens the risk of HIV acquisition among those who engage in premarital sex without knowing status of their sexual partners (Mikolasova, G et al. 2018).

Conclusions

We conclude that more couples were engaging in premarital and extramarital sex

than marital sex. Sex outside marriage is a risk factor that contributes to the spread of HIV. Age difference

of 2.4 years was the most preferred by the couples. Age difference is a factor that facilitates transmission of HIV from one generation to another. We also concluded that most couples in

this study preferred having sex first before knowing their HIV status. This is a risky practice that facilitates new acquisition of HIV infection.

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