Remarriage and Migration in Rural Malawi

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Abstract:
The HIV/AIDS epidemic has had a dramatic effect on marriage patterns in sub-Saharan Africa. Research consistently shows that individuals who are HIV positive are more likely to experience marital dissolution, either through divorce or widowhood. However, much less is known about what happens after marital dissolution. Are HIV positive individuals less likely to remarry than HIV negative? Since at least one spouse typically migrates after a marriage ends, such questions related to remarriage are difficult to address using longitudinal data, due to potential selection bias of migrants. Using a unique set of longitudinal data that includes a sample of migrants, we investigate the relationship between HIV infection and remarriage among rural Malawians. With these data, we examine remarriage patters for HIV positive individuals, and address whether HIV positive individuals who migrate are more likely to remarry than HIV positive individuals who remain in their residence.

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Introduction

The HIV/AIDS epidemic has had a dramatic effect on marriage patterns in sub-Saharan Africa. Several longitudinal studies have found that HIV positive individuals are more likely to experience marital dissolution (either via divorce or the death of a spouse) than the HIV negative (Floyd et al. 2008 for Malawi; Gregory et al. 2007 for Tanzania; Lopman et al. 2009 for Zimbabwe; Porter et al. 2004 for Uganda). Similarly, comparisons of HIV status by marital status in sub-Saharan Africa consistently show that those whose marriage ended in divorce or widowhood are more likely to be HIV positive than the currently married (Boerma et al. 2002 for Tanzania; Bioleau et al. 2009 for Malawi; Gregson et al. 2001 for Zimbabwe; Welz et al. 2007 for South Africa).

But what happens to HIV positive individuals after marital dissolution? Are they likely to remarry, or do they stay single? While research in sub-Saharan Africa has clearly shown that HIV positive individuals are more likely to experience marital dissolution, this only portrays part of the overall relationship between HIV infection and marriage. Discordant couples (i.e. couples where only one partner is infected with HIV) represent the majority of HIV-infected couples in several sub-Saharan African countries (de Walque, 2007). However, it is not clear whether these discordant couples are due to infidelity of one spouse, or because individuals who became infected with HIV from previous spouses then remarry new HIV-negative spouses after their previous marriage dissolves. Research and HIV prevention programs typically focuses on infidelity as the primary source of risk of HIV transmission in marriage, but the possibility of HIV transmission through remarriage is potentially an important component of HIV transmission between spouses. However, research on remarriage is relatively rare in sub-Saharan Africa.

Remarriage is seldom studied in sub-Saharan Africa due to data constraints. Research throughout sub-Saharan Africa shows a link between marital dissolution and migration in sub-Saharan Africa: since marriage often involves the migration of one spouse to the home of the other, marital dissolution often results in the departure of at least one spouse (Arnoldo 2004 for Mozambique; Boerma et al. 2002 for Tanzania; Reniers 2003 for Malawi; Watts 1983 for Nigeria). This link between marriage and migration has made it difficult to examine the relationship between HIV infection and remarriage. Because one spouse typically returns home

after marital dissolution, longitudinal research that investigates the likelihood of remarriage after divorce suffers from potential selection bias. For example, HIV positive individuals who remain in their residence after divorce may be less likely to remarry because others in the village may be aware of their HIV status. However, HIV positive individuals who migrate after divorce may move to areas where others in the village are unaware of their HIV status, and may therefore be more likely to remarry. In this scenario, longitudinal research is thus threatened by a bias if only individuals remaining in their residence after divorce are included in analysis. Data on individuals who migrate after marital dissolution is therefore necessary for an unbiased evaluation of the relationship between HIV infection and remarriage.

In this paper, we use a longitudinal dataset that includes a sub-sample of migrants (i.e. data before and after migration) to examine the relationship between HIV infection and remarriage in rural Malawi. We begin by examining the relationship between HIV infection and marital dissolution. Are HIV positive individuals more likely to experience divorce than the HIV negative? Next, we look at remarriage patterns by HIV status to investigate whether HIV positive individuals are more or less likely to remarry than HIV negative individuals. Finally, because previous research in sub-Saharan Africa has shown that HIV positive individuals are more likely to experience marital dissolution and are also more likely to migrate than those who are HIV negative, we examine whether HIV positive individuals are more likely to remarry if they migrate than HIV positive individuals who stay in the same village.

Background

In Malawi, 11.8% of all adults aged 15-49 are HIV positive (UNAIDS 2008). As with many AIDS-affected countries in sub-Saharan Africa, there are large differences in HIV prevalence between urban centers and rural areas: for the 14% of Malawi residents living in urban areas in 2004, HIV prevalence was approximately 17%, compared with 11% in rural areas (MDHS 2004).

As with other sub-Saharan African countries, research shows that the HIV epidemic has dramatically affected marital patterns in Malawi. Many residents of rural Malawi overestimate their spouse's likelihood of HIV infection- in other words, individuals are more likely to

incorrectly think their spouse is HIV positive than they are to think an HIV positive spouse is negative (Anglewicz et al 2008). The perceived or actual threat of HIV infection within marriage has led some to take action to reduce their risk; many residents of rural Malawi have divorced spouses who they suspect are HIV positive (Reniers 2008, Smith and Watkins 2005). Rural Malawians have also exhibited a tendency to assess the potential risk of HIV infection prior to marriage, and take precautions to select partners who they perceive to be HIV negative (Watkins 2004).

While research shows that individuals use strategies to avoid HIV infection in marriage, the relationship between HIV infection and remarriage in rural Malawi is less clear. Remarriage was nearly universal in Malawi, (though less common among women than men) (Reniers 2003), but it is not known whether the strategies used to reduce risk of HIV infection (such as partner selection) have affected remarriage rates.

As with other countries in sub-Saharan Africa, there is a strong link between marriage and migration in Malawi. In general, there are two important motivations for migration in Malawi: to earn money with which to supplement subsistence agriculture, and at the beginning or end of a marriage. Marital patterns, and thus mobility patterns by gender, differ by ethnic group and across the three regions of the country (Mtika and Doctor 2002; Reniers 2003). The dominant ethnic group in the northern region of Malawi, the Tumbuka, practices a tradition of patrilocal residence after marriage, in which the wife moves to the home of the husband upon marriage. Ethnic groups in the southern region are characterized by a matrilocal tradition, and residents of the central region do not strictly adhere to either matrilocal or patrilocal residence. Marital dissolution is relatively frequent in Malawi compared to the few other countries in the region for which there is data: nearly half of all first marriages end in divorce within 20 years; divorce as well as widowhood is likely to lead to the departure of either husband or wife depending on the marital residential pattern of the region (Reniers 2003).

There is also a strong relationship between migration and HIV infection in Malawi. As with other countries in sub-Saharan Africa, it has been shown that migrants are more likely to be HIV

positive than non-migrants. This pattern is to be due to increased likelihood of HIV infected individuals to experience marital dissolution and subsequently migrate (Anglewicz 2007).

Data

The data for the analyses below come from the Malawi Diffusion and Ideational Change Project (MDICP), a panel survey that examines the role of social networks in changing attitudes and behavior regarding family size, family planning, and AIDS in rural Malawi. The first round, in 1998, interviewed 1541 ever-married women of childbearing age and 1065 of their husbands in three districts of Malawi, one in each of the three regions. In 2001 and 2004, the second and third rounds of the survey re-interviewed the same respondents along with new spouses for respondents who remarried between the two survey waves (more detailed information about fieldwork and sampling procedures can be found at http://www.malawi.pop.upenn.edu/; see also Watkins et al. 2003 and Anglewicz et al. 2009). The third round rejuvenated the MDICP sample with approximately 1,000 adolescents between the ages of 15-25 (both married and single), and collected biomarkers for HIV/AIDS and sexually transmitted infections for all respondents who agreed to be tested (the HIV/STI testing protocol is described in Bignami-Van Assche et al. 2004). In 2006, the MDICP returned for a fourth wave of data collection to re-interview all MDICP respondents and test for HIV.

The two most recent waves of MDICP include detailed marital histories for all respondents. Individuals were asked to list all previous marriages, along with dates for the beginning and ending of the marriage, and the reason for marital dissolution. All individuals remain in the MDICP sample after marital dissolution, and all new spouses are enrolled in the MDICP sample. Using these data we can examine marital dissolution and remarriage patterns among rural Malawians.

As described above, data for migrants is necessary to evaluate the relationship between HIV infection and remarriage. Fortunately, these data are available for MDICP respondents. During 2006 fieldwork, the MDICP collected information for respondents who were interviewed in at least one previous MDICP wave but had since moved to a location outside of a village in the MDICP sample. For these migrating respondents, MDICP administered a “migration autopsy”

questionnaire to family members or neighbors of the migrant. This questionnaire asked for detailed information on the city, town, village and neighborhood where the migrant moved, along with other relevant information for contacting migrants, such as the names of other members of the migrant's new household, and phone numbers if available. The overall 2006 MDICP sample consisted of 4,528 respondents, of whom a total of 807 individuals (17.8%) had permanently relocated by 2006.

In the spring of 2007, the MDICP used information from the migration autopsies to conduct a migration study: we traced these migrants and administered the 2006 MDICP survey questionnaire and an HIV test to all those who were located and consented. These data offer an opportunity to examine the relationship between HIV infection and remarriage.

MDICP Migration Study Background

Because detailed data on internal migration for sub-Saharan African countries is rare, the following section describes the migration study sample and its characteristics. Below, we describe MDICP sample characteristics and the extent of migration from MDICP sample villages.

Migration Study Sample

In 2006, the fourth wave of the MDICP survey, approximately 70% of the 4,528 sample members was interviewed. For individuals not interviewed, absence due to migration was the most frequent reason (as reported by family members or neighbors): approximately 18% (807) of the 2006 MDICP sample had moved at sometime between the first wave in 1998 and 2006[3]. Of these migrants, a small proportion (11%) of individuals moved to a location outside of Malawi, and no attempts were made to reach them. The target sample for the migration study was thus the 718 men and women who had been interviewed at least once by the MDICP prior to 2006 and who had subsequently relocated to another location within Malawi (urban or rural) and had not returned to their village by the time of the 2006 interview.

[3] This resembles the percentage of MDICP migrants between waves 1 (1998) and 2 (2001). According to Bignami et al. (2003), 16% and 19% of MDICP-1 men and women moved by MDICP wave 2 in 2001.

In this research, "migrant" is defined as an individual who at one point resided in a MDICP sample village and later moved to another location with the intention to stay. That the migrants expect the move to be permanent is established from (1) migration autopsies described above, and (2) self-reports of MDICP migrants interviewed in 2007. It is important to note that some MDICP respondents who were interviewed in a previous MDICP wave and have not permanently moved since 1998 may have been migrants prior to their inclusion in the MDICP sample: in 2006, 47% of men and 34% of women reported that they had stayed outside of their current district of residence for six months or more since they were 15 years old. However, all of these men and women who in 2006 reported having lived at another location since age 15 now consider themselves to be permanent residents of an MDICP village.

Of these 718 migrants, the 2007 migration study team traced approximately 60% and interviewed 56% (N=402) (the remaining 4% were dead, hospitalized, or refused to be interviewed). While some migrants moved with their spouse, others married a new spouse after migration. Consistent with the MDICP sampling procedures, all new spouses of migrants were included in the 2007 migration study sample. Including these new spouses, the migration study interviewed 534 individuals (401 MDICP migrants and 133 new spouses of migrants). A more detailed description of outcomes for all 718 migrants can be found in Anglewicz (2007).

Background information for 402 migrants found by the migration study team in 2007 and the 2006 sample interviewed by the main MDICP survey team are shown in Table 1.

[Table 1 about here]

There are a number of differences in background characteristics between migrants and permanent residents of rural Malawi. Perhaps most striking is the difference in HIV status, where there is a significantly higher HIV prevalence for both male and female migrants. Overall HIV prevalence is 12.7% among migrants compared with 6.2% for non-migrants.[4]

[4] Some respondents were tested for HIV by MDICP in 2004 and/or 2008 but not in 2006/07. For these respondents, we impute HIV status from a previous or later wave of HIV testing. This imputation is straightforward for respondents who are HIV positive in 2004 and HIV negative in 2008. For respondents who were HIV negative in

Regional patterns of migration can be understood within the context of marriage patterns in Malawi. Male migrants are more likely to come from the matrilocal South (45%) than the other two regions, and more women from the patrilocal North migrated (38%) than women from the Center or South. Differences in level of education are also evident; male and female migrants have generally attained higher levels of education than non-migrants.

There are several significant differences in marital characteristics between migrants and non-migrants; female migrants are more likely to have ever been widowed than non-migrants. Female migrants are also less likely to be currently married and more likely to be divorced or widowed than non-migrants. No significant differences in marital status are found between male migrants and non-migrants.

Methods and Results

Our primary interests are in examining differences in marital patterns among rural Malawians by (1) HIV status and (2) migration status. We begin with an analysis of total number of lifetime marriages, in which we expect to find that HIV positive individuals and MDICP migrants both have a higher number of lifetime marriages than HIV negative respondents and non-migrants. Next, we examine analysis of divorce patterns by HIV and migration status. As with research elsewhere in sub-Saharan Africa (Floyd et al. 2008; Gregory et al. 2007; Lopman et al. 2009; Porter et al. 2004), we expect to find that HIV positive individuals are more likely to experience divorce[5] than those who are HIV negative. Finally, we turn to remarriage patterns in SSA, and evaluate the likelihood of remarriage by migration and HIV status.

Number of lifetime marriages

2004 but not tested in 2006/07, we assume that they continue to be HIV negative in 2006/07. The very low HIV incidence rate in MDICP (Obare et al 2008) supports this assumption. Respondents who were not tested in 2006/07 but were HIV positive in 2008 are assumed to have been HIV positive in 2006/07.

[5] While it would be useful to know if migrants were also more likely to experience a death of a spouse as well as a divorce, the small sample size of respondents who were widowed between 2004 and 2006 precluded such analysis.

Beginning with number of lifetime marriages, we run Poisson regressions where the dependent variable is the total number of marriages for MDICP respondents in 2006.[6] We are particularly interested in two independent variables in these regressions: HIV status and migration status. If HIV positive individuals are less likely to remarry after experiencing marital dissolution, we would expect that they would not have a higher number of lifetime marriages than the HIV negative. Due to the relationship between marriage and migration in Malawi, we expect that individuals who migrate will have experienced a larger number of lifetime marriages than MDICP respondents who do not migrate.

In addition to these two independent variables of primary interest, we also include a set of control variables, such as age, education, and region of residence. To measure household economic status, we use ownership of three household amenities: a bicycle, radio, and iron sheet roof. We also include several variables related to marriage, such as number of children, an indicator of whether the respondent was in a polygamous marriage, suspected infidelity of current or most recent spouse or partner, and self-reported infidelity to the most recent spouse or partner.

[Table 2 about here]

The results generally verify our expectations. As shown in Table 2, HIV positive men and women have indeed had a significantly greater number of marriages than HIV negative respondents. However, there is a gendered pattern in the results for number of marriages by migration status: while men who migrate have a significantly greater number of lifetime marriages than non-migrants, there is no difference in number of marriages by migration status for women. This is perhaps due to regional marriage patterns in Malawi. Our results show that there is more marital turnover in the southern region of Malawi compared to the north and central regions. The southern region is also matrilocal. Since more marriages occur in the southern region than the other two regions in Malawi, but women typically do not move upon

[6] Or 2007 in the case of MDICP migrants.

marriage in the south, it is perhaps not surprising that female migrants do not have a higher number of lifetime marriages than non-migrants.

Divorce

To examine whether HIV positive individuals and MDICP migrants are more likely to experience a divorce than the HIV negative or non-migrants, we run logistic regressions where the dependent variable is an indicator for experiencing divorce between 2004 and 2006/07.[7] This time period is particularly important for the relationship between HIV infection and marital change. Access to HIV testing in Malawi increased substantially starting in 2004 (DFID 2005; National AIDS Commission 2006), and MDICP first tested respondents for HIV in 2004. Prior to MDICP testing in 2004, only 8.0% and 13.6% of female and male MDICP respondents were tested and had received a previous HIV test result (Anglewicz 2007). Thus, 2004 to 2006/07 likely represents the first period in which HIV status was widely known among MDICP respondents.

Independent variables come from the 2006/07 MDICP main survey and migration data. As with the above, independent variables of particular interest in these regressions are (1) a variable representing HIV status in 2006 and (2) an indicator of whether the respondent was a migrant. One important difference with the regressions described above is that we limit the migration variable only to MDICP respondents who moved between the 2004 and 2006 waves of the MDICP survey. Of the 402 MDICP migrants interviewed by the 2007 migration study team, 255 (63.4%) migrated in between 2004 and 2006 MDICP survey waves.

Other variables include a set of background characteristics; and variables related to marriage and divorce in Malawi, including marital infidelity, perceived spousal infidelity (from most recent spouse or partner), an indicator of polygamous marriage, and number of living children.

[7] Some individuals experienced more than one divorce between 2004 and 2006/07. A total of 187 individuals experienced at least one divorce between 2004-06, of which 48 divorced twice and 4 divorced three times. We include all these divorces in the regression and use clustered standard errors to adjust for multiple divorces for the same person.

The results confirm our expectation that individuals who moved permanently from a MDICP village to another area within Malawi between 2004 and 2006 were significantly more likely to have experienced a divorce between 2004 and 2006 than individuals who did not move during this time. Similarly, HIV positive men and women were also significantly more likely to have experienced a divorce than MDICP respondents who were HIV negative in 2006. This indicates that there is indeed a strong connection between marital patterns, migration, and HIV infection in Malawi.

However, these regressions do not address the timing of migration and divorce. In other words, do individuals migrate because they divorced or do they divorce because they migrate? In order to address this question I turn to the reported marital status at the time of migration as the MDICP migrants. In the 2007 migration study, we asked respondents what their marital status was at the time of migration. Of the migrants who moved between 2004 and 2006 (included in the previous regressions), 13% (34) were married, 44% (111) were divorced or widowed, and 43% (110) were never-married at the time of migration. If individuals who migrate are more likely to divorce their spouse, one would expect that migrants who are married when they move to be more likely to have experienced divorce between 2004 and 2006 than non-migrants. To test this possibility, I separate the indicator of migrating between 2004-06 by marital status to create a four-category variable that I use as an independent variable in the regression in the previous step. The categories for this variable are 0=non-migrant, 1=married when migrated, 2=not married when migrated, and 3=never married when migrated. So if individuals who migrate are more likely to divorce than non-migrants, one would expect that respondents who are still married when they migrate (category "1") would be more likely to experience divorce between 2004 and 2006. If this variable is not significant it becomes less convincing to conclude that migration leads to divorce and more convincing that individuals who experience marital dissolution are more likely to migrate (category "2").

Upon dividing the migration variable by marital status, we find differences by gender (shown in Table 3 under the "regression 2" row). Interestingly, we find that *both* women who were married at the time of migration and women who were divorced or widowed at the time of migration were significantly more likely to experience divorce than women who didn't move between 2004

and 2006. However, we do not find any difference for men- although migrants are more likely to experience divorce than male non-migrants, there are no significant differences when the migrant variable is divided by marital status for men. So for women we find evidence that the divorced are more likely to migrate *and* that migrants are more likely to become divorced.

However, for this analysis it is also important to note the frequencies of marital status among migrants. There is no evidence in the regression results for this section that married male migrants are more likely to divorce than male non-migrants. However, a relatively small percentage of all male migrants between 2004 and 2006 were married at the time of migration (only 15 of 122 total male migrants, or 12%). A much larger percentage of male migrants were divorced or widowed at the time of migration: 47% (57 of 122). So even though we do not find differences in likelihood of divorce by marital status of the migrant, it is important to note that male migrants are more likely to be divorced or separated- which is likely due to the fact that the southern region has the highest rates of marital turnover among the three regions in Malawi and also practices matrilocal marital patterns.

[Table 3 about here]

Remarriage

Since migrants are more likely to be HIV positive and unmarried at the time of migration, what happens after migration? Are HIV positive individuals who migrate more likely to remarry than the HIV positive who remain in the MDICP village after marital dissolution? To examine this question we look at remarriage patterns by HIV status to investigate whether HIV positive individuals are more or less likely to remarry than HIV negative individuals.

To do so, we again use MDICP respondents from marital histories collected for all respondents in 2006/07 for migrants and non-migrants. We first identify respondents eligible for remarriage by eliminating all individuals who were (1) married to the same person from 2004 to 2006, (2) continuously never-married between 2004-06 (3) polygamous and didn't divorce but added a new spouse between 2004-06. We are then left with respondents who either (1) were remarried in between 2004 and 2006, or (0) did not remarry in between 2004 and 2006 and remained

divorced, separated or widowed by 2006. A tabulation of this remarriage variable shows differences by gender: only 27% (45 of 168) men remained unmarried throughout the period, compared with 67% of women (285 of 423).[8]

We use this binary variable as the dependent variable in our regressions for men and women. Independent variables include (1) an indicator for individuals who migrated in between 2004 and 2006, and (2) HIV status. We run these regressions in a stepwise manner to examine the association with migration and HIV status each individually on the likelihood of remarriage between 2004 and 2006/07. Finally, to see if HIV positive individuals are more likely to remarry if they migrate, we include an interaction term between HIV status and migration status above.

We once again see a gendered pattern for the relationship between remarriage, HIV infection and migration. Results from the first set of regressions (Table 4) show that men who migrate are significantly more likely to remarry between 2004 and 2006, but there is no difference for women. This could be due to regional patterns of migration and marital change in Malawi: marital turnover rates are highest in the southern region of Malawi, where men move with the start of a new marriage or the end of a dissolved marriage. There are a few consistent results by geneder: men and women of greater economic status (measured by household amenities) are more likely to have remarried; and men and women who suspect that their most recent spouse was unfaithful are less likely to have remarried.

The gendered pattern also extends to the association between HIV status and remarriage. As shown in the second set of regressions, women who are HIV positive are significantly less likely to have remarried between 2004 and 2006 than women who are HIV negative. However, there is no difference in the likelihood of remarrying by HIV status for men. This finding is similar to other settings in SSA where HIV positive men seem to have a better chance of remarriage than HIV positive women (Gregory et al 2007).

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[8] As with divorce, some individuals experienced more than one remarriage between 2004 and 2006/07. A total of 250 individuals experienced at least one remarriage between 2004-06, of which 12 remarried twice. We include all remarriages in the regression and use clustered standard errors to adjust for multiple remarriages for the same person.

Finally, we examine whether HIV positive individuals who migrate are more likely to remarry. In the third set of regressions we include an interaction between HIV status and migration status. The results do not show any significant difference in the likelihood of remarriage by HIV and migration status- the interaction is not significant for women. All men who were HIV positive and migrated successfully remarried, so this interaction term dropped out of the regressions due to complete separation.

Discussion

Tables

Table 1: 2006-07 Background characteristics for ever-married MDICP migrants and non-migrants, by gender

	2007 Migration Sample			2006 Non-Migrant Sample		
	Female	**Male**	**Total**	**Female**	**Male**	**Total**
Average age (SD)	32.6	39.0	35.2	33.9	39.0	36.2
Level of education						
No schooling	22.0%**	14.8%	19.1%**	31.5%	18.5%	25.7%
Primary	61.9	63.1	62.5	61.2	65.1	62.9
Secondary or higher	16.1**	22.1	18.4**	7.3	16.4	11.4
Region of origin						
Central	28.6	27.7	28.2	30.7	32.4	31.6
South	27.7*	41.8	33.7	37.7	33.7	35.6
North	43.7**	30.5	38.1**	31.6	33.9	32.8
HIV Positive	16.0**	8.2**	12.7**	6.5	3.5	6.2
Marriage-related characteristics						
Currently married	71.4**	83.0	76.4*	82.7	79.8	81.4
Divorced/separated	14.3**	1.7	9.0**	7.0	1.7	4.6
Widowed	9.1**	0.0	5.2**	4.2	0.8	2.6
Never married	5.2	15.3	9.4	6.1	17.7	11.4
Mean number living children (SD)	3.3 (2.1)	4.1 (3.6)	3.6 (2.9)	3.6 (2.9)	3.8 (4.0)	3.7 (3.5)
Mean number of lifetime marriages (SD)	1.3 (0.7)	1.6 (1.2)	1.4 (1.0)	1.4 (0.8)	1.4 (1.2)	1.4 (1.0)
Ever divorced	39.4	41.2	40.2	29.9	31.3	30.4
Ever widowed	14.7**	4.1	10.2	9.0	6.3	7.8
N=	219	150	369	1,794	1,301	3,095

Notes: difference between migrant sample and non-migrant sample is significant at **p>0.01 and *p>0.05

Table 2: Regression results for number of lifetime marriages, by gender for MDICP 2006-2007 data

	Number of marriages			
	Women		Men	
	Coef.	S.E.	Coef.	S.E.
Age	0.03***	0.01	0.01***	0.00
Age^2	-0.00***	0.00		
Household amenities				
Iron sheet roof	-0.11*	0.07	-0.08	0.07
Bicycle	-0.05	0.05	0.04	0.05
Radio	0.00	0.05	-0.01	0.06
Region of residence				
South (ref)	---	---	---	---
Central	-0.14***	0.05	-0.10	0.06
North	-0.22***	0.06	-0.15**	0.07
Education				
No schooling (ref)	---	---	---	---
Primary	-0.04	0.05	-0.02	0.07
Secondary	-0.10	0.11	-0.10	0.10
Marital characteristics				
Polygamous marriage	0.01	0.06	0.52***	0.06
Number of children	-0.02*	0.01	0.00	0.01
Perceived spousal infidelity	0.01	0.05	0.01	0.09
Unfaithful to spouse	-0.09	0.13	-0.03	0.06
HIV positive	**0.16****	**0.07**	**0.21****	**0.10**
MDICP migrant	**0.03**	**0.07**	**0.15****	**0.07**
Constant	-0.22	0.17	0.10	0.11
R^2 =	0.02		0.06	
N=	1554		1043	

Notes: * Significant at 10%; ** significant at 5%; *** significant at 1%

Table 3: Regression results for divorce between 2004 and 2006/07, by gender for MDICP 2006-2007 data

	Divorce between 2004-06			
	Women		Men	
	Odds	**S.E.**	**Odds**	**S.E.**
Age	0.98	0.01	0.88**	0.05
Age^2			1.00	0.00
Household amenities				
Iron sheet roof	1.01	0.34	2.24**	0.86
Bicycle	0.51***	0.10	0.63	0.18
Radio	0.42***	0.08	0.67	0.20
Region of residence				
South (ref)	---	---	---	---
Central	0.75	0.17	1.15	0.33
North	0.48***	0.13	0.43**	0.17
Education				
No schooling (ref)	---	---	---	---
Primary	1.22	0.31	2.42*	1.21
Secondary	1.17	0.51	0.97	0.80
Marital characteristics				
Polygamous marriage	0.99	0.28	2.45***	0.83
Number of children	0.85**	0.06	1.02	0.04
Perceived spousal infidelity	2.42***	0.52	2.47**	0.95
Unfaithful to spouse	0.45	0.30	0.66	0.20
HIV positive	**2.51*** **	**0.66**	**3.14*** **	**1.17**
MDICP migrant	**2.43*** **	**0.71**	**2.10** **	**0.71**
Regression #2				
Married when migrated	**4.68** **	**2.93**	**2.65**	**2.53**
Divorced/widowed when migrated	**3.44*** **	**1.37**	**2.12**	**1.01**
Never-married when migrated	**1.36**	**0.63**	**1.93**	**0.93**
Pseudo R2	0.15		0.12	
N=	1626		1061	

Notes: * Significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Regression results for remarriage between 2004 and 2006/07, by gender for MDICP 2006-2007 data

	Remarried between 2004-06											
	Women		Men		Women		Men		Women		Men	
	Odds	S.E.	Odds	S.E.	Odds	S.E.	Odds	S.E.	Odds	S.E.	Odds	S.E.
Age	0.96***	0.01	0.99	0.02	0.96***	0.01	0.99	0.03	0.96**	0.01	0.99	0.03
Household amenities												
Iron sheet roof	0.68	0.26	1.08	0.80	0.75	0.30	0.91	0.78	0.74	0.30	0.84	0.78
Bicycle	2.33***	0.66	3.24**	1.97	2.07**	0.63	2.41	1.51	2.10**	0.65	3.25*	2.26
Radio	2.18***	0.69	1.80	0.97	2.50***	0.84	1.93	1.09	2.47***	0.83	1.83	1.06
Region of residence												
South (ref)	---	---	---	---	---	---	---	---	---	---	---	---
Central	0.81	0.26	1.33	0.75	0.77	0.26	0.95	0.59	0.76	0.27	0.95	0.59
North	0.58	0.22	0.68	0.54	0.49*	0.20	0.48	0.41	0.49*	0.20	0.49	0.43
Education												
No schooling (ref)	---	---	---	---	---	---	---	---	---	---	---	---
Primary	0.78	0.24	3.11**	1.64	0.87	0.29	4.22**	2.48	0.89	0.30	4.05**	2.51
Secondary	0.73	0.41	3.51	2.79	0.97	0.56	5.47*	5.23	1.01	0.58	5.28*	5.24
Marital characteristics												
Polygamous marriage	0.89	0.29	17.12***	14.26	0.84	0.30	24.13***	22.41	0.84	0.30	29.57***	30.69
Number of children	0.96	0.06	0.99	0.09	0.96	0.07	0.98	0.11	0.96	0.07	0.96	0.12
Perceived spousal infidelity	0.30***	0.09	0.31*	0.19	0.30***	0.09	0.29*	0.20	0.29***	0.08	0.28*	0.19
Unfaithful to spouse	2.32	1.70	0.19**	0.12	1.95	1.55	0.14**	0.12	1.93	1.52	0.11**	0.10
MDICP migrant	**1.01**	**0.36**	**6.34****	**5.12**	**1.21**	**0.47**	**5.06****	**3.87**	**1.35**	**0.62**	**3.30***	**2.28**
HIV positive					**0.40*****	**0.13**	**3.07**	**2.85**	**0.45****	**0.16**	**1.29**	**1.23**
Interaction migrant*HIV positive									**0.59**	**0.51**	**a**	
Pseudo R^2 =	0.16		0.25		0.27		0.18		0.27		0.18	
N=	391		158		364		144		364		138	

Notes: * Significant at 10%; ** significant at 5%; *** significant at 1%; a=dropped due to multicollinearity, all HIV positive male migrants remarried in between 2004 and 06/07

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