Is Marriage a Viable Strategy of Reducing HIV/AIDS Infections Among Women in Zimbabwe?

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ABSTRACT

This study examined the potential of marriage as a recommendable behavioural practice in reducing HIV/AIDS infections among Zimbabwean women. The argument is that lower HIV/AIDS infections among currently married women relative to never married and formerly married women, in a population where heterosexual intercourse is the main mode of transmission, suggests that marriage could be a viable strategy. Using Zimbabwe Demographic Health Survey Data 2005-06, the study examined HIV/AIDS prevalence among never married, currently married and formerly married women. The study population was 4,491 women who voluntarily accepted to undergo an HIV test. Logistic regressions were used to isolate the effects of marital status and other factors on HIV/AIDS. The findings were that currently married women had lowest HIV/AIDS infections, and formerly married women had highest. This suggests that marriage can be a recommendable behavioural practice in the fight to combat HIV/AIDS infections among Zimbabwean women.

Key words: Marital status, HIV/AIDS status/infection/prevalence, never married, currently married, formerly married, multiple concurrent partners, women, Zimbabwe

INTRODUCTION

Issues concerning women's well-being and welfare have become salient to population health since the International Conference on Population and Development in Cairo in 1994. The reasons for this are that women empowerment is a major step towards reducing child mortality, improving population health and enhancing the chances of reaching the Millennium Development Goals (Mosley and Chen, 1984). A major setback towards achieving these efforts has been the impact of HIV/AIDS pandemic among women in Sub-Sahara Africa (SSA) who by 2008 constituted an estimate of 55% of the total number of infected individuals in this region (Avert, 2008; Marawanyika, 2010). The main mode of HIV/AIDS transmission in this region, where the culture permits polygamy, and the practice of multiple concurrent sexual partnerships (MCPs) is highly prevalent, is through heterosexual intercourse. The practice of MCPs is found in both sexes, but more prevalent among men. In Zimbabwe the term "small house" has been coined to particularly describe men's extra marital behaviour (Chigandu, 2007; Ndlovu, 2004). Zimbabwean President Robert Mugabe also conceded that the "small house" phenomenon is now stuck in the Zimbabwean society and that man, including him; find it difficult to move out of it, though much to the suffering of women (Metro Zimbabwe, 2010).

Research has identified the practice of MCPs as making individuals highly susceptible to sexually transmitted diseases like HIV/AIDS (Leclerc-Madlala, 2004; Clark, 2006). Men's MCPs practice in SSA is mainly driven by cultural norms e.g. acceptance of polygamy and perception among men that manhood is measured in the society by the number of sexual partners they have. For women the reasons to have MCPs might vary from love for luxury goods and gifts that come with several partnerships especially with financially stable men to desire to get sympathy and appreciation that could be lacking in current relationships. MCPs practice for subsistence though still one of the reasons, can no longer be viewed as the single driving cause for this practice by women (Leclerc-Madlala, 2004; Hattori et al., 2006). Research suggest that MCPs practice is highly prevalent among single individuals and lower among married individuals as there is assumed high sexual exclusivity in marriage (Hattori et al., 2006). It is therefore possible that since marriage most likely proffers long term sexual exclusivity, higher proportion married should be associated with lower risk of HIV/AIDS infection (Hattori et al., 2006). Such a perception might have most likely resulted in many people in Africa, policy makers, parents and women to view marriage, particularly monogamy, as offering safety from HIV/AIDS infection. However, empirical evidence in some developing countries especially from SSA suggests high HIV/AIDS prevalence among married individuals, as suggested by studies in the following African cities of Kampala, Cotonou, Yaoundé, Kisumu and Ndola (Bauer, 2007; Shisana et al., 2004).

BACKGROUND

Health researchers have recommended behavioural strategies like abstinence from sex until married, condom use and sexual exclusivity as measures to prevent HIV/AIDS infection. However, these three prescriptions have not always been adopted. Some studies find that in long-term relationships condom use is low or inconsistent, and that multiple concurrent sexual partnerships (MCPs) are culturally tolerated and a widespread practice (Reniers, 2008; Heise et al, 1995; Schatz, 2005).The adoption and implementation of preventive measures to avoid HIV/AIDS infection is therefore likely to vary with societies and within them, contributing to variations in the prevalence of HIV/AIDS infection across countries, within cultures, and social groups in the same country.

Risks of HIV/AIDS transmission among women in SSA

In SSA region, factors like gender inequality, polygamy, poverty, and MCPs practice could be greatly contributing to high prevalence of this disease. African societal norms and values often favour men's dominance over women. In most cases men have control over means of production and women are mainly left to do reproductive-related work (Gupta, 2000; UNAIDS/WHO, 2009). This results in women remaining economically disadvantaged and dependent on men, consequently greatly compromising women's power to negotiate safe sex. Gender inequality is likely to further impact on HIV/AIDS infection among never married, currently married, and formerly married women differently. Women in this region who are not in marriage are likely to have more power in decision making in sexual issues than women in marriage. Payment of bride price may partly be contributing towards a traditional notion that married women are subordinates to their partners.

Polygamy is a culturally distinctive feature of African marriage which allows men to marry more than one wife, and the most widely recognised demographic and health consequence of polygamy is its effect on HIV and other sexually transmitted infections (Gregson et al, 1995; Bove et al, 2009; Hattori et al, 2006).The number of women seeking sexual and material satisfaction outside marriage might be higher among women in polygamy than in monogamy (Hattori et al., 2006; Rodriguez, ND). The SSA region also has possibly the highest poverty prevalence level in the world. This is likely to be accounted for by a variety of reasons, one of which could be the long term effects of colonization. A positive relationship between poverty and risk of HIV/AIDS infection has been identified, especially among currently married women (Hattori et al., 2006). Poverty has a likely effect to push women into the practice of MCPs.

The practice of MCPs by both men and women is a likely driver of HIV/AIDS transmission in SSA as it might be anywhere where the practice is prevalent. Individuals may have many sexual partners at once or overlapping over a period of time. The odds of coming across an infected

partner are higher for individuals who encounter many sexual partners in their life time relative to individuals who have had less or one sexual partner. The risk further increases with the frequency with which individuals change partners within a given time.

Zimbabwean women and risk to HIV/AIDS infection

In Zimbabwe, the first HIV/AIDS case was reported in 1985 (Rodriguez, ND; Avert, 2008). Since then, both incidence and prevalence of HIV/AIDS in the country and that of her fellow member states in the Southern African region has continued to growth to be the world's most alarming. This can be inferred from the title the "epicentre of the pandemic" bestowed on this region by some researchers in recognition of high rates of HIV/AIDS cases ((Ndlovu, 2004; Sausser et al, 2000; Campel et al, 1999). However, Zimbabwe has been the second country within the SSA region, after Uganda, and the first in Southern Africa to report HIV/AIDS infection decline (Gregson et al, 2007). The explanation to this decline needs to be treated with caution, for rather than associating this to be a result of successful campaign against HIV/AIDS infection by both government and private sector; it could be a result of high mortality among cases in the near past.

The "small house" practice by Zimbabwean men is one major likely phenomenon that has increased the exposure of Zimbabwean to HIV/AIDS infections. This is a form of MCPs practice among men in Zimbabwe. This term "small house" can be defined as a long term concurrent sexual relationship with another woman who is not the man's legal wife (Chigandu, 2007). Men are likely to assume the role of being heads of their "small house" households. Thus they fend for daily needs of the "small house", by proving food, paying rentals, and even other extras like meeting educational requirements of the "small house" s own children. The relationship becomes a photo copy of the one the men have with their regular partners. For this reason, it is likely possible that these men often perceive their sexual relationships with "small houses" as safe from HIV/AIDS infection. Research has suggested that there has been no evidence of consistent condom use with a regular partner (Gregson et al, 2007).

An advertisement screened on the Zimbabwean Broadcasting Corporation Television discouraging the "small house" practice asks if men know what their "small houses" do when they are not there. Then the answer suggests that she sleeps with Jonah, who has an affair with Nyarai, who in turn sleeps with Themba, and many long distance drivers (Masuku, 2009). The chain of sexual relationships suggested, demonstrates the potential the practice has in transmitting the disease.

Patriarchal Society

The Zimbabwean society has been largely identified as one where community priorities came first before individuals' (Rodriguez, ND; Dunkle et al, 2008; Mhaka, 2010). For this reason

traditional norms and values which are revered by the community which in most case are in favour of men are likely to act as a vehicle for HIV/AIDS transmission among women through their partners. The story of Thandiwe from the Midlands province of Zimbabwe can be such an example. She now has full blown AIDS, and concedes that she knew that her husband was promiscuous for a long time, but neither could she divorce him nor insist on condom use during sexual intercourse (Mhaka, 2010). This is a likely common problem that many women in Zimbabwe could be finding themselves in especially those in marriage.

Marital status and HIV infection in SSA

Research carried out in the SSA region greatly suggests that there is a strong association between HIV/AIDS infection and marital status (Shisana et al., 2004; Reither, 2009). However, it has remained unclear which marital category is associated with highest HIV/AIDS prevalence. Women in marriage might be forced into sexually risky behaviour by a variety of reasons. Some might be going through abuse in their marriages. This might influence them to take solace in having extra marital affairs, expecting to get the love and appreciation they believe to be missing in their marriages. Other possible factors to contribute to high HIV/AIDS prevalence among currently married women include frequency of sex, and less protected sex (Slaymaker et al, ND). Higher coital frequency is likely to increase the risk of HIV/AIDS infection, the likely change of sexual partners by individuals by the time they marry increases the number of the individual's lifetime partners, and chances of no condom use is likely higher in marriages than outside marriage (Gregson et al, 2007; Slaymaker et al, ND).

Never married women who have had sex are the women of interest for this category in this study. Possible reason explaining why never married women are likely to have low risk of HIV/AIDS infection compared to currently married women is the assumed likely control they have over their sexuality relative to the latter. This possibly empowers them to be able to negotiate condom. Likely contributing factors to HIV/AIDS infection among these women are MCP practice, and inconsistent condom use especially in case of regular partners.

Formerly married women could have moved out of marriage as a way to avoid HIV/AIDS infection among other reasons. This is a strategy termed "negative selection" (Reniers, 2008; Kaler, 2004; Poulin, 2007). The aggrieved spouse may seek divorce as a measure to avoid further likely risk of HIV/AIDS infection through the spouse. However there is a possibility that individuals who divorced may most likely consider remarrying partners they perceive to have lower risk of HIV/AIDS infection, a strategy termed "positive selection" (Reniers, 2008). Possible factors likely to increase risk of HIV/AIDS infection among formerly married women are: the likelihood of more lifetime sexual partners, MCPs and also likely inconsistent condom use in case of a regular partner.

Sex Risky Behaviour Factors

Condom use

Condom use is today's strongest prevention strategy from HIV/AIDs infection (Pulerwitz et al., 2002, Mutheng, 2009). The argument is that consistent condom use during sexual intercourse always ensures that there is reduced seminal fluids interchange between the sexual partners. A research in Manicaland province of Zimbabwe noted that though casual sex has remained highly prevalent among men, however, because of consistent condom use (41.6% in 1998, 42.2% in 2003), HIV/AIDS prevalence has been declining (Gregson et al, 2007). Women's power to negotiate safe sex can be compromised by many factors like region's gender preferences, their wealth status and educational level to mention some.

Number of sexual partners including regular partner

Many sexual partners by an individual is a high HIV/AIDS risk behaviour, though the possibility of risk of HIV/AIDS should be acknowledged to exist in cases of even one sexual partner who is infected with the disease. Therefore, it is likely that the more the number of sexual partners an individual might have, be it at a time (MCPs), or over a period of time is highly associated with HIV/AIDS infection. In a study in Zimbabwe, women reporting many sexual partners had high risk of HIV/AIDS infection (Gregston et al, 2007). Less sexual partners in an individual's life time is likely to reduce the chances of meeting an HIV/AIDS infected partner.

DATA AND MEASURES

This study was conducted using Zimbabwe Demographic Health Survey (ZDHS) data for 2005-06 for women in the reproductive age. The ZDHS data of 2005-06 is a national survey, representative of all Zimbabwean women aged between 15-49 years and men aged between 15-54 years. It is the fourth national survey after those in 1988, 1994 and 1999, and is the only complete national survey so far to conduct an HIV/AIDS test (Central Statistic Office Zimbabwe, 2006). The 2002 Zimbabwe Master Sample (ZMS02), developed by Central Statistics Office (CSO) after 2002 population census was used as the sampling frame. For all the ten provinces of Zimbabwe a total of 34 strata were formed. Among the eight provinces which are not entirely urban i.e. Matabeleland North, Matabeleland South, Midlands, Masvingo, Manicaland, Mashonaland East, Mashonaland central and Mashonaland West, each was stratified into four. The stratifications were communal, large scale commercial farming, urban and semi-urban areas, and, small commercial farming areas and resettlement areas. For the provinces which are entirely urban i.e. Bulawayo and Harare one stratum was formed for each.

A total of 10,800 households were identified for the sample. However, by the time of the sampling 9,778 households were currently occupied, and by the time of the interview 9,285

households were only successfully interviewed. This produced a 95% household response rate. The main reason for the shortfall was that by the time of the interview some household in the sample were extinct. The survey interviewed 8,907 women from the initially identified 9870, giving a 90% response rate. Of the 8761 men identified, 7175 were successfully interviewed, yielding an 82% response rate. The main reason for non-response from the sampled women and men was the non availability of these expected respondents at their homes during repeated visits. Men were more frequently absent for longer periods from their homes than women, contributing to a lower response rate for men than women.

The survey covered topics like; fertility, sexuality, mortality, family planning, breast feeding, health, HIV/AIDS prevalence and other sexually transmitted diseases (CSO, 2009).

A sub-sample of over 4,491 women was tested for HIV infection, and their privacy is strictly protected through CASEID technique. This is the population of interest in this study. The data was produced through merging of the individual's questionnaire data file with the HIV data file. The merging technique applied is common identification method. This data merging method ensured the matching of results of blood test from the HIV data file with the relevant women tested for HIV from the individual data file.

Outcome variable of the study was HIV/AIDS status with a binary outcome of either HIV positive or negative. The main explanatory variable is marital status. Three different categorizations of this variable shall be made. In the first instance marital status shall be categorized as; never married, currently married, and formerly married. Where never married refers women who have had sex but have remained single. Currently married women are individuals currently in any form of union. Formerly women shall include separated, devorced and widowed women. In the second instance marital status shall be categorized as; never married, currently married, separated/devorced, and widowed: and in the third instance as; never married, and ever married. Ever married shall include all women in marriage at one point in their lives i.e. currently married, separated/devorced, and widowed women. The association between marital status and HIV/AIDS status, controlling for other factors was tested firstly with marital status categorised as in the first instance. The same association was tested with marital status categorised as in the second and third instances. Variables classified as other are wealth status, educational level, religion, age, Place of residence, Condom use, Husband has STI?, and number of sexual partners including regular partner. The characteristic husband has STI?, was only applicable

Descriptive statistics in form of cross tabulations and tables were used to describe and portray the prevalence of HIV/AIDS infection among women who are never married, currently married, separated/devorced, and widowed. A Bivariate analysis was performed for all the variables considered for the model, in order to examine their unadjusted odds. This study used ordinary logistic regression model to isolate the effects of marital status and other various socioeconomic and demographic characteristics on HIV/AIDS status.

The model is stated below as,

$$\textit{In Prob}[HIV= Y/HIV=N]=\alpha+\beta_1 M.S+\beta_2 W.S+\beta_3 E.L+\beta_4 R+\beta_5 A+\beta_6 P.R+\beta_7 C.U+\beta_8 C.R+\beta_9 H+\beta_{10} S.P$$

Whereas:

Xi= marital status
$\mathbf{X_2}$=wealth status
$\mathbf{X_3}$=Educational level
$\mathbf{X_4}$=Religion
$\mathbf{X_5}$=Age
$\mathbf{X_6}$=Place of residence
$\mathbf{X_7}$=Condom use?
$\mathbf{X_8}$=Husband has STI?
$\mathbf{X_9}$= One sexual partners?

This equation models the probability of an HIV-positive result (HIV=Y) versus an HIV-negative result (HIV=N) as a function of a set of explanatory variables outlined in the model. Whereas α is the constant, which indicates the probability of rejecting the hypothesis being tested; and the Xi are the set of explanatory variables.

The study used STATA version 11 for data manipulation. All tests were done at 5% significance level and at a confidence interval of 95%. For all associations tested between variables in the study, odds ratios (ORs) were used to interpret the strengths of the respective associations.

RESULTS

Percentage HIV/AIDS infection according to marital status among women: Table1

Currently married women have lowest HIV/AIDS prevalence of 18.02% compared to never married women's 27.04%, and this is the group with second lowest HIV/AIDS prevalence. Highest HIV/AIDS prevalence is among widowed women who have a prevalence rate of 58.85%, which is more than double the prevalence rate for women who are currently in marriage. This trend of HIV/AIDS prevalence distribution remained constant among all other characteristics. Among all the categories of other characteristics i.e. wealth status, education level, religion, place of residence, age groups, condom use, husband has STI, and number of sexual partners including husband, women in marriage maintained lowest HIV/AIDS prevalence. Never married women consistently remained second, separated/devorced third, and widowed women always had the highest HIV/AIDS prevalence (Table 1).

Bivariate Analysis

Unadjusted odds ratios for marital status: Table 2

Being married was significantly associated with the women's HIV/AIDS status, confidence interval (CI) 0.44-0.84. The odds of being HIV/AIDS infected were 0.61 lower for married women relative never married women. Separated/devorced women had 2.09 higher odds of being HIV positive relative to never married. Their association with HIV/AIDS was not significant with a CI of 0.77-1.68. Widowed women had a highly significant association with HIV/AIDS status CI 2.54-5.87. The odds of having HIV/AIDS infection among this group of women was 3.86 higher than for never married women. Among the other variables, wealth status had women classified as rich being significantly associated with HIV/AIDS. These women had 1.30 higher odds of being HIV positive relative to women classified as poor. Women reporting using condoms surprisingly had higher odds of being HIV positive compared to women not using condoms, and the association was highly significant as well. Another outcome of interest was from the characteristic of religion, where Christians whose religion is believed to encourage practices that greatly reduce risk of HIV/AIDS infections had 2.44 higher odds of being HIV/AIDS infected relative to women who believe in African Traditional religion. The association was highly significant, CI 1.49-4.00.

Multivariate Analysis

Adjusted odds ratios for marital status as categorised in the first instance: Table 3

In all the four models controlling for various factors, the association between HIV/AIDS status of women and being either married or formerly married was highly significant. The odds of having HIV/AIDS was 0.55 with CI of 0.42-0.72, 0.65 with CI 0.50-0.84, 0.50 with CI 0.39-0.63 and 0.58 with CI 0.45-0.73 lower compared to never married for models 1, 2, 3, and 4 respectively. Contrary to this, the odds of HIV infection were always higher for formerly married women when compared to never married women in the same 4 models. The highest odds were from model 2, where chance of being HIV positive were 2.44 higher for formerly married women compared to never married, with a CI of 1.44-2.82

Adjusted odds ratios for marital status as categorised in the second instance: Table 4

In model 1, when controlling for all other factors considered for the study, both currently married and widowed women were very much significantly associated with HIV/AIDS status, CIs of 0.38-0.79 and 1.97-4.99 respectively. The former had 0.55 lower odds and the latter 3.13 higher odds of HIV/AIDS infection relative never married women. However separated/devorced women had an insignificant association with HIV/AIDS Status, CI 0.70-1.60. The odds of HIV/AIDS infection among these women was 1.07 higher compared to never married women. Controlling for socioeconomic characteristics in model 2, currently married and widowed

women still had significant associations with HIV/AIDS status. Currently married women still had lower odds, though they had slightly increased to 0.61 and widowed still had higher odds but reduced to 2.66 of HIV infection all relative to never married women. Models 3 and 4 controlled for demographic, and sex behaviour characteristics respectively. The pattern did not deviate from what came from the other first two models. Odds of HIV/AIDS infection among women remained lower for currently married, slightly higher for separated/devorced, and very high for widowed all relative to never married.

Adjusted odds ratios for marital status as categorised in the third instance: Table 5

Realising the possibility that formerly married women like separated, devorced and widowed who are infected with the HIV/AIDS virus might have acquired the virus in marriage, the paper also analysed HIV infection after re-categorising marital status into never married and ever married. The latter category includes both currently married women and all formerly married women. Models 1, 2, 3 and 4 were run controlling for all other characteristics, socioeconomic characteristics, demographic characteristics, and sex behaviour characteristics respectively as in the multivariate analysis in Table 2.

Results from model 1 suggest that there is a significant association between women ever married and HIV/AIDS status, with a very precise CI of 0.44-0.92. The odds of being infected with the HIV virus is 0.64 lower for women ever married relative to never married. This same association was very significant in model 3 with CI 0.44-0.83. The odds of HIV infection among ever married women were reduced to 0.60 lower relative to never married women. In Models 2 and 4 the associations between being ever married and HIV/AIDS status were not significant with CIs of 0.54-1.12 and 0.53-1.02 respectively. However, as in models 1 and 3, the odds of HIV/AIDS infection for ever married women in models 2 and 4 were 0.80 and 0.73 lower respectively, compared to never married women.

Table 1 Percentage distribution of HIV/AIDS prevalence for respondents by marital status

		Marital Status			
Characteristics	% of Respondents by characteristic	Never married % HIV positive	Currently married % HIV positive	Separated /Divorced % HIV positive	Widowed % HIV positive
Wealth status					
Poor	47.98	28.21	17.00	25.00	51.51
Medium	18.26	25.53	17.41	39.74	70.73
Rich	33.7	26.76	21.15	29.46	62.31
Educational level					
No primary	36.26	38.29	15.67	20.16	58.25
≥ primary < completed secondary	61.00	23.81	20.26	34.76	61.76
Completed secondary &above	2.74	-	13.04	30.00	-
Religion					
Traditional	4.13	-	8.13	22.22	42.85
Christianity	95.07	25.84	18.67	28.89	58.06
Islam and others	0.80	-	14.81	-	-
Age					
15-24 years	38.62	20.14	14.44	21.91	53.67
25-34 years	45.60	46.81	22.29	38.78	67.01
35-49 years	15.78	40.00	15.66	30.95	50.70
Place of residence					
Urban	25.54	25.42	19.95	30.68	60.45
Rural	74.46	27.73	17.92	29.39	58.43
Condom use					
No	45.54	28.28	16.11	25.17	55.56
Yes	54.46	25.77	20.24	32.87	60.58
Number of sexual partners including regular partner					
More than one	55.26	27.27	19.33	33.03	66.67
One	44.74	26.67	16.98	24.66	-
Total		27.04	18.40	29.7	58.85

Table 2 Unadjusted odds ratio for women marital status and HIV/AIDS infection

CHARECTERISTICS		
	UOR	Confidence Interval
Marital Status		
Never married	RC	
Currently married	0.61	0.44-0.84**
Separated/Divorced	2.09	0.77-1.68
Widowed	3.86	2.54-5.87***
Wealth Status		
Poor	RC	
Medium	1.20	0.99-1.45
Rich	1.30	1.11-1.53**
Education Level		
No primary	RC	
≥primary<completed secondary	1.26	1.08-1.46**
completed secondary & above	0.67	0.39-1.18
Religion		
Traditional religion	RC	
Christianity	2.44	1.49-4.00***
Islam and Others	1.76	0.61-5.15
Age		
15-24 years	RC	
25-34 years	1.77	1.51-2.07***
35-49 years	1.27	1.02-1.60*
Place of residence		
Urban	RC	
Rural	0.91	0.77-1.07
Condom use		
No	RC	
Yes	1.35	1.16-1.55***
Number of sexual partners including regular partner		
More than one	RC	
One	0.77	0.67-0.89***

P<0.001***, p-value<0.010**, p-value<0.050* CI=Confidence Interval

Table 3 Multivariate analysis models' results table for marital status as categorised in the first instance

CHARECTERISTICS	Model 1		Model 2		Model 3		Model 4	
	AOR	CI	AOR	CI	AOR	CI	AOR	CI
Marital Status								
Never married	RC		RC		RC		RC	
Currently married	0.55	0.42-0.72***	0.65	0.50-0.84***	0.50	0.39-0.63***	0.58	0.45-0.73***
Formerly married	2.02	1.44-2.82***	2.44	1.77-3.37***	1.86	1.37-2.52***	2.05	1.51-2.78***
Wealth Status								
Poor	RC		RC					
Medium	1.10	0.89-1.37	1.11	0.89-1.38	-	-	-	-
Rich	1.69	1.29-2.22***	1.30	1.08-1.56***				
Education Level								
No primary	RC		RC					
≥primary<completed secondary	1.21	1.01-1.46	1.17	0.98-1.41	-	-	-	-
completed secondary & above	0.54	0.30-0.97*	0.58	0.33-1.06*				
Religion								
Traditional religion	RC		RC					
Christianity	1.99	1.19-3.34**	2.06	1.24-3.41**	-	-	-	-
Islam and Others	1.73	0.58-5.21	1.60	0.33-4.78				
Age								
15-24 years	RC				RC			
25-34 years	1.95	1.63-2.34***	-	-	1.88	1.60-2.31***	-	-
35-49 years	1.47	1.14-1.89**			1.27	1.01-1.61*		
Place of residence								
Urban	RC		-	-	RC		-	-
Rural	1.40	1.06-1.86*			0.90	0.76-1.07		
Condom use								
No	RC		-	-	-	-	RC	
Yes	1.30	1.11-1.54**					1.29	1.11-1.50**
Number of sexual partners including regular partner							RC 0.78	0.67-0.90**
More than one	RC		-	-	-	-		
One	0.72	0.16-0.85***						

p<0.001***, p<0.01**, p<0.05*, CI=Confidence Interval

Table 4 Multivariate analysis models' results for marital status as categorised in the second instance

CHARECTERISTICS	Model 1		Model 2		Model 3		Model 4	
	AOR	CI	AOR	CI	AOR	CI	AOR	CI
Marital Status								
Never married	RC		RC		RC		RC	
Currently married	0.55	0.38-0.79**	0.67	0.47-0.94*	0.51	0.37-0.72***	0.61	0.44-0.85**
Separated/Divorced	1.07	0.70-1.63	1.20	0.79-1.81	1.03	0.69-1.52	1.14	0.77-1.69
Widowed	3.13	1.97-4.99***	4.14	2.66-6.44***	3.31	2.15-5.10***	3.70	2.42-5.67***
Wealth Status								
Poor	RC		RC					
Medium	1.10	0.89-1.37	1.11	0.89-1.38	-	-	-	-
Rich	1.69	1.29-2.22***	1.30	1.08-1.56***				
Education Level								
No primary	RC		RC					
≥primary<completed secondary	1.21	1.01-1.46	1.17	0.98-1.41	-	-	-	-
completed secondary & above	0.54	0.30-0.97*	0.58	0.33-1.06*				
Religion								
Traditional religion	RC		RC		-	-	-	-
Christianity	1.99	1.19-3.34**	2.06	1.24-3.41**				
Islam and Others	1.73	0.58-5.21	1.60	0.33-4.78				
Age								
15-24 years	RC				RC			
25-34 years	1.95	1.63-2.34***	-	-	1.88	1.60-2.31***	-	-
35-49 years	1.47	1.14-1.89**			1.27	1.01-1.61*		
Place of residence								
Urban	RC		-	-	RC		-	-
Rural	1.40	1.06-1.86*			0.90	0.76-1.07		
Condom use								
No	RC		-	-	-	-	RC	
Yes	1.30	1.11-1.54**					1.29	1.11-1.50**
Sexual exclusivity								
No			-	-	-	-	RC	
Yes	0.72	0.16-0.85***					0.78	0.67-0.90**

p<0.001***, p<0.01**, p<0.05*, CI=Confidence Interval

Table 5 Multivariate analysis models 'results for marital status as categorised in the third instance

CHARECTERISTICS	Model 1		Model 2		Model 3		Model 4	
	AOR	CI	AOR	CI	AOR	CI	AOR	CI
Marital Status								
Never married	RC		RC		RC		RC	
Ever married	0.64	0.45-0.93*	0.80	0.57-1.12	0.61	0.44-0.85**	0.73	0.52-1.02
Wealth Status								
Poor	RC		RC					
Medium	1.11	0.89-1.38	1.13	0.91-1.39	-	-	-	-
Rich	1.69	1.29-2.19***	1.29	1.07-1.54**				
Education Level								
No primary	RC		RC					
≥primary<completed secondary	1.17	0.97-1.40	1.12	0.94-1.34	-	-	-	-
completed secondary & above	0.51	0.29-0.93*	0.55	0.31-0.97*				
Religion								
Traditional religion	RC		RC					
Christianity	2.08	1.25-3.45**	2.17	1.32-3.57**	-	-	-	-
Islam and Others	1.60	0.54-4.79	1.51	0.51-4.47				
Age								
15-24 years	RC				RC			
25-34 years	1.91	1.60-2.28***	-	-	1.83	0.44-0.85***	-	-
35-49 years	1.53	1.19-1.96**			1.34	1.07-1.69*		
Place of residence								
Urban	RC		-	-	RC		-	-
Rural	1.43	1.09-1.89*			0.92	0.78-1.09		
Condom use								
No	RC		-	-	-	-		
Yes	1.38	1.17-1.62***					1.35	1.16-1.56***
Sexual exclusivity								
No	RC		-	-	-	-		
Yes	0.70	0.98-0.82***					0.75	0.65-0.87***

p<0.001***, p<0.01**, p<0.05*, CI=Confidence Interval

DISCUSSION

The purpose of this study was to examine if marriage could be a viable prescript for reducing HIV/AIDS infection, in a population where heterosexual intercourse is the main mode of transmission. To explore this, the study estimated and analysed HIV/AIDS prevalence among women according to their marital status. The study argues that; low HIV/AIDS prevalence among currently married women compared to women in any other category of marital status, suggests the viability of marriage as a behavioral strategy in reducing HIV/AIDS infection among Zimbabwean women. The main limitations of the study have been temporality and reverse causation. The study uses cross sectional survey data; therefore it is not easily clear what preceded the other between current HIV status and current marital status of individual women. The study assumes that current marital status of women, which is the exposure of interest, particularly in the case of HIV positive individuals preceded their current HIV/AIDS status, but the reverse could also be true for some women. Hence, the study cannot establish with certainty for example, whether formerly married women like separated/devorced or widowed who are HIV positive were infected whilst still single, in marriage, or after exiting marriage.

The purpose of analysing the association between marital status and HIV/AIDS status using three different categorizations of marital status was meant to find a better way around these limitations. By so doing, the study sought to find if in all the three cases the findings will remain consistent or some changes will manifest in multivariate analysis with each re-categorisation of marital status. The findings remained consistent, thereby strongly suggesting that marriage is highly protective against HIV/AIDS infections among Zimbabwean women. Patterns of HIV/AIDS prevalence distribution by marital status indicate that currently married women had lowest prevalence rates both overall as well as according to each characteristic. In all multivariate analysis models, individuals in the category which include currently married women always had lowest risk of HIV/AIDS infection.

In the case of marital status being categorized as never married, currently married, and formerly married, findings that lowest HIV/AIDS prevalence was lowest among currently married could be challenged by such arguments like; it is highly possible that formerly married women especially widowed could have been infected in marriage. They were married, and only became categorized as formerly after their partners died. It therefore makes more sense to associate their risk of HIV/AIDS infection with marriage. When categorizing marital status according to more specific categorizes of never married, currently married, separated/devorced and widowed, this last group of women had highest risk of HIV, and such risk could be highly associated with marriage. Therefore low HIV/AIDS prevalence among currently married is because women who have highest risk of HIV/AIDS infection were excluded from the category yet in fact it is where they likely got the risk. Hence, the need to make an analysis with marital

status categorized as; never married and ever married. This way the study brought widowed and separated/devorced women into the category of ever married which would also include currently married women. The significance of the finding obtained using this categorization of marital status is that by suggesting that there is lower risk of HIV/AIDS infections in the ever married relative to never married, these findings largely weakened the view that lowest HIV/AIDS infections among currently married could have been a result of the benefit derived from the exclusion of formerly married women from this category. Such study's findings conquer with research findings done in South Africa by Shisana et al in 2004.

CONCLUSIONS

Marriage can be a possibly behavioural practice that can be recommended in strategizing towards reducing HIV/AIDS infections among Zimbabwean women. The fact that the study's findings remained consistent in suggesting that lowest HIV/AIDS prevalence is among married women strongly backs up this conclusion. However, marriage on its own can hardly be effective in successfully combating HIV/AIDS infections. In order for marriage to effectively work in reducing HIV/AIDS infections, other behavioural practices need to be concurrently promoted. These practices include, having one consistent sexual partner, as opposed to the practice of multiple concurrent partnerships. Consistent condom use especially before marriage as well as in case of sexual intercourse with irregular partners, and regular HIV testing can also be complementary to marriage.

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