Implications of men's labor migration for women's HIV/AIDS risks in rural Mozambique[*]

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Introduction and conceptualization

International labor migration, primarily directed toward the Republic of South Africa, has been a defining feature of socioeconomic development of the Southern African region (Adepoju 2003; Agadjanian, forthcoming). Southern Mozambique has traditionally been among the areas most affected by these migration flows: men's labor migration to South Africa and other destinations has been an integral part of southern Mozambique's rural society for many decades (CEA/UEM 1997; Crush et al. 1991; First 1983), and currently Mozambicans may be the largest immigrant group in South Africa (Adepoju 2003). However, in recent times this phenomenon has undergone an important transformation. On the one hand, radical political changes in the region, in particular the dismantling of the apartheid system in South Africa, have facilitated entry of Mozambicans into South Africa. On the other hand, with a drastic reduction of the recruitment of foreigners in the South African mining industry and domestic political pressure in that country to limit work opportunities for foreigners, employment options in South Africa for the majority of Mozambicans have become more limited and unpredictable and increasingly illegal (Crush 1997; De Vletter 2000).

In parallel to international migration, migration within Mozambique, particularly from rural to urban areas, has also grown in recent decades. Limited and controlled by the colonial regime, rural-urban migration, especially to Maputo, Mozambique's capital, increased with Mozambique's independence and the civil war that soon followed (Dow 1989; Jenkins 1993). After the war, the structural adjustment policies, which further undermined traditional subsistence agriculture and magnified socioeconomic imbalances, have spurred new migration flows (Knauder 2000). Today, periodic environmental shocks, erratic and low agricultural yields, scarcity of non-agricultural employment, and rising costs of living continue to push rural men to look for job opportunities in South Africa and, to a lesser extent, in urban centers of southern

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Mozambique. As a result, the labor migratory flows from rural areas continue strong, while economic returns to this migration grow less certain.

The described transformation of the migration regime in Mozambique has coincided with a rise of HIV prevalence. Mozambique is among the worst affected countries by the HIV/AIDS epidemic. The epidemic has spread rapidly since the mid-1990s, especially along the transportation lines and borders regions with South Africa, Zimbabwe, and Malawi. The national adult prevalence rate among adults aged 15–49 increased from 8.2% in 1998 to 16.2% in 2004 (Ministry of Health 2005) putting Mozambique at the 10th highest HIV prevalence in the world. The data from the 2007 surveillance round are not yet available but are expected to show a continuing, albeit slower, growth of the epidemic, as the government projections for 2007 put the prevalence rate of 16.5% (INE at al 2004). These estimates mask wide variability in HIV prevalence throughout the country. In 2004 the prevalence rate ranged from 8.6% in the northern province of Cabo Delgado to 26.5% in Sofala province in the central region. The data also point to a particularly rapid rise of seroprevalence in the south of Mozambique: in the southern Gaza province, where the data for this study were collected, the most recent seroprevalence estimate is 19.9% (Ministry of Health 2005).

A number of studies in different parts of sub-Saharan Africa have investigated directly or indirectly possible connections between migration and HIV/AIDS. The predominant view in the literature is that these connections are strong, with migrants being a major vector in the spread of the epidemic (e.g, Appleyard and Wilson 1998; Caldwell et al, 1997; Decosas et al 1995; Hunt 1989). At the same time, studies have also highlighted the complexities of the connections (Lurie 2006). Although direct evidence linking migration to HIV/AIDS in Mozambique is lacking, higher seroprevalence levels around the transportation corridors and along international borders (Barradas and Arnaldo 2003; Barreto et al. 2002; Raimundo 2004) indirectly support this connection. The link between migration and HIV/AIDS is not known just to a small circle of

researchers: thus n rural southern Mozambique, HIV/AIDS is widely regarded as a disease brought to local communities from South Africa by labor migrants (Agadjanian, Arnaldo, and Raimundo 2006).

Our study addresses some of the complexities and gaps surrounding the association between migration and HIV/AIDS by examining how men's labor migration may affect their wives' perceptions and risks of HIV/AIDS. We employ recent data collected among married women in four rural districts of southern Mozambique, comparing wives of migrants and wives of non-migrants, while also making distinctions based on outcomes of migrations among the former.

Based on the literature and on widespread public views linking migration to HIV/AIDS risks, we expect that women who are married to migrants would be more likely than women married to non-migrants to suspect their husbands of infidelity and to be worried about risks of contracting HIV from them. At the same time, due to physical and social barriers that men's labor migration may erect between spouses, we expect to find less spousal communication about HIV/AIDS in migrant couples than non-migrant couples. Men's migration may not only increase their risks of contracting HIV in places of migration destination (and consequently their wives' perceptions of risks of getting HIV from their husbands) but also increase exposure of their left-behind wives to HIV risks by facilitating extramarital sex. While reports of extramarital partnerships by married rural women are highly unreliable, we can use their worries about getting infected by men other than their husbands as proxies for such exposure. We therefore expect that women married to migrants are more likely to express such worries than women married to non-migrants.

Husband's migration may also have implications for wife's status and therefore for decisions pertaining to protection against HIV risks. Thus husband's migration may strengthen patriarchal hierarchy within the household and diminish wife's decision-making power. This tendency may manifest itself in wife's reduced ability to refuse having sex with her husband or in husband's reluctance to accept condom use. Importantly, however, changes in women's status associated

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with their husbands' migration may be contingent on migration's economic outcomes. Migrants who manage to find good jobs and to remit money or bring goods back to their families may have greater leverage over their non-migrating spouses than migrants who are less successful in generating income and sending money and gifts back to their wives and children. When analyzing HIV/AIDS risks, it is therefore important to take these differences into account.

Data and Methods

This study uses data from a study conducted in Southern Mozambique in 2006. The fieldwork included an individual women's survey, a community survey, and in-depth interviews with individual survey respondents. The sample for the individual survey was drawn from the population of married women aged 18-40 residing in 56 villages of four districts in southern Mozambique. In each district, 14 villages were selected with the probability proportional to size. In each selected village (or in a randomly picked section thereof if a village was big), all households with at least one married woman were canvassed and separated into two lists— those with at least one woman married to migrant and those with no such women. These two lists were used as sampling frames: from each of them 15 households were randomly selected. In each selected household a woman was interviewed (in household classified as migrant, a woman married to a migrant was interviewed). The resulting sample included 1680 women (420 per district, 30 per village), more or less evenly split between women married to migrants and women married to non-migrants. The survey collected detailed demographic and socioeconomic information, including pregnancy histories, husband's migration history, and household material status, as well as information on HIV/AIDS awareness and prevention, women's social networks, and their gender attitudes. In parallel with the individual women's survey, a community survey was carried out each of the villages included in the sample. The community survey focused on village economic and social life, out-migration, and HIV/AIDS issues.

A subsample of the surveyed women married to migrants—72 survey respondents from eight villages (nine per village, eighteen per district)—participated in in-depth interviews. The interviews expanded on issues addressed in the survey, focusing on women's perceptions of how husbands' migration may have affected their relations with husbands, childbearing intentions, HIV/AIDS risks, etc.

Statistical model

We use logistic regression for binary dependent variables in multivariate analyses. The statistical models compare women married to migrants to those married to non-migrants on a number of socioeconomic and HIV/AIDS-focused outcomes. The main outcomes are:

- <u>Knowledge or suspicion of husband's sexual relationships with other women</u>. Respondents were asked whether they know or suspect that their husbands had sex with other women, excluding their other wives, in the twelve months preceding the survey. This outcome is coded as a dichotomy: knows/suspects that husband had sex with other women vs. knows that he did not or is not sure.

- <u>Being very worried about getting HIV from husband</u>. This dichotomy is operationalized as follows: very worried about getting infected from husband vs. somewhat worried, not worried, or does not know. (The survey respondents were not asked about their serostatus. Only one respondent identified herself as HIV+, and she is excluded from the analysis).

- <u>Being worried about getting HIV from another man or other men</u>. Whereas the direct question about respondents' extramarital experience produced responses that cannot be deemed reliable, the questions about perceptions of risks of contracting HIV from other men (asked in a different section of the interview) may yield a reasonable proxy for respondents' exposure to risks through extramarital sex. This variable is operationalized as a dichotomy: very worried or worried vs. not worried or does not know.

- Spousal communication about HIV/AIDS. This outcome is formulated as follows: recently talked, even if in passim, with husband about issues pertaining to HIV/AIDS or did not talk or could not recall talking to husband about it. In the model predicting this outcome we exclude migrants' wives who reported having no recent interactions with their husbands.

- Refusal to have sex with husband since the beginning of calendar year (i.e., in about 6-7 months preceding the survey). On this outcome, women who reported having refused sex at least once are contrasted to those who said they had never refused sex to husband. Once again, we exclude women who had not interacted with their husbands for a long period of time preceding the survey.

- Potential and actual condom use with husband. Two outcomes are considered: 1. Respondent's opinion on whether husband would *not* accept using condom in sex with her. This dichotomy is constructed as follows: those who think their husbands would not accept and those who think that they would accept or are not sure. Women who have used condom with their husbands at least once are included in the former category. 2. Whether or not respondent ever used condom in sex with husband, regardless of time and purpose of use.

Our main predictor is migration status of respondent's husband: we look at differences between women married to migrants and those married to non-migrants in the above outcomes. We also examine differences in migrant "quality" as measured by the amount and frequency of remittances. For that we subdivided women married to migrants into two groups: those whose husbands remit more or less regularly and those whose husbands who remit seldom or do not remit at all. However, because the impact of remittances on household is difficult to estimate objectively and non-reporting and misreporting of amounts were quite common, we also employ an alternative definition of migrant husband's "quality"—that based on women's own stated perception of the effect of husbands' migration on their households' wellbeing. Given that our outcomes are of behavioral and attitudinal nature, this specification of migration effects may be

more relevant for their analysis than the reporting of remittances. Importantly, the two variables have very different distributions: whereas on the remittances-based variable the migrant husbands sub-sample is split 4:1 (four "good" migrants for one "bad" migrant), in the wife's perception-based variable the distribution is nearly even (see Table 1). The logistical regression models control for age, education, polygyny, household material status and economic characteristics, coresidence with parents-in-law, and religious affiliation. Depending on specific outcomes, other controls are also added. The variables used in the statistical models are listed in Table 1.

Table 1 about here

Multivariate Results

We first estimate the likelihood of a responding knowing or thinking that her husband had another sexual partner (excluding his other wives, for polygynous men). As the results presented in Panel A of Table 2 indicate, respondents married to migrants were significantly more likely than non-migrants' wives to reckon that their husbands had had other sexual partners, regardless of other characteristics. The magnitude of the effect is, however, rather modest: the odds of such knowledge/suspicion among wives of migrants are 1.3 times those among wives of non-migrant. When we break down the migrant-husband category into wives of "good" migrants and wives of "bad" migrants on the basis of remittances, the magnitudes of the effects are comparable between the two sub-categories of migrants' wives, but the positive association is statistically significant only for "good" migrants (Panel B). The alternative definition of "bad" vs. "good" migrants, based on woman's assessment of the effects of migration, yield similar results, with both coefficients having similar values and levels of significance (Panel C). Among other effects, it is notable that being in a polygynous marriage

increases the likelihood of suspicions of infidelity as does experience of physical abuse by the husband.

Table 2 about here

The odds from the models predicting whether a respondent is very worried about risks of contracting the HIV virus from her husband are presented in Table 3. Woman's knowledge/suspicion that her husband has had outside sex is now included is a control variable. Again, women married to migrants are significantly different from those married to non-migrants: other things being equal migrants' wives are more likely than non-migrants' wives to express great worries about getting infected by their husbands (Table 3, Panel A). When women married to "good" migrants are separated from those married to "bad" migrants (based either on remittances or on women's perceptions of the effects of migration, the above effect is statistically present only among wives of "good" migrants (Panels B and C). Unlike the outside-sex model, the difference between the effects of the two types of migrants is not only in the level of statistical significance but also in the magnitude. It is noteworthy that the effects of husband's migration status are strong even after controlling for woman's knowledge/perception of husband's infidelity.

Table 3 about here

Table 4 presents the results of the tests predicting worries about getting HIV from another man or other men, which, as we said earlier, is used as a proxy for women's exposure to extramarital sex. Here again, husband's migration does not significantly affect the outcome (women with migrant husbands seem more likely to express such worries, but this effect is not statistically significant). When the migrant-husband group is subdivided into two on the basis of remittances,

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wives of remitting husbands appear different from those married to non-remitters; the difference is, however, not statistically significant. The results of the model with husband's migration quality defined on the basis of respondent's perception of migration's impact on household wellbeing (Panel C) are different: now women who are married to "good" migrants are significantly more likely to worry about getting HIV from another man than women married to non-migrants. At the same time, the latter are no different from respondents married to "bad" migrants. The effects of other covariates are also instructive. Thus knowledge/suspicion that husband has been unfaithful increases the likelihood of worries about getting infected by another man. This statistically significant association may point to greater probability of extramarital sex among women whose husbands are also engaged in extramarital sex. Household's lower socioeconomic status, approximated by roof quality of main dwelling (but not the index of material possessions) increases the likelihood of worries, perhaps alluding to greater risks of transactional and/or coerced sex among poorer women. At the same time, the greater worries of women who sell some of their crops may be related to these women's greater mobility associated with the sale of those crops and exposure to extramarital sex through such mobility.

Table 4 about here

We now turn to spousal communication regarding HIV/AIDS. The results presented in Table 5, Panel A, indicate that women married to migrants are considerably less likely to have talked to their husbands about HIV/AIDS than women married to non-migrants. However, Panels B and C of Table 5 also show important differences between categories of migrants. Thus, only women married to "bad" migrants are significantly different from those married to non-migrants; the differences between "good" migrants' wives, however defined, and non-migrant wives are

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smaller and not statistically significant. It is also noteworthy that these patterns persist after controlling for woman's education and her worry about getting infected by her husband.

Table 5 about here

The following set of models that we fit has refusal to have sex with husband in the six months preceding the survey (since January 2006) as the outcome. Migrant women whose husbands had not come back for a visit during that period are excluded from the analysis. The results, presented in Table 6 show that wives of migrants are significantly less likely to report having refused sex with their husbands, and a comparison of the two categories of migrants reveals no differences. Notably, husband's migration status is the only statistically significant predictor in the model, with the exception of knowledge/suspicion of husband's infidelity.

Table 6 about here

Table 7 displays the results of a logistic regression model predicting women's opinion on whether their husbands would be against using condom in sex with them. In addition to the predictors used in the previous tests, these models control for recent frequency of intercourse and for whether a woman has ever refused having sex with her husband. The results show that migrants' wives, while taken together, are not significantly different from wives of non-migrants in thinking that their husbands would oppose condom use (Panel A). When we separate "good" from "bad" migrants based on remittances, the differences remain statistically non-significant (Panel B). However, the breakdown of the migrant category based on women's perception of migration effects reveals important differences between respondents married to "good" and "bad" migrants: only the former are significantly different from non-migrants' wives. In fact, wives of "bad" migrants appear to be less likely than the reference group to think that their husbands

would reject condom use, but this difference is not statistically significant (Panel C). Once again, having a "good" migrant husband is the only statistically significant predictor in the model (not counting the 21-25 age group).

Table 7 about here

When we test for differences in actual condom use (has ever used condom in sex with husband), however, neither sub-groups of migrants' wives is different from non-migrants' wives. Likewise, no differences across migration categories could be found in reporting physical abuse by husband. We also looked for possible differences in the likelihood of having done an HIV test, but we found no differences associated with husband's migration status. Finally we examined whether the wives of migrants are more likely to report having had genital ulcers or abnormal vaginal discharges, which are used as proxies for STDs. No differences across different migration categories could be detected either. These non-significant results are not shown in the paper.

Conclusion

The results of this study add important insights to our understanding of the complex connections between migration and HIV/AIDS. While the data on which this study is based do not provide information on actual HIV infection among wives of migrants and non-migrants, they did allow us to test for attitudinal and behavioral differences between the two categories of married rural women. Moreover, the foregoing analysis moved us beyond the conventional migrant vs. non-migrant dichotomy and explored differences within the migrant-husband group.

That women who are married to migrants are much more likely than those married to non-migrants to think that their husbands have had sex with other women comes as no surprise,

given the widespread view that men cannot live without sex for a long time and therefore migrant men engage in extramarital sex while away from home. These views parallel assumptions about men's sexuality widely held in other developing settings, including those in sub-Saharan Africa (e.g., Orubuloye et al. 1997). The differences between more and less successful migrant husbands was small, although when the "quality" of migrant was defined based on wife's assessment of the effects of migration on household wellbeing, only women married to "good" migrants were significantly different from those married to non-migrants, perhaps reflecting women's perception about the ability of their husbands to pay for extramarital sex.

Also as we expected, migrants' wives were more likely than non-migrants' wives to be very worried about getting infected by their husbands, even after controlling for perceptions of husband's infidelity. However, the dissection of the migrants' wives category showed that only women' married to "good" migrants were significantly different from those married to non-migrants. This paradoxical result is quite instructive: for women married to "good" migrants, greater fear of infection becomes a tradeoff of material benefits derived from migration. These results are paralleled by the results of the tests of worries about getting the HIV virus from other men. Wives of migrants whose migration they perceived as beneficial for their households were less likely to worry about getting infected by other men. Here, the material benefits of husband's migration may act as a shield protecting women from risks of transactional sex.

While resulting in greater worries about HIV infection, husband's migration may preclude effective spousal communication on managing these risks. However, the difference between the two types of migrants was found to be substantial. Notably, only women married to "bad" migrants showed a lower probability of having talked about HIV/AIDS matters with their husbands, relative to women married to non-migrants, which is likely to be due to reduced communication overall. On the other hand, women married to "good" migrants, defined either on the basis of remittances or women's perceptions, were not significantly different from those

married to non-migrants in the likelihood of having conversed with husbands on matters HIV/AIDS. These patterns persisted after controlling for the level of personal worries about getting infected.

Whereas women married to "good" migrants were no different from those married to non-migrants in the likelihood of having talked about AIDS, they were more likely to think that their husbands would not accept condom use. Interestingly, this difference was statistically significant only when we used the quality of migrant classification based on woman's subjective assessment, which is arguably more relevant to women's other attitudes and views. Also notably, this effect was statistically significant even after controlling for spousal communication about HIV/AIDS, indicating that a woman's perception of her husband's position on condom use is not necessarily based on what her husband tells her directly. More broadly, this result may speak to the issue of household power balance as it is affected by husband's migration and especially by the material outcomes of that migration. This interpretation would lend support to our expectation that husband's migration that yields tangible benefits may reinforce patriarchal hierarchy within the household.

However, when it comes to actual condom use, no differences across the three categories of husband's migrant status could be detected. Yet this result should be considered with caution as reports of condom use may be highly unreliable. At the same time—and consistent with our expectation—women's married to migrants, regardless of their husbands' migration "quality," were significantly less likely to report having refused sex with their husbands than were non-migrants' wives. While a patriarchy-based explanation of this association is appealing, it would be premature at this stage of analysis as this association may reflect reduced frequency of intercourse in couples with a migrant spouse rather than some power hierarchy.

The results of the tests for the probability of physical abuse by husband, which did not yield any significance differences, also suggest that power hierarchies established and reinforced through husband's migration do not have straightforward implications for relationships between

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spouses. At the same time, it is also possible that the lack of any association between physical abuse suffered from husband and his migration status could represent mutually canceling effects of greater inequality within migrant households, on the one had, and reduced physical interaction between spouses in them. Finally, while in our study we could not estimate the HIV prevalence directly, we attempted to compare women across the migration status of their husbands with respect to characteristics that might serve as proxies for HIV infection. We found no differences across migration categories in the likelihood of having done HIV test and reporting STD symptoms. While these results are informative, they are not sufficient for firm inferences regarding actual effects of migration on the probability of HIV infection.

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Table 1. Variable definition and distribution (percent unless noted otherwise)

Outcomes

Knowledge/suspicion of husband's infidelity	Knows or suspects that husbands is unfaithful	32.1
	Knows he is faithful or not sure	67.9
Worries about getting infected by husband	Very worried	79.7
	Not very worried	20.3
Worries about getting infected by another man	Worried	18.9
	Not worried	81.1
Communication with husband regarding HIV/AIDS	Talked to husband about HIV/AIDS	58.9
	Did not talk to husband about HIV/AIDS	41.1
Refusal to have sex with husband	Refused to have sex with husband at least once	23.7
	Never refused to have sex with husband	76.3
Perceived husband's disapproval of condom	Thinks husb. would refused to use condom	30.5
	Thinks husb. would accept or not sure	69.5
Condom use with husband	Used at least once	8.2
	Never used	91.8

Predictors

Migration status	Migrant husband	41.1
	Non-migrant husband	58.9
"Quality" of migrants, based on remittances	Husband sends/brings at least some remittances	80.0
	Husband sends/brings no remittances	20.0
"Quality" of migrant, based on respondent's assessment of effects of migration	Husband's migration improved HH wellbeing	50.2
	Husband's migration did not improve HH wellbeing	49.8

Controls

Respondent's age	18-20	5.8
	21-25	28.0
	26-30	28.0
	31 or older	28.1
Number of living children (mean)		2.2
Type of marriage	Polygynous union	21.1
	Monogamous	78.9
Bridewealth payment status	At least some bridewealth paid	39.6
	No bridewealth paid	60.4
Co-residence with parents-in-laws	Co-resides with at least one parent-in-law	38.4
	No coresident parent-in-law	61.6
Respondent's education	None	26.6
	1 to 4 years	45.3
	5 or more years	28.0
Material possessions (scale 1 to 4, mean)		2.1
Roof material of main dwelling	Thatch	39.4
	Other (zinc sheet, tile, cement)	60.6
Electricity in household	Electricity from grid, generator, battery of solar)	14.1
	No electricity	85.9
Sale of agricultural sales	Household sell at least some crops	10.2
	Household does not sell any crops	89.8
Cattle ownership	Household owns cattle	31.2
	Household owns no cattle	68.8
Religious affiliation	None	13.9
	A mainline church	27.4
	A Zionist/other Pentecostal	58.7

Table 2. Knows/suspects that husband has had sex with other women, excluding other wives (logistic regression coefficients and standard errors)

Predictor	A. Any migrant			B. "Quality" of migrant based on remittances			C. "Quality" of migrant based on assessment		
	Coef.	SE		Coef.	SE		Coef.	SE	
Husband is migrant	0.277	0.115	*						
Husband is "good" migrant				0.276	0.123	*	0.283	0.143	*
Husband is "bad" migrant				0.281	0.203		0.274	0.142	*
[Husband is non-migrant]									
[Age 18-20]									
Age 21-25	0.243	0.177		0.244	0.177		0.239	0.177	
Age 26-30	-0.013	0.195		-0.012	0.196		-0.011	0.195	
Age 31+	0.009	0.223		0.009	0.223		0.012	0.223	
Number of living children	-0.023	0.042		-0.023	0.042		-0.023	0.042	
In polygynous union	0.289	0.136	*	0.289	0.136	*	0.291	0.136	*
[In monogamous union]									
At least some bridewealth paid	-0.203	0.120		-0.203	0.121		-0.202	0.121	
[No bridewealth paid]									
Co-resides with in-laws	-0.017	0.121		-0.017	0.121		-0.015	0.120	
[Does not co-reside with in-laws]									
[No education]									
Education 1 to 4 yrs	0.297	0.138	*	0.297	0.138	*	0.292	0.138	*
Education, 5 or more yrs	0.255	0.163		0.255	0.163		0.254	0.163	
Material possessions index	0.076	0.061		0.077	0.062		0.077	0.062	
Thatched roof of main dwelling	-0.346	0.120	**	-0.346	0.120	**	-0.348	0.120	**
[Zinc, "lusolite", or block roof]									
HH has electricity	0.009	0.162		0.009	0.162		0.007	0.163	
[HH has no electricity]									
HH sells at least some crops	0.281	0.178		0.281	0.178		0.268	0.178	
[HH does not sell crops]									
HH owns cattle	-0.032	0.126		-0.033	0.126		-0.032	0.126	
[HH owns no cattle]									
[No church affiliation]									
Mainline church	0.223	0.187		0.222	0.187		0.223	0.187	
Zionist/other Pentecostal	-0.007	0.166		-0.007	0.166		-0.008	0.166	
Husband beat her up at least once	0.935	0.114	**	0.935	0.114	**	0.932	0.114	**
[Husband never beat her up]									
Number of observations	1671			1671			1671		

Notes: Reference categories in brackets; ** significant at p≤.01; * p≤.05.

Table 3. Very worried about getting infected by husband (logistic regression coefficients and standard errors)

Predictor	A. Any migrant			B. "Quality" of migrant based on remittances			C. "Quality" of migrant based on assessment		
	Coef.	SE		Coef.	SE		Coef.	SE	
Husband is migrant	0.334	0.138	*						
Husband is "good" migrant				0.363	0.150	*	0.424	0.182	*
Husband is "bad" migrant				0.234	0.241		0.255	0.168	
[Husband is non-migrant]									
[Age 18-20]									
Age 21-25	0.470	0.193	**	0.466	0.193	*	0.467	0.193	*
Age 26-30	0.604	0.216	**	0.597	0.216	**	0.602	0.216	**
Age 31+	0.331	0.243		0.326	0.243		0.327	0.243	
Number of living children	0.056	0.048		0.056	0.048		0.055	0.048	
Polygynous union	0.153	0.166		0.156	0.166		0.161	0.166	
[In monogamous union]									
At least some bridewealth paid	-0.133	0.140		-0.138	0.141		-0.141	0.141	
[No bridewealth paid]									
Co-resides with in-laws	0.211	0.142		0.209	0.142		0.211	0.142	
[Does not co-reside with in-laws]									
[No education]									
Education 1 to 4 yrs	0.429	0.153	**	0.427	0.153	**	0.425	0.153	**
Education, 5 or more yrs	0.065	0.179		0.061	0.179		0.059	0.179	
Material possessions index	0.008	0.073		0.004	0.073		0.004	0.073	
Thatched roof of main dwelling	-0.306	0.134	*	-0.305	0.134	*	-0.303	0.134	*
[Zinc, "lusolite", or block roof]									
HH has electricity	0.394	0.215		0.391	0.215		0.384	0.215	
[HH has no electricity]									
HH sells at least some crops	0.315	0.228		0.315	0.228		0.323	0.227	
[HH does not sell crops]									
HH owns cattle	0.019	0.148		0.021	0.148		0.013	0.149	
[HH owns no cattle]									
[No church affiliation]									
Mainline church	0.163	0.219		0.167	0.219		0.167	0.219	
Zionist/other Pentecostal	-0.033	0.187		-0.031	0.187		-0.031	0.187	
Knows/suspects husband's extra sex	0.767	0.153	**	0.768	0.153	**	0.766	0.153	**
[Does not know/does not suspect]									
Number of observations		1670			1670			1671	

Notes: Reference categories in brackets; ** significant at p≤.01; * p≤.05.

Table 4. Worried about getting infected by other men (logistic regression coefficients and standard errors)

Predictor	A. Any migrant		B. "Quality" of migrant based on remittances		C. "Quality" of migrant based on assessment	
	Coef.	SE	Coef.	SE	Coef.	SE
Husband is migrant	-0.180	0.138				
Husband is "good" migrant			-0.232	0.150	-0.381	0.182 *
Husband is "bad" migrant			0.010	0.240	0.001	0.167
[Husband is non-migrant]						
[Age 18-20]						
Age 21-25	-0.021	0.207	-0.011	0.207	-0.009	0.207
Age 26-30	-0.210	0.229	-0.193	0.230	-0.203	0.229
Age 31+	-0.044	0.256	-0.029	0.256	-0.030	0.256
Number of living children	-0.015	0.048	-0.016	0.048	-0.014	0.048
In polygynous union	0.064	0.159	0.058	0.159	0.041	0.159
[In monogamous union]						
At least some bridewealth paid	0.140	0.140	0.149	0.141	0.161	0.141
[No bridewealth paid]						
Co-resides with in-laws	-0.021	0.142	-0.017	0.142	-0.025	0.142
[Does not co-reside with in-laws]						
[No education]						
Education 1 to 4 yrs	-0.125	0.155	-0.119	0.155	-0.114	0.155
Education, 5 or more yrs	-0.279	0.189	-0.271	0.190	-0.266	0.190
Material possessions index	0.063	0.072	0.068	0.072	0.073	0.072
Thatched roof of main dwelling	0.432	0.138 **	0.431	0.138 **	0.431	0.138 **
[Zinc, "lusolite", or block roof]						
HH has electricity	0.054	0.191	0.056	0.191	0.077	0.192
[HH has no electricity]						
HH sells at least some crops	0.745	0.186 **	0.742	0.186 **	0.740	0.186 **
[HH does not sell crops]						
HH owns cattle	0.324	0.144 *	0.323	0.144 *	0.332	0.144 *
[HH owns no cattle]						
[No church affiliation]						
Mainline church	-0.313	0.204	-0.318	0.205	-0.317	0.205
Zionist/other Pentecostal	-0.459	0.178 **	-0.463	0.178 **	-0.459	0.178 **
Knows/suspects husband's extra sex	0.341	0.135 **	0.341	0.135 **	0.343	0.135 **
[Does not know/does not suspect]						
Number of observations	1671		1671		1672	

Notes: Reference categories in brackets; ** significant at p≤.01; * p≤.05.

Table 5. Talked to husband about HIV (logistic regression coefficients and standard errors)

Predictor	A. Any migrant			B. "Quality" of migrant based on remittances			C. "Quality" of migrant based on assessment		
	Coef.	SE		Coef.	SE		Coef.	SE	
Husband is migrant	-0.354	0.112	**						
Husband is "good" migrant				-0.218	0.120		-0.198	0.142	
Husband is "bad" migrant				-0.862	0.198	**	-0.501	0.137	**
[Husband is non-migrant]									
[Age 18-20]									
Age 21-25	0.070	0.169		0.043	0.170		0.060	0.169	
Age 26-30	0.275	0.186		0.235	0.187		0.273	0.186	
Age 31+	0.170	0.212		0.133	0.213		0.162	0.212	
Number of living children	0.095	0.041	*	0.097	0.041	*	0.093	0.041	*
In polygynous union	-0.208	0.134		-0.190	0.134		-0.189	0.135	
[In monogamous union]									
At least some bridewealth paid	0.126	0.117		0.100	0.117		0.105	0.117	
[No bridewealth paid]									
Co-resides with in-laws	-0.171	0.117		-0.184	0.117		-0.169	0.117	
[Does not co-reside with in-laws]									
[No education]									
Education 1 to 4 yrs	0.210	0.130		0.196	0.130		0.201	0.130	
Education, 5 or more yrs	0.551	0.156	**	0.532	0.157	**	0.541	0.157	**
Material possessions index	0.045	0.060		0.028	0.060		0.037	0.060	
Thatched roof	0.461	0.116	**	0.470	0.117	**	0.465	0.117	**
[Zinc, "lusolite", or block roof]									
HH has electricity	0.424	0.163	**	0.418	0.164	**	0.403	0.163	**
[HH has no electricity]									
HH sells at least some crops	-0.031	0.178		-0.027	0.179		-0.025	0.178	
[HH does not sell crops]									
HH owns cattle	0.023	0.122		0.030	0.123		0.016	0.122	
[HH owns no cattle]									
[No church affiliation]									
Mainline church	0.318	0.179		0.336	0.179	*	0.322	0.179	
Zionist/other Pentecostal	0.338	0.157	*	0.348	0.157	*	0.338	0.157	*
Knows/suspects husband's extra sex	0.078	0.115		0.080	0.115		0.076	0.115	
[Does not know/does not suspect]									
Very worried about getting HIV from husband	1.380	0.136	**	1.383	0.136	**	1.379	0.136	**
[Not very worried]									
Number of observations		1670			1670			1671	

Notes: Reference categories in brackets; ** significant at p≤.01; * p≤.05.

Table 6. Refused sex with husband at least once in past six months (logistic regression coefficients and standard errors)

Predictor	A. Any migrant			B. "Quality" of migrant based on remittances			C. "Quality" of migrant based on assessment		
	Coef.	SE		Coef.	SE		Coef.	SE	
Husband is migrant	-0.758	0.157	**						
Husband is "good" migrant				-0.716	0.164	**	-0.733	0.186	**
Husband is "bad" migrant				-0.953	0.288	**	-0.783	0.190	**
[Husband is non-migrant]									
[Age 18-20]									
Age 21-25	0.025	0.197		0.018	0.198		0.032	0.197	
Age 26-30	0.068	0.214		0.055	0.215		0.064	0.214	
Age 31+	0.283	0.240		0.271	0.241		0.275	0.240	
Number of living children	0.008	0.045		0.008	0.045		0.009	0.045	
In polygynous union	-0.055	0.149		-0.052	0.149		-0.054	0.149	
[In monogamous union]									
At least some bridewealth paid	0.098	0.130		0.092	0.130		0.093	0.130	
[No bridewealth paid]									
Co-resides with in-laws	0.016	0.131		0.013	0.131		0.011	0.131	
[Does not co-reside with in-laws]									
[No education]									
Education 1 to 4 yrs	-0.108	0.147		-0.112	0.147		-0.102	0.146	
Education, 5 or more yrs	0.161	0.172		0.154	0.172		0.159	0.172	
Material possessions index	-0.036	0.067		-0.039	0.067		-0.039	0.067	
Thatched roof of main dwelling	-0.173	0.130		-0.171	0.130		-0.168	0.130	
[Zinc, "lusolite", or block roof]									
HH has electricity	0.048	0.179		0.046	0.179		0.046	0.179	
[HH has no electricity]									
HH sells at least some crops	-0.193	0.200		-0.190	0.200		-0.164	0.199	
[HH does not sell crops]									
HH owns cattle	0.000	0.136		0.002	0.136		-0.002	0.136	
[HH owns no cattle]									
[No church affiliation]									
Mainline church	0.297	0.205		0.302	0.206		0.296	0.205	
Zionist/other Pentecostal	0.168	0.184		0.171	0.184		0.170	0.184	
Knows/suspects husband's extra sex	0.257	0.127	*	0.257	0.127	*	0.251	0.126	*
[Does not know/does not suspect]									
Very worried about getting HIV from husb.	0.132	0.153		0.131	0.153		0.136	0.152	
[Not very worried]									
Had no sex in 4 weeks before survey	0.072	0.141		0.072	0.141		0.068	0.141	
[Had sex in 4 weeks before survey]									
Number of observations	1646			1647			1647		

Notes: Reference categories in brackets; ** significant at p≤.01; * p≤.05.

Table 7. Husband would not accept using condom (logistic regression coefficients and standard errors)

Predictor	A. Any migrant		B. "Quality" of migrant based on remittances		C. "Quality" of migrant based on assessment	
	Coef.	SE	Coef.	SE	Coef.	SE
Husband is migrant	0.116	0.142				
Husband is "good" migrant			0.135	0.148	0.384	0.163 *
Husband is "bad" migrant			0.039	0.227	-0.181	0.172
[Husband is non-migrant]						
[Age 18-20]						
Age 21-25	0.440	0.184 *	0.436	0.184 *	0.424	0.185 *
Age 26-30	0.365	0.200	0.359	0.200	0.364	0.201
Age 31+	0.494	0.223 *	0.489	0.224 *	0.483	0.224 *
Number of living children	-0.014	0.041	-0.013	0.041	-0.018	0.041
In polygynous union	0.181	0.135	0.184	0.135	0.216	0.136
[In monogamous union]						
At least some bridewealth paid	-0.076	0.119	-0.079	0.119	-0.113	0.120
[No bridewealth paid]						
Co-resides with in-laws	-0.014	0.120	-0.015	0.120	-0.012	0.121
[Does not co-reside with in-laws]						
[No education]						
Education 1 to 4 yrs	-0.015	0.133	-0.017	0.133	-0.030	0.133
Education, 5 or more yrs	-0.192	0.162	-0.195	0.162	-0.211	0.163
Material possessions index	-0.019	0.062	-0.021	0.062	-0.035	0.062
Thatched roof of main dwelling	-0.089	0.119	-0.088	0.119	-0.085	0.120
[Zinc, "lusolite", or block roof]						
HH has electricity	0.260	0.161	0.260	0.161	0.225	0.163
[HH has no electricity]						
HH sells at least some crops	0.181	0.178	0.182	0.178	0.195	0.178
[HH does not sell crops]						
HH owns cattle	0.008	0.125	0.009	0.125	-0.005	0.126
[HH owns no cattle]						
[No church affiliation]						
Mainline church	-0.279	0.188	-0.276	0.188	-0.272	0.189
Zionist/other Pentecostal	0.073	0.161	0.075	0.162	0.074	0.162
Husband beat her up at least once	-0.060	0.118	-0.059	0.118	-0.057	0.119
[Husband never beat her up]						
Knows/suspects husband's extra sex	0.053	0.120	0.053	0.120	0.049	0.120
[Does not know/does not suspect]						
Very worried about getting HIV from husband	-0.220	0.142	-0.219	0.142	-0.220	0.142
[Not very worried]						
Refused to have sex with husb. once or more	0.129	0.128	0.128	0.128	0.132	0.128
[Never refused to have sex with husband]						
Had no sex in 4 weeks before survey	-0.141	0.133	-0.142	0.133	-0.135	0.134
[Had sex in 4 weeks before survey]						
Talked with husband about HIV/AIDS	0.303	0.118 **	0.298	0.118 **	0.288	0.118 **
[Did not talk with husband about HIV/AIDS						
Number of observations	1664		1664		1664	

Notes: Reference categories in brackets; ** significant at p≤.01; * p≤.05.