Full Length Research Paper

Premarital sex and condom use among never-married men in Malawi

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Premarital sex and non-condom use are both associated with HIV infection. This study used data from the Malawi Demographic and Health Survey (MDHS) 2004 to estimate the prevalence of premarital sex-and examine the association between religion and pre-marital sex among never married Malawian men. The associations between the variables were assessed by logistic regression analysis. A total of 1039 never-married men, mean age 19.6 years (standard deviation=4.3 years) participated in the MDHS of 2004. A total of 671 (63.2%) of the men reported having ever had sex, that is, reported premarital sexual intercourse (PSI) and median age at sexual debut was 16 years. Of the 450 who answered the question whether condom was used at last sex, 213 (48.1%) reported having used condom. Compared to Catholics (as referents) the adjusted odds ratios for PSI were as follows: Presbyterians 0.83 (0.45-1. 53), Seventh-Day Adventists (SDAs) or /Seventh-Day Baptists (SDBs), 0.82 (0.35-1.90), Other Christians 1.00 (0.63-1.60), Muslims 1.96 (0.96-4.00), those with no religion 1.95 (0.37-3.549). The adjusted odds ratios for condom use at last sex were: Presbyterians 1.05 (0.53-2.09); SDAs/SDBs 1.10 (0.41-2.95); Other Christians 0.90 (0.47-1.71); Muslims 1.02 (0.41-2.54); No religion 0.56 (0.08-3.77). There was no overall difference on the likelihood of reporting having ever had premarital sex among never-married men among who reported to belong to a religious group or those not belonging to a religious group. Although individuals who reported not belonging to any religion were almost half as likely to have used condoms at last sex, the effect estimate was not significant. Reporting no religion was not associated with premarital sex nor condom use among men in Malawi.

Key words: Malawi, premarital sex, condom use, religion, religiosity.

INTRODUCTION

Human immunodeficiency virus (HIV) incidence and prevalence in southern Africa are high among young people, many of whom are unmarried. Premarital sexual intercourse (PSI) is a risk factor for HIV infection in this geographical setting where much of HIV transmission

and acquisition is via heterosexual intercourse (Akani et al., 2005; UNAIDS, 2008). High HIV risk among unmarried persons is associated with high multiple and concurrent partnerships (Bongaarts, 2007).

Correct and consistent condom use is effective which could lead to up to 80% reduction in HIV incidence (Davis and Weller, 1999; Weller and Davis, 2002; Pinkerton et al., 1998). Condom promotion to prevent HIV transmission is likely to be effective and efficient if it is targeted toward specific population sub-groups such as adolescents and sexually active individuals with multiple and concurrent partners.

Condom use within marriage presents specific

Abbreviations: MDHS, Malawi demographic and health survey; **PSI,** premarital sexual intercourse; **SDAs,** seventh-day adventists; **SDBs,** seventh-day baptists; **HIV,** human immunodeficiency virus; **MPHC,** Malawi population and housing census.

challenges including the desire to have children, trust and confrontation with infidelity issues (Chimbiri, 2007; Foss et al., 2007; Maharaj and Cleland, 2005). Callegari et al. (2008) reported a high likelihood of condom use within marriage partnerships with a known HIV infected partner. The impediments to condom use among unmarried couples may be somewhat different as many of these (relationships) may not have desire to procreate and sexual relationships may be transitory. While consistent condom use has only recently been promoted as the key prevention strategy among married persons in Malawi, this intervention may be key to HIV prevention among unmarried persons who are sexually active.

Religious groups have expressed diverse views on the transmission of HIV, how the virus could be prevented and controlled and the socially acceptable behaviors towards HIV infected persons (Awoyemi, 2008; Black, 1997; Hendricksen et al., 2007; Moszynski, 2008; Naidu, 1997; Osteria and Sullivan, 1991; Rankin et al., 2007). Most religious groups in Malawi, as is the case elsewhere, discourage premarital sex as well as condom promotion and use among unmarried people. It is often argued that condom promotion among unmarried persons encourages premarital sex (Cohen and Tate, 2006; Grunseit et al., 1997). Opposition to condom use persists despite reports suggesting that condom aware-ness may not encourage premarital sex (Fallon, 2008). The preferred HIV prevention alternative which is the abstinence-only education used to deliver abstinence skills have not always been effective (Elster, 2006). Religion could influence the development and main-tenance of mores on sexual behaviors which may affect a person's risk of HIV acquisition (Nwneka, 2007; Velayati et al., 2007). Hill et al. (2004) have reported that in Brazil, Evangelical Christian men were less likely to engage in extramarital sex than men from other faiths.

Despite that premarital sex is frowned upon in Malawi, it is a reality of life for many unmarried persons. Sex predisposes to sexually transmitted infections, including HIV. The prevalence of premarital sex among never married men is unknown. While Agha et al. (2006) have reported sexual intercourse in relation to adolescents in Zambia, we are unaware of any literature that has been published on the association between religion and pre-marital sex as well between religion and use of condoms among never married men. This information is important in that: knowledge of the prevalence of ever had sex among unmarried men and their condom use or non-use indicates in some way, the proportion of unmarried men who may be at risk of HIV and other sexually transmitted infection. An association between religions and sexual behavior could also shed more light as to what community resources, if any may be available to prevent HIV transmission. For instance, if members of one religion appear to not engage in premarital sex, this may influence researchers and program planners to search for what specific attributes of that religion others could learn

from to prevent HIV transmission/acquisition.

We therefore conducted this study, using nationally representative survey data from Malawi to estimate the prevalence of self reported sexual intercourse, and to explore if religion is associated with sexual intercourse or condom use among never married men.

DATA AND METHODS

We used data from the Malawi Demographic and Health Survey (MDHS) 2004. The survey was conducted between 2004 and 2005 by the Malawi National Statistical Office with technical support from ORC Macro Inc, Calverton, Maryland.

The current study involved the use of a sub-sample of never married men between 15 to 54 years (MDHS 2004) to estimate the prevalence of premarital sex and assess if religion was associated with premarital sex or condom use at last sex.

A comprehensive description of the MDHS 2004 has been reported elsewhere (National Statistical Office and ORC Macro Inc., 2005). Briefly, a multistage sampling technique was conducted in which the first stage included sampling 522 clusters drawn from the most recent census at the time, that is, the 1998 Malawi Population and Housing Census (MPHC). The 522 clusters comprised 458 in rural and 64 clusters in urban areas. An exhaustive listing of households in each of the clusters was subsequently created. Every third household in the list was selected for interview with men. All men aged 15-54 years were eligible interview.

The MDHS 2004 questionnaires were based on the MEASURE DHS model questionnaires (ORC Macro, 2006). The questionnaire was adapted for use in Malawi, with regard to content and language after consultation with national stakeholders including the Ministry of Health. The questionnaire used was in two local languages, that is, Chichewa, the official national and also main language for the central and southern regions of the country and Tumbuka for most of the districts in the northern region. The overall MDHS sample had an 86 percent response rate. The primary reason for non-response was failure to find the respondents despite repeated visits to their households. However, this is study is based on a sub-sample which were unmarried men, among which the response rate is not known.

Data analysis

Data were analyzed using Stata 10.0. Frequencies, medians, means and standard deviations and proportions of relevant socio-demographic and behavioral variables were calculated. To assess the association between religion and outcome variables (premarital sex or condom use) we run backward logistic regression procedure at the multivariate level. A variable was retained in the model if it was associated with a 5% change in effect estimate following its removal from the model.

Variable description

Two binary outcome variables were created, that is, self-reported history of having ever had sexual intercourse (PSI) and condom use at last sex. The exposure variable of interest was religion obtained as a response to the question: "What is your religion?" The available options were: Catholic; Anglican; CCAP (Church of Central African Presbyterians-a grouping of Presbyterian churches); Seventh-Day Adventists/Seventh Day Baptist-as one group; Other Christian (for example, African Independent Churches, Evangelicals); Muslims; No religion and Other religions. We created

Table 1. Socio-demographic characteristics never-married men in the Malawi Demographic and Health Survey, 2004.

Characteristic	Frequency (weighted %)
Tribe	
Chewa	303 (31.1)
Tumbuka	130 (12.1)
Lomwe	179 (14.3)
Yao	147 (12.3)
Ngoni	126 (14.1)
Other	161 (16.1)
Circumcised	
No	812 (83.7)
Yes	200 (16.3)
Ever tested for HIV	
No	896 (86.3)
Yes	132 (13.7)
Age	
15-19	625 (58.0)
20 -24	289 (28.4)
≥25	125 (13.6)
Education	
Primary school or none	689 (64.0)
Secondary or higher	450 (36.0)
Urban residence	
No	818 (73.0)
Yes	221(27.0)
Residence by region	
North	170 (15.1)
Center	381 (42.1)
South	488 (42.8)
Wealth index	
Lowest	121 (11.4)
Second	192 (17.7)
Middle	186 (15.6)
Fourth	233 (20.4)
Highest	307 (35.1)
Religion	
Catholic	223 (21.1)
Presbyterians	252 (25.0)
Seventh-Day Adventist/Baptist	75 (7.9)
Other Christian	347 (34.3)
Muslim	133 (10.5)
None	9 (1.2)
Alcohol use	
Yes	139 (14.3)
No	900 (85.7)

indicator variables for each these options except Anglican which, because of small sample, was grouped together with "Other Christians".

Potential confounder variables were: age; educational attainment; tribe; alcohol use; region of the country where residing; wealth status; urban versus rural residence. Generation of the wealth index described by Shea and Johnson (2004) was used. These explanatory variables were identified from the literature as potentially associated with sexual behaviors as well as religion.

Since publicly available, de-identified data files from ORC Macro Inc were used, full IRB (institutional review board) was not required.

RESULTS

Socio-demographic characteristics of the sample

Shown in Table 1, a total of 1039 men (31.9%) out of the overall 3261 men in the MDHS reported having never been married. Their mean age was 19.6 years (standard deviation=4.3 years). A total of 139 (14.3%) reported being current alcohol users while 900 (85.7%) were not. The overall median age at sexual debut was 16 years; 16 years for Catholics, Presbyterians and Seventh Day Adventists/Baptists, 15 years for Other Christians and Muslims and 18 year for those with no religion. A total of 671 (63.2%) never-married men reported having ever had sex, that is, reported premarital sex. Of 450 survey participants who responded to the question as to whether condom was used at last sex, 213 (48.1%) reported having used condom.

Factors associated with pre-marital sex and condom use

Using bivariate logistic regression analysis, we explored the association between pre-marital sex or condom use and a number of explanatory variables. The results of bivariate analysis are shown in Table 2. The associated odds ratios and 95% confidence intervals for having engaged in PSI if: secondary or higher education, 1.70 (1.18-2.46), the southern region compared to north 2.01 (1.38-2.93); alcohol use 4.92 (2.04-11.87). As it was possible that the effect of education may have been due to the fact that higher education was associated with being older, we also assessed the effect of education having controlled for age; the effect estimate dropped and included the null, that is, 1.04 (0.69-1.56).

Bivariate association between condom use at last sex and a list of explanatory variables are also reported as follows: we found that the odds ratios (95% CI) for study participants who had ever tested were 4.19 (2.19-8.00); age 20-24 years 2.98 (1.78-4.99) and age 20-24 years 2.39 (1.23-4.64) compared to age 15-19 years; and secondary education or higher 2.57 (1.52-4.34) compared with those with primary or no education (Table 3).

With Catholics as the referent category, the odds ratios and 95% confidence intervals for condom use at sexual

Table 2. Bivariate associations between history of having ever had sex and socio-demographic variables among unmarried Malawian men.

Variable	Unadjusted Odds ratio (95% CI)
Circumcised	
No	1
Yes	1.46 (0.89-2.38)
Ever tested for HIV	
No	1
Yes	4.28 (2.51-7.32)
Age	
15-19	1
20 -24	3.57 (2.25-5.67)
≥25	5.21 (3.17-8.56)
Education	
Primary school or none	1
Secondary or higher	1.70 (1.20-2.41)
Urban residence	
No	1
Yes	0.97 (0.61-1.54)
Residence by region	
North	1
Center	1.21 (0.80-1.81)
South	2.01 (1.38-2.93)
Wealth index	
Lowest	1
Second	0.75 (0.43-1.32)
Middle	0.83 (0.43-1.59)
Fourth	0.87 (0.49-1.54)
Highest	0.84 (0.46-1.56)
Alcohol	
No	1
Yes	4.92 (2.04 -11.87)
Religion	
Catholic	1
Presbyterians	0.76 (0.52-1.11)
Seventh-Day Adventist/Baptist	0.89 (0.45-1.74)
Other Christian	0.98 (0.64-1.50)
Muslim	1.09 (0.63-1.87)
None	2.16 (0.37-12.72)

Table 3. Bivariate associations between explanatory variables and condom use at last sex.

Variable	Unadjusted Odds ratio (95% CI)
Circumcised	0.46 (0.27-0.77)
Ever tested for HIV	4.19 (2.19-8.00)
Age	
15-19	1
20 -24	2.98 (1.78-4.99)
≥25	2.39 (1.23-4.64)
Education	
Primary school or none	1
Secondary or higher	2.57 (1.52-4.34)
Urban residence	1.67 (0.91-3.06)
Residence by region	
North	1
Center	0.97 (0.47-2.01)
South	0.71 (0.37-1.35)
Wealth index	
Lowest	1
Second	1.03 (0.48-2.23)
Middle	0.68 (0.34-1.37)
Fourth	0.93 (0.46-1.89)
Highest	1.41 (0.69-2.86)
Currently used alcohol	1.69 (0.91-3.13)
Religion	
Catholic	1
Presbyterians	0.85 (0.45-1.61)
Seventh-Day Adventist/Baptists	1.05 (0.42-2.62)
Other Christian	0.67 (0.37-1.21)
Muslim	0.44 (0.21-0.89)
None	0.39 (0.06-2.55)

debit differed in the following way: Presbyterians 0.78(0.39-1.59); Adventists/Baptists), 0.83 (0.37-1.86); Other Christians, 0.78 (0.45-1.35) and; Muslims, 0.94 (0.45-1.97).

Multivariate association between religion and pre-marital sex or condom use

In multivariate logistic regression analysis, we run several models controlling for history of prior HIV testing, age, tribe, wealth status, education, alcohol, place of residence (northern, central and southern region; rural versus urban). With premarital sexual intercourse as the outcome, and religion as the exposure, only history of having ever tested for HIV was found to be an important confounder. Compared to Catholics, never married men reporting to belong to the other religions were no different in history of premarital sex: adjusted odds ratios (95%

Table 4. Multivariate associations between religion and premarital sex among Malawian men.

Variable	Adjusted Odds ratio (95% CI)
Catholic	Referent
Presbyterian	0.83 (0.45-1.53)
SDA/SDB	0.82 (0.35-1.90)
Other Christians	1.00 (0.63-1.60)
Muslims	1.96 (0.96-4.00)
No religion	1.95 (0.37-3.54)

CI), Presbyterians 0.83 (0.45-1.53), SDAs or SDBs 0.82 (0.35-1.90), Other Christians 1.00 (0.63-1.160), Muslims 1.96 (0.96-4.00). Those who reported no religion were also no more likely to report premarital sex compared to Catholics, adjusted odds ratio= 1.95 (95% CI, 0.37-3.54) (Table 4).

When condom used at last intercourse was the outcome of interest, only self-reported circumcision status and history of having ever tested for HIV were eventually identified as important confounders. With Catholics as the referent group, the odds ratios for condom use at last sex were: Presbyterians 1.05 (0.53-2.09); SDA/Baptists 1.10 (0.41-2.95); Other Christians 0.90 (0.47-1.71); Muslims 1.02 (0.41-2.54); No religion 0.56 (0.08-3.77).

DISCUSSION

In a sub-sample of never-married men within the MDHS 2004, we found that there was no association between religion and having ever engaged in pre-marital sex among never married Malawian men. In respect of condom use at last sex, there was no difference in reported use at last sex among men from the different religions.

Virtually all religions in Malawi discourage premarital sex; however attitudes towards condom use in premarital sex are more varied. Being known to have engaged on premarital sex, often discovered when "caught in the act" or through pregnancy often attracts community sanction including excommunication in Malawi. Agha et al. (2006) have reported similar observations in Zambia where some religious groups sanction against premarital sex while others are more tolerant. The risk of excommunication could be an effective deterrent from engaging in premarital sex for some people. Individuals with no religious affiliation may be less motivated to avoid premarital sex as their social 'costs' from the consequences of premarital sex may not be perceived as high as those among those who have religions. It is also possible that the various HIV-related programs within religions such as general awareness, care and support initiatives, towards HIV infected persons (Awoyemi, 2008)

could influence unmarried men to avoid premarital sexual intercourse.

The overall age at sexual debut was 16 years, lower for Muslims and "other Christians (15 years) but higher among those who reported no religion (18 years). We do not know why men who reported to have no religion delayed sexual debut. It is plausible though that not having a religion may affect access to social networks where potential sexual partners may be encountered.

In bivariate analysis, we found that having reported as being circumcised was associated with having ever had sex. The majority of people who are circumcised in Malawi have done so for tribal and religious reasons. The Yao, an ethnic group which practices circumcision as a rite of passage to adulthood are also largely Muslim. This ritual circumcision is largely provided by traditional circumcisers and marks the transition from boyhood to manhood (Peltzer et al., 2007). As part of the rituals of circumcision, initiates may be encouraged to experiment with sex upon healing of the circumcision wound or in some cases regardless of healing of the wound. Ngalande et al. (2006) have reported that men in Yao traditional communities may elect to be circumcised in order to enhance the standing among potential sexual partners. Although we found never-married circumcised men more likely to have engaged in sex, the effect estimates included the null.

That increasing age would be associated with ever having had sex is perhaps expected. The proportion of the population to have ever engaged in sexual intercourse should increase with age or at least remain stable but cannot reduce if there is no preferentially loss of ever sexually active people. Higher education, which may be a function of age, could also be associated with sex. However, in assessing the effect of education, we also controlled for age, which resulted in attenuation of the effect and the 95% confidence intervals included one. It is possible that being educated may increase one's opportunity to find sexual partners (high social status) and/or just by attending school may increase the pool from which an individual can access partners. Furthermore, education may influence an individual's perception towards life (such as social and sexual taboos, question traditional values) which may increase or in some cases decrease the possibility of acquiring potential sex partners.

Alcohol use and living in the southern region of the country, were each associated with having ever engaged in sex. Previous studies have shown that alcohol is associated with premarital sex, extra-marital sex and failure to use condoms in high risk situations (Alexander et al., 2007; Fatusi and Blum, 2008; Kayembe et al., 2008; Twa-Twa et al., 2008). Part of the reason behind this association is the fact that places where alcohol is sold and consumed as also the same places where new partners, especially casual partners can be acquired. With regard to the Southern region of the country, this is

the most urbanized section of the country, where liberal attitudes and practices are likely to be expressed. There is therefore tolerance towards premarital sex than in the other regions of the country. In many parts of eastern and southern Africa, the urban-rural HIV disparity is such that urban areas are heavily affected compared to rural areas (Montana et al., 2008), in part because of the permissive sexual attitudes in urban areas compared to rural areas.

It is interesting that study participants who reported to have ever tested for HIV were also more likely to have had premarital sex. As data were cross sectional, we cannot determine causation. However, two possible explanations are possible. The first explanation could be that individuals who have ever had sex were more likely to have sought HIV testing in order to know whether they had been infected or not. The second plausible but perhaps less convincing explanation is that individuals, whether infected or not those who had sought HIV testing were more likely to change behavior and engage in sex when they knew their HIV status. If not infected when they had previously engaged in unprotected sex, they may have the belief that they could not be infected (a sense of invincibility). For those who had been infected via sex, whether they changed sexual behavior or not would not change the fact that they had ever engaged in premarital sex and so would not have an effect at all on prevalence of premarital sex.

When condom use at last sex was assessed, circumcised men were less likely to have used condoms at last sex. This was probably due to cultural believes that sex is pleasurable to women (and men) if the penis is circumcised (Ngalande et al., 2006). There has been concern that, following evidence from three randomized controlled studies that circumcision was efficacious in preventing HIV acquisition among men in Eastern and Southern Africa (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007), some men may believe that if circumcised they are fully protected and that they may not use condoms when they in fact should (Rennie et al., 2007). While such concern is certainly reasonable as many men learn of the efficacy of circumcision in preventing HIV acquisition, this information was not available when the MDHS 2004 was being conducted. On the other hand, those who had ever tested were more likely to use condoms and so were individuals in a higher education or age category. Kankasa et al. (2007) have reported that among urban women in Zambia, condoms were more likely to be used in extramarital compared to within marriage sex.

In a study of Nigerian unmarried couples receiving premarital HIV counseling and testing Akani et al. (2005) reported that history of premarital sex was associated with one or both of them being HIV infected. Premarital sex therefore is an important factor in introducing HIV at marriage. Therefore our effort to prevent HIV will bear significant rewards if HIV risk associated with premarital sex is reduced.

The present study used data from a nationally-representative sample survey which used a validated questionnaire. However there are several limitations to consider. Firstly, as cross sectional data were used we cannot assign causations to any of the associations between religion and the outcomes of interest (premarital sex or condom use). Furthermore data were collected based on self-reports. To the extent that survey participants mis-reported (either intentionally or unintentionally) their religion or on any of the questions from which our variables were derived, our findings may be biased. Social desirability (Arnold and Feldman., 1981; Donaldson and Grant-Vallone, 2002; Ganster et al., 1983; Moorman and Podsakoff, 1992), defined as the tendency of study participants to reply in a manner that will be viewed favorably by others is an important consideration in most survey, much more so surveys that aim to collected data on sexual behaviors.

The categorization of religious grouping especially within the "Other Christians" and SDAs/SDBs may be problematic. The "other Christians" group which comprises Evangelicals and Charismatic churches, African Independent Church were grouped based not so much on their doctrinal beliefs and their stance of sexual behaviors but rather based on the fact that their followers are much lower in numbers within the Malawi population compared to the other religions. This group could be a very heterogenous one in doctrinal beliefs. If sexual behaviors of eligible survey participants who did not participate in the survey differed substantially with those who participated, then our study results may be biased. The DHS does not collect data on whether an individual practices their religion. Hill et al., (2004) have reported on differences in married men's engagement in extramarital sex differed whether an individual was practicing their religion or not. Fatusi and Blum, (2008) have reported that higher level of religiosity was associated with lower sexual debut rates among females. Our study though only assessed self-reported religious affiliation but did not assess levels of religiosity.

The relationship dynamics which may influence decisions and commitment to use condoms was also not assessed. Rosenthal et al. (1997) reported that condom was negatively associated with partner's increasing age and use of other contraceptives. Finally, the current DHS data has no measures of religiosity (frequency of church attendance) or spirituality which would perhaps be better markers of an individual's commitment to their religion and relationship with a Higher Being (Gillum et al., 2008; Koenig., 2008).

Conclusion

Being affiliated with a religion, no matter what it may be, was not associated with self-reported history of having engaged in premarital sex among never married

Malawian men. There was no difference in condom use at last sex among never married Malawian men among the different religion. Having no religion is associated with delayed sexual debut among men in Malawi. Religious organizations however will continue to face the difficult choice of whether to encourage, discourage or "do nothing" about condom use among their never-married but sexually active members who may consequently be exposed to HIV infection and promoting the abstinence-only approach.

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