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Young Women's Marital Status and HIV Risk in Sub-Saharan Africa: Evidence from Lesotho, Swaziland and Zimbabwe

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YOUNG WOMEN'S MARITAL STATUS AND HIV RISK IN SUB-SAHARAN AFRICA: EVIDENCE FROM LESOTHO, SWAZILAND AND ZIMBABWE[1]

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Abstract

This paper examines whether marriage increases the risk of HIV infection among women aged 15-24 in Lesotho, Swaziland and Zimbabwe. We find that in all the three countries, the risk of infection is significantly lower for never-married young women than ever-married young women; however, the difference in risk disappears when we control for age, educational attainment, household wealth, and area of residence. Thus, our result highlights the importance of socio-economic and demographic factors in analyzing the link between marital status and HIV risk among young women. Particularly, our findings show that age and education play a crucial role in determining the level of HIV/AIDS risk for young women. The result also implies that marriage as an institution does not necessarily elevate the risk of HIV infection among young women.

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1. Introduction

DATA from the population-based Demographic and Health Survey (DHS) for Lesotho, Swaziland and Zimbabwe show that the percentage of young women who are HIV positive varies by marital status. Table 1 shows the HIV prevalence rates by marital status for women aged 15-24 in the three countries. The data reveal an important point: in all the countries, the prevalence rate for never-married women is lower than the rate for ever-married (i.e., currently or formerly married) young women.[5] Specifically, the prevalence rate for ever-married women is about 1.7 times the rate for never-married women in Swaziland, and about twice the rate for never-married women in Lesotho and Zimbabwe. Table 1 also shows that the difference in prevalence rates between never-married and formerly-married women is much higher: the prevalence rate for formerly-married women is about 2.8 times the rate for never-married women in Swaziland, about 3.3 times for young women in Lesotho, and about 5.5 times higher for young women in Zimbabwe. Indeed, based on this data, one may conclude, albeit erroneously, that marriage as an institution increases the risk of HIV infection for young women. For instance, based on unadjusted data on HIV prevalence and incidence rates, some have concluded that marriage increases the risk of HIV infection for women. For example, the 2004 issue of the Report on the Global AIDS Epidemic, published by UNAIDS notes on page 40 that:

> *Marriage and other long-term, monogamous relationships do not protect women from HIV. In some settings, it appears marriage actually increases women's HIV risk. In some African countries, adolescent, married 15-19 year-old females have higher HIV infection levels than non-married sexually active females of the same group.*

Table 1: HIV Prevalence Rates by Marital Status for Women Aged 15-24

Marital Status	**Lesotho (n= 1480)**		**Swaziland (n=2139)**		**Zimbabwe (n=3412)**	
	Number	*% HIV Positive*	*Number*	*% HIV Positive*	*Number*	*% HIV Positive*
Never-Married	852	11	1,893	21	1,901	7
Ever-Married	528	22	246	36	1,511	15
Currently Married	483	18	228	34	1292	14
Formerly Married	45	60	18	56	219	23

[5] Ever-married women refer to women who are currently married or have been married in the past, i.e., divorced, separated or widowed women. This type of marriage classification is standard in the literature, for example, Clark (2004).

It is important to note that other socio-economic factors, such as educational attainment and income levels may have a significant impact on HIV risk. For example, if education reduces HIV risk, and younger never-married women are more likely to be educated than ever-married women, then it is possible that never-married women have lower HIV risk levels because they are on the average more educated, and not because they have never been married. Thus, here, difference in the level of risk faced by the two marital groups may be explained by the difference in educational attainment, and not the difference in marital status.

This paper examines whether there is a significant difference in the risk of HIV infection faced by never-married and ever-married young women in Lesotho, Swaziland and Zimbabwe, after taking into consideration other demographic and socio-economic factors that affect a person's HIV status. Specifically, we ask: suppose one randomly selects two young women who are different in terms of marital status—i.e., one is never-married and the other is formerly or currently married— but the women are similar in terms of age, wealth, educational attainment, income, and location of residence, is the risk of HIV infection different for these two women? To answer this question, we estimate a probit model where we control for the factors listed above. We find that the answer to the question posed above is no—in all the three countries, there is no significant difference in the probability of HIV infection for ever-married and never-married younger women.

This paper is important for at least two reasons. First, there is a profound interest among academics, policymakers and civil society about the relationship between women's marital status and HIV risk. Specifically, the discussion has focused on whether marriage provides protection for women against HIV/AIDS or whether it increases the risk of HIV infection, particularly for younger women (Clark, 2004; UNAIDS, 2004). The paper contributes to this discussion by drawing attention to the relevance of other socioeconomic factors in this important debate. Specifically, the paper highlights the significance of age and education in determining the HIV/AIDS risk of young women. The second contribution of the paper is that it provides a rigorous analysis of the HIV/AIDS situation of young women in three of the highest prevalence rate countries in the World. To the best of our knowledge, this is the first study to use a nationally representative data to analyze the relationship between HIV status and marital status in Lesotho, Swaziland and Zimbabwe.[6]

The remaining of the paper is organized as follows: Section 2 provides a brief discussion of the relationship between Marriage and HIV risk, Section 3 describes the data we use for our analysis and the variables included in

[6] According to UNAIDS (2010), the top five highest HIV prevalence rate countries are Swaziland (27%), Botswana (25%), Lesotho (25%), South Africa (21%) and Zimbabwe (18%). However, as at now, the DHS does not have HIV data for Botswana and South Africa.

the regressions, Section 4 presents the estimation results and Section 5 concludes.

2. Marriage and HIV Risk: A Brief Discussion

Research on marital status and health has established an inverse relationship between marriage and poor health for both men and women. Married women have better health outcomes, including lower mortality rates than unmarried women (Gove, 1973; Morgan, 1980; Verbrugge, 1979). In addition, marriage regulates an individual's daily affairs and behavior, and it also provides a well-defined social role in society (Hughes and Gove, 1981). As a consequence, married people are less likely to engage in risky sexual behavior and generally have a healthier life style than the unmarried (Gove, 1973; Hughes and Gove, 1981; Umberson, 1987).

An important question is whether this positive association between health status and marriage extends to HIV/AIDS. Our review of the literature on the relationship between HIV/AIDS status and marital status revealed that most of the studies focus on younger women, and the results are conflicting. For example, using data from two cities, Kisumu in Kenya and Ndola in Zambia, Clark (2004) finds that the risk of HIV infection is significantly higher for ever-married than never-married young women. One of the explanations given for the elevated risk among married younger women is that generally, married women want to have children and therefore are more likely to engage in frequent unprotected sex.[7] Another reason is that the husbands of married younger women are on the average older than the sexual partners of never-married young women, and the HIV prevalence rates are higher for older men than younger men.[8] In contrast to Clark (2004), Bongaarts (2006) finds that ever-married younger women are less likely to be HIV positive than their counterparts who have never married, in Kenya and Ghana. He argues that although the HIV prevalence rates are higher for older men than younger men, the level of infectivity, defined as the rate of transmission of the HIV virus from an infected to an uninfected person declines over time. As a consequence, although older men are more likely to be infected than younger men, infected younger men are more likely to infect their partners than infected older men. Thus, he explains the elevated risk faced by never-married younger women by arguing that their partners are younger, change partners frequently, and

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[7] For example about 68% of married women aged 15-19 years in Kenya reported that they had sex in the previous week, compared to only 17% for unmarried women. Also, about 64% of married women reported having unprotected sex, compared with about 5% for unmarried girls (Bruce and Clark, 2003).

[8] Kelley et al. (2003) report that among women aged 15-19 years old in Rakai, Uganda, the age difference between marital partners is higher (more than 5 years older) than the sexual partners of single women.

have a higher HIV transmission rate. Note that even though the results from Clark (2004) and Bongaarts (2006) studies are conflicting, they have one thing in common: they both attribute the difference in risk levels to difference in sexual practices among the marital groups.

This paper takes a different approach. Instead of focusing on sexual behavior, we examine whether differences in socio-economic and demographic factors explain the difference in risk levels faced by the two marital groups. One advantage of focusing on socio-economic and demographic factors is that they are observable/verifiable characteristics, and can be easily quantified. In contrast, sexual behavior is not easily quantifiable and also requires the disclosure of sensitive information. As a consequence, data on measures of sexual behavior are likely to exhibit large measurement errors, and therefore including these factors as explanatory variables in regressions can produce biased estimates and unreliable inferences.[9] Note that obtaining accurate results is critical because the results have a potential impact on policy formulation. For example, the findings may have significant input in the design of prevention programs or it may influence the allocation of health care funds. Another issue is that it is relatively easier to reach high-risk populations if the individuals are identified by characteristics that are easily observable. Thus, in order to minimize measurement errors and also carry out an analysis that will facilitate the design of HIV prevention programs, our empirical analysis employs variables that are observable and easily quantifiable.

3. The Data and the Variables

Our analysis utilizes data from the Demographic Health Survey (DHS), the only survey that collects national, population-based HIV data in several countries.[10] The DHS data have several advantages: the sample sizes are large (usually between 5000 and 30,000 households); the survey has about 150 socioeconomic and demographic variables; the data are available for a large set of countries (about 82 countries); and the data are standardized and therefore comparable across country. Although the DHS has been around since 1988, the survey started collecting data on HIV in 2001. We use the 2006 survey for Zimbabwe and Swaziland, and the 2004 survey

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[9] Curtis and Sutherland (2004) reviewed the data on sexual behavior in 31 large population based surveys in sub-Saharan Africa and Latin America and the Caribbean. They found large inconsistencies in the data and concluded that the data was unreliable.

[10] Traditionally, national HIV prevalence estimates have been derived from data from sentinel surveillance systems that monitor HIV rates among pregnant women and high-risk populations. By collecting blood for HIV testing from representative samples of the population of men and women in a country, DHS provides nationally representative estimates of HIV rates. For more information on the DHS, see http://www.measuredhs.com/aboutsurveys/dhs/start.cfm.

for Lesotho.[11] All the adults who participated in the household survey were eligible for HIV testing. Participation in HIV testing was voluntary. To ensure confidentiality, case numbers (and not names) were used in linking the HIV test results to individual and household characteristics. The response rates are quite high: 87% for Swaziland, 84% for Lesotho and 82% for Zimbabwe. We note that since the HIV test is done voluntarily, respondents self-select into the sample, and this may introduce a bias. Specifically, there could be a potential bias if the characteristics of those who agreed to be tested are systematically different from those who refused testing. The surveys are analyzed by DHS statisticians to determine whether there is a bias from nonparticipation. For the countries in our paper, there was no evidence of such a bias. Following the literature, we focus on women aged 15-24 years.

The dependent variable, *hiv*, takes on value 1 if the individual is HIV positive, and zero otherwise. In selecting the control variables, we draw from the literature on the determinants of HIV infection rates. Specifically, we include the following variables in our regressions: age, defined as age in years; *educ*, measured by years of schooling, *wealth*,[12] reflects household wealth and it is measured by the DHS wealth index, *urban*, takes on value 1 if the individual lives in an urban area; and dummy variables that reflect the region of residence. The summary statistics of the variables are reported in Table 2.

TABLE 2: SUMMARY STATISTICS FOR WOMEN AGED 15-24

Variable	**Lesotho**		**Swaziland**		**Zimbabwe**	
	Mean	*St. dev*	*Mean*	*St. dev*	*Mean*	*St. dev*
HIV/AIDS (%)	15.3	36.0	22.7	41.9	10.7	30.9
Urban (%)	21.8	41.3	25.5	43.6	35.3	47.8
Never Married (%)	61.7	48.6	88.5	31.9	55.7	49.7
Education (years)	7.1	2.4	8.0	3.0	8.4	2.0
Age (years)	19.1	2.8	19.1	2.8	19.4	2.8
Wealth Index	100.2	9.7	98.6	9.2	100.7	10.2
No. of Observations	1378		2134		3411	

Table 3 compares the HIV prevalence rates and the mean values of the explanatory variables for never-married and ever-married women. It also

[11] The sampling design and survey implementation procedures for each country are described in the individual country survey reports. See http://www.measuredhs.com/pubs/start.cfm.

[12] The DHS household wealth index is computed based on several factors, including household ownership of consumer durables (e.g., television and bicycles), availability of amenities (e.g., electricity, source of drinking water, and type of toilet facility), and ownership of agricultural land.

reports the p-values of the test of differences in the mean values. There are two notable points. First, the data for the mean values suggest that when we compare the never-married and ever-married younger women, the former have a lower HIV prevalence rate and higher socioeconomic status, namely higher education and wealth than the latter. In addition, the never-married are much younger and tend to reside in urban areas. The second point is that the difference in the prevalence rate between the two marital groups as well as the difference in the average of the control variables is significant at the 1% level. An important question however, is whether the difference in the HIV risk faced by the two marital groups can be explained by the differences in demographic and socioeconomic characteristics. In Section 4, we analyze the extent to which the differences in the socio-economic, demographic and location factors explain the differences in HIV risk faced by the two marital groups. We answer this question in Section 4.

Table 3: HIV prevalent and Socio-economic factors among never-married and ever-married women (aged 15-24)

Variable	Lesotho (n= 1378)			Swaziland (n=2134)			Zimbabwe (n=3411)		
	Never-married (n=850)	*Ever-married (n=528)*	*P-value*	*Never-married (n=1888)*	*Ever-married (n=246)*	*P-value*	*Never-married (n=1901)*	*Ever-married (n=1511)*	*P-value*
HIV positive (%)	11	22	0.000	21	36	0.000	7	15	0.000
Urban (%)	26	14	0.000	27	16	0.000	43	26	0.000
Mean age in years	18	21	0.000	19	22	0.000	18	21	0.000
Mean years of schooling	7.38	6.73	0.000	8.11	7.24	0.000	8.59	8.10	0.000
Mean wealth index	102.03	97.22	0.000	98.96	95.66	0.000	102.95	97.98	0.000

Note: The null hypothesis is that there is no difference in means and the alternative hypothesis is that the difference in means is significantly different from zero.

4. The Model

We estimate a probit model where an individual's HIV status depends on the person's gender, area of residence, marital status, age, level of education and household wealth. The analyses of Asiedu et al. (2010) indicate that it is important to include linear and quadratic terms of *age*, *educ* and *wealth* as explanatory variables in the regressions. We therefore include *age*, *wealth*, *educ*, age^2, $wealth^2$ and $educ^2$ as control variables in our regressions.

Thus following Asiedu et al. (2010), we estimate the probit model for each country:

$$P(hiv_i=1)=F(\alpha+ \beta \text{ never-married} + \lambda_1 \text{urban} + \lambda_2 \text{ age} + \lambda_3 \text{ age}^2 + \lambda_4 \text{ educ} + \lambda_5 \text{ educ}^2 + \lambda_6 \text{ wealth} + \lambda_7 \text{ wealth}^2 + \lambda_8 \text{ regional dummy variables})$$

Note that our parameter of interest is the coefficient of never-married, β. If the estimated value of β is not significant, then it implies that the two marital groups face similar HIV risk. However, if for example the estimated value of β is negative and significant, then it implies that the probability of HIV infection is significantly lower for never-married young women than ever-married young women.

The estimated coefficients from the Probit regressions are reported in Table 4. In order to highlight the importance of the control variables in explaining the difference in HIV risk among the two marital groups, we consider two specifications. Columns 1-3 report the regressions for Specification 1, where the only explanatory variable is the marriage variable, and Columns 4-6 show the regressions where we include control variables. There are two notable points. First, in all the three countries, the estimated value of β is negative and significant at the 1% level in the regressions that exclude the control variables (Columns 1-3). The second notable point is that in the regressions that include the control variables, the estimated values of β turn insignificant for the Lesotho and Swaziland regressions (Columns 4 and 5), and is only marginally significant (i.e., significant at the 10% level) for the Zimbabwe estimations. The loss of significance of the estimated coefficient of the marriage variable suggests that the effect of the demographic and socio-economic factors on HIV risk dominates the effect of marital status on the risk of HIV infection. To further illustrate the importance of the control variables, we report in Table 5 the marginal change in probability evaluated at the multivariate means of the variables, which allows us to "quantitatively" compare the probability of HIV risk for the two marital groups. As shown in Columns 1-3, the difference in the probability of HIV risk infection between the marital groups is significantly large when the control variables are excluded: compared to ever-married young women, the probability of HIV infection is about 10.8 percentage points lower for never-married women in Lesotho, about 14.7 percentage points lower for Swaziland, and about 8.4 percentage points lower for never-married young women in Zimbabwe. The size of the estimated difference in risk decreases substantially (it is about 2 percentage points for Lesotho and Zimbabwe and about 3 percentage points for Swaziland, Columns 4-6) and it is insignificant when control variables are included. This implies that the difference in HIV risk between the two marital groups can be completely explained by socio-economic, location and demographic factors. This finding contrasts with previous studies where the difference in risk is attributed to differences in sexual practices.

Table 4: Probit Regressions: Estimated Coefficients

Variables	**Without Controls**			**Include Controls**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	Lesotho	**Swaziland**	**Zimbabwe**	**Lesotho**	**Swaziland**	**Zimbabwe**
Never Married	-0.444***	-0.441***	-0.458***	-0.102	0.102	-0.134
	(0.000)	(0.000)	(0.000)	(0.353)	(0.339)	(0.086)
Urban				0.209	0.255***	0.159
				(0.087)	(0.005)	(0.303)
Education				-0.007	-0.021	0.062
				(0.921)	(0.545)	(0.345)
Education-squared				-0.003	-0.006**	-0.009**
				(0.450)	(0.015)	(0.039)
Age				0.487	0.792***	0.344
				(0.060)	(0.000)	(0.075)
Age-squared				-0.009	-0.015***	-0.006
				(0.167)	(0.004)	(0.239)
Wealth				0.188***	0.140	0.228***
				(0.010)	(0.072)	(0.010)
Wealth-squared				-0.001**	-0.001	-0.001**
				(0.012)	(0.065)	(0.011)
Constant				-17.03***	-17.11***	-17.29***
				(0.000)	(0.000)	(0.000)
Log likelihood	-575.66545	-1131.4546	-1127.243	-531.609	-948.425	-1074.591
Wald Chi-squared	27.41	24.00	61.82	97.640	294.695	148.97
Pseudo R-squared	0.0241	0.0107	0.0268	0.099	0.171	0.0723
Number of Observations	1,378	2,134	3,411	1,378	2,134	3,411

Notes: The excluded marital category is the ever-married group and this group comprise of currently married and formerly married women. All the regressions include dummy variables for the various regions and are clustered at the household level. Robust p-values are in parentheses. *** implies significant at 1 percent and ** implies significant at 5 percent and ** implies significant at 10 percent.

We now briefly discuss the relationship between the control variables and HIV risk. Table 5 shows that the relationship between urban/rural residence and HIV status varies by country. The estimated coefficient of *urban* is significant at the 1% level for Swaziland, significant only at the 10% level for Lesotho, and not significant for Zimbabwe. All else equal, the probability of HIV infection is about 7 percentage points higher for urban residents than for rural residents in Swaziland, however, the risk of infection is similar for urban and rural residents in Lesotho and Swaziland. Similarly, the effect of household wealth, *wealth*, on HIV status varies by country. Household wealth is positively correlated with HIV status in Lesotho, but does not have a significant effect on HIV status in Swaziland and Zimbabwe. Unlike urban/rural residence and wealth, the effect of age and education on the probability of HIV infection is qualitatively similar in all the three countries—in all the countries, age is positively correlated with HIV risk and education is negatively correlated with HIV risk. For example, all else equal, an additional year of schooling from the average (average for Swaziland=8.0 years; Zimbabwe=8.4 years; Lesotho=7.1 years, see Table 2) will reduce the probability of HIV infection by about 3.7 percentage points for Swaziland, 2 percentage points for Zimbabwe, and about 0.7 percentage points for Lesotho. With regards to age, we find that a one year increase in age from the average (average age is about 19 years for all the countries, see Table 2) will increase the probability of infection by about 7.5 percentage points for Swaziland, 3.6 percentage points for Lesotho and about 2.6 percentage points for Zimbabwe. Indeed, the fact that age and education are the only variables that are significant for all the countries suggest that age and educational attainment are extremely important determinants of HIV risk. We investigated this issue further by running a regression where we included only age and education as control variables. As shown in Table 6, the effect of the marriage variable turns insignificant. This result has several implications. First, it suggests that the difference in risk can be completely explained by educational attainment and age.[13] Recall that in all the countries, ever-married young women are on the average less educated and also older than never-married women (see Table 3). Thus, our result implies that ever-married women face a higher risk of infection because they are less educated and much older than never-married young women. More importantly, it suggests that the institution of marriage does not necessarily elevate the risk level faced by young women.

[13] Education is an important indicator of early marriage. Girls with little or no education are more likely to fall into early marriages for economic security. According to Hargreaves et al (2008), girls who complete secondary school are 4 to 7 times more likely to delay marriage.

Table 5: Probit Regressions: Estimated Marginal Effect

Variables	Without Controls			Include Controls		
	(1)	(2)	(3)	(4)	(5)	(6)
	Lesotho	Swaziland	Zimbabwe	Lesotho	Swaziland	Zimbabwe
Never Married	-0.108***	-0.147***	-0.0841***	-0.0216	0.0261	-0.0220*
	(0.000)	(0.000)	(0.000)	(0.353)	(0.339)	(0.086)
Urban				0.0467*	0.0713***	0.0267
				(0.087)	(0.006)	(0.303)
Education				-0.007***	-0.037***	-0.020***
				(0.0091)	(0.0000)	(0.0001)
Age				0.036***	.0746***	0.026***
				(0.0000)	(0.0000)	(0.0000)
Wealth				0.005**	-0.001	0.001
				(.0445)	(0.959)	(0.456)
Log-likelihood	-575.665	-1131.45	-1127.243	-531.609	-948.425	-1074.591
Wald Chi-squared	27.41	24.00	61.82	97.640	294.695	148.97
Pseudo R-squared	0.024	0.01	0.027	0.099	0.171	0.0723
Number of Observations	1,378	2,134	3,411	1,378	2,134	3,411

Table 6: Relationship between HIV and marital status, with only age and education as control variables

Variables	(1)	(2)	(3)
	Lesotho	Swaziland	Zimbabwe
Never Married	-0.00641	0.0523	-0.0166
	(0.829)	(0.139)	(0.315)
Education	0.0124	-0.00344	0.0191
	(0.548)	(0.790)	(0.201)
Education-squared	-0.00143	-0.00212**	-0.00204**
	(0.300)	(0.0167)	(0.0422)
Age	0.319**	0.607***	0.0518
	(0.0463)	(0.000164)	(0.562)
Age-squared	-0.00680*	-0.0128***	-0.000750
	(0.0731)	(0.000754)	(0.723)
Observations	918	1,391	2,354

Robustness Regressions

We perform two robustness checks. First, Clark (2004) argues that including young teenagers who are not sexually active in the never-married group may bias the results since the risk of infection is almost nonexistent for virgin girls. An option for addressing this concern is to exclude from the sample women who reported that they are virgins. However, this can be problematic because as pointed out earlier, the data are likely to be inaccurate since it entails the disclosure of sensitive information. Hence, to check whether our results are robust, we run regressions for women aged 18-24, to exclude most of the young women who may not be sexually active. We find that our results are robust: for all the three countries, the estimated coefficient of β is not significant; suggesting that the probability of HIV infection is similar for never-married and ever-married women aged 18-24.[14]

For the second robustness regressions, we note that the Probit estimations assume that the error terms follow a standard normal distribution. We therefore estimate a logistic model, which does not assume normality, to test whether our results still hold when we do not assume normality.[15] Another reason for running a logit regression is that the Odds ratios reported by the logistic estimations facilitate the interpretation of our results. Table 7 reports the Odds ratios for the regressions with and without control variables. In all the countries, ever-married women are at least twice more likely to be HIV positive than ever-married women in the regressions that do not include control variables. However, in the regressions that control for the socio-economic factors, the likelihood of infection is similar for never-married and ever-married young women. Thus, our results pass the two robustness checks.

Table 7: Odds Ratios (OR) for women age 15-24

	No Control Variables			Include Control Variables		
	Lesotho	**Swaziland**	**Zimbabwe**	**Lesotho**	**Swaziland**	**Zimbabwe**
OR for Never-married	1	1	1	1	1	1
OR for Ever-married	2.24***	2.09***	2.43***	1.18	0.805	1.25
P-values	(0.000)	(0.000)	(0.000)	(0.405)	(0.228)	(0.148)
95% Confidence Intervals	[1.65-3.03]	[1.57-2.79]	[1.65-3.03]	[0.79-1.75]	[0.56-1.14]	[0.92-1.68]
Observations	1378	2134	3411	1378	2134	3411

[14] To conserve on space, we do not report the regressions, however, they are available upon request.

[15] The assumption underlying logistic estimation is that the error terms follow the standard logistic distribution.

5. Conclusion

This paper examined whether marriage elevates the risk of HIV infection among younger women. We used data from the population based Demographic and Health Surveys and we focused on women aged 15-24 in Lesotho, Swaziland and Zimbabwe. We found that in all the three countries, the probability of infection is significantly lower for never-married young women than ever-married young women. However, the difference in risk disappeared when we controlled for age, educational attainment, household wealth and area of residence, suggesting that the difference in risk between the two marital groups can be explained by the difference in socio-economic, location and demographic factors and not by the fact that the two groups have different marital status. Thus, our findings reiterate the importance of highlighting demographic and socioeconomic variables in analyzing the link between marital status and HIV risk among young women. Our results should be interpreted with caution, in that it pertains specifically to three high prevalent HIV rates countries in Sub-Saharan Africa (SSA). An analysis of other countries in SSA or other low prevalence rate countries may yield different results.[16] As a consequence, our results should not be generalized to other countries, in particular, countries in SSA. This is important because there is a tendency for SSA to be treated as one big country instead of a region with 48 countries.[17]

With regards to policy, it has been noted that young people overall lack accurate and complete information on how to avoid exposure to HIV (UNAIDS 2008). However, there is a widespread belief that younger married women are at a higher risk of HIV infection, and as a consequence, HIV prevention programs have generally paid less attention to never-married younger women. Our results suggest such a policy, if implemented in these three countries may be misguided because all young women in these countries face similar HIV risks. Thus, HIV/AIDS prevention programs should pay particular attention to young women who are older and less educated, since age and education significantly explain the level of HIV risk for young women. The result also implies that demographic, location and socio-economic factors, in particular, age, area of residence, educational attainment, and household wealth, are significant determinants of HIV infection risk, and therefore the importance of these factors should be reflected in HIV prevention programs.[18]

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[16] It is possible that the relationship between the socioeconomic variables and HIV/AIDS risks may be different for high and low prevalent rate countries. For example, when a disease is widespread, more people tend to be knowledgeable of the disease, and therefore access to information about HIV/AIDS would be less relevant.

[17] For example, a New York Times editorial published on February 29, 2004 is titled "HIV Risk Greater for Young African Brides." The article discusses Clark (2004) uses data from 2 cities, Kisumu in Kenya and Ndola in Zambia.

[18] For more on this issue, see Asiedu et al. (2010).

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