Health and Early Marriage in Rural Malawi

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Although the age at first marriage among women has been rising over the past two decades in the majority of countries in Sub-Saharan Africa, the upward trend in the age at marriage apparently has stalled in Malawi (Macro 2004). To the extent that recent changes in Malawi have been documented, the evidence suggests a *decline* in women's age at first marriage (Ueyema and Yamauchi 2009). These changes have been attributed to pressures created by the HIV/AIDS epidemic. Ueyema and Yamauchi (2009) found that young women who lived in communities with higher levels of adult mortality were significantly more likely to get married at a younger age than women from communities with a lower mortality burden. They hypothesize that in the marriage search process, the higher risk of adult mortality associated with the HIV epidemic raises the "cost" of a prolonged marriage search. This leads young women to marry at younger ages, in order to find a "safe" spouse. Although marriage may itself put young women at risk of becoming infected, due to a higher frequency of unprotected sexual activity (Clark 2004), cross-national data from sub-Saharan Africa suggests that women who delay marriage to older ages are at greater risk due to a prolonged period of premarital sexual activity (Bongaarts 2007).

An alternate explanation for the declining age at first marriage in Malawi also suggested by Ueyema and Yamauchi (2009) is that the HIV epidemic may be encouraging men to marry younger women who have had less sexual experience and are considered less likely to already be infected with HIV at the time of marriage. This theory is consistent with qualitative data from Malawi, which found that men strategically chose partners who were considered to be less "risky", as judged by their appearance, health, and reputation (Kaler 2004; Smith and Watkins 2005; Poullin 2007). Furthermore, among older adults in Malawi, proxies for the perceived likelihood of HIV infection are strongly associated with the hazard of remarriage (Reniers 2008).

Recognition of the role that health plays in selection into marriage is not new, but it has been largely neglected in research in resource poor countries. Data from the United States and other industrialized countries have demonstrated how physical attributes and health-related behaviors serve as signals of potential health and are significantly associated with the likelihood of marriage (c.f. Fu and Goldman 1996). While evidence from Malawi suggests that perceptions of health and HIV risk are associated with the selection into marriage among older adults, to the best of our knowledge there has been no research in Malawi or any other African country on the role that health may play in the transition to first marriage. This possible relationship is particularly of interest in Malawi, where the declining age at first marriage reflects the pressures that the HIV epidemic is exerting on young adults.

In this paper, we examine whether health serves as a selection factor into early marriage in rural Malawi. If men choose younger women as their wives because of their assumed lower likelihood of HIV infection, we hypothesize that observable signals of health should be associated with the transition to first marriage. We examine this relationship using three indicators of health—self-reported health status, an index of recent symptoms, and Body Mass Index (BMI). We are particularly interested in the association between BMI and the transition to marriage. Fewer than 3 percent of respondents in our dataset can be categorized as overweight, whereas more than a third are underweight, a finding that is particularly relevant to the perception of HIV risk, given that AIDS is most often observed in Malawi as a wasting disease (Kaler 2004). Research from the United States and other industrialized countries also suggest that health-related behaviors are also associated with the transition to marriage, notably negative behaviors such as drug and alcohol abuse. While the available data on drug and alcohol use among adolescents in Malawi is poor, we do examine the association between prior sexual experience and the transition to marriage. However, we acknowledge that this may be an ambiguous relationship: while men may prefer to marry a younger woman because she is less likely to have begun sexual activity and to have put herself at risk of HIV infection, sexual activity is a standard part of the marriage process in Malawi. This analysis will not only provide original quantitative evidence for the health selection effects into first marriage in the context of the HIV epidemic, but will also investigate previously unexamined dimensions of vulnerability to early marriage in a resource poor country.

Data

This paper uses the Malawi School Quality Survey (MSQS), a longitudinal study of adolescents conducted by the Population Council in southern Malawi, the region of the country with the highest prevalence of HIV. The first round of data was collected in Spring 2007, with a one-year follow-up completed in 2008. The original sample consists of 1,675 14-16 year old students who were randomly sampled from the enrollment rosters at 59 randomly selected primary schools in Machinga and Balaka districts. An additional sample of 845 adolescents who were not enrolled in school was drawn from the communities surrounding the selected primary schools. At the second survey round, 92 percent of all respondents were successfully re-interviewed. This analysis focuses on female respondents who were interviewed at both survey rounds, were unmarried at the time of the first survey round, and who had no missing data[1], yielding a final analytic sample of 912 female respondents.

[1] The analysis excludes all respondents who might have been pregnant at the time of the round one survey. This information was estimated using retrospective birth histories collected at round two.

The MSQS focuses on the role of school quality and experience in shaping the transition to adulthood. The first survey round included a detailed health module with questions about current health status and knowledge, as well as the measurement of weight and height. In this analysis, we focus on the association between three health indicators—self-reported health, an index of reported symptoms[2], and body mass index (BMI)—and the likelihood of marriage by the time of the second survey round. The first preliminary model is a logistic regression of the likelihood of marriage, and the second preliminary model uses school-based fixed effect models to fully control for shared school and community characteristics. In addition to the health indicators, all models control for socio-demographic variables, math and literacy skills, and bio-sexual statuses (e.g. experience of puberty, ever had sex). All models are time-lagged, so that characteristics at round one are used to predict the transition to marriage by the second survey round.

Preliminary Analysis

By the time of the second survey round, 46 percent of the female non-students and 15 percent of the female students who were unmarried at round one had transitioned to marriage. We find a significant positive association between BMI and the odds of marriage that is consistent between the two model specifications (Table 1). Self-perceived health is positively associated with the transition to marriage, although this is marginally insignificant at the 10 percent level. There is no association between the odds of marriage and the count of recent symptoms. Having undergone puberty is positively associated with marriage, but there is no association between having ever had sex by round one and the transition to marriage by round two. Other factors strongly associated with the transition to marriage include religion, school enrollment status, and English literacy.

Future analyses will use discrete time data to evaluate the transition to marriage, using data on month of marriage reported at round two. Additional control variables will be considered, in order to determine whether the association between BMI and the likelihood of early marriage can be explained by other observed factors.

References

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[2] Respondents were asked whether or not they had experienced any of the following seven symptoms during the month before the interview: fever, night sweats, rapid weight loss, recurring diarrhea, recurring coughing or shortness of breath, recurring vomiting, recurring fatigue/weakness.

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Table 1. Preliminary regression results, transition to marriage by round two, females aged 14-16 who were unmarried at round one, Malawi, 2007-8

Variables	Logit Regression (Model 1)		Xtlogit Regression (Model 2)	
Self-rated health	0.048		0.057	
Count of symptoms	-0.000		-0.007	
BMI	0.091	**	0.086	*
Ever had sex	0.182		0.161	
Had experienced puberty	0.791	*	0.670	+
Age	0.159		0.123	
Household has tin roof	-0.250		-0.048	
Household has improved toilet	-0.116		0.030	
Household owns bicycle	-0.016		-0.078	
Household raises cotton	0.420	+	-0.028	
Religion (ref. Catholic)				
Muslim	0.759	**	0.885	**
CCAP	0.685	*	0.934	*
Other religion	0.279		0.508	
Enrolled in school	-1.297	***	-1.316	***
Proficient at mathematics	-0.036		0.080	
Able to read English	-0.462	*	-0.432	+
Able to read Chichewa	0.025		0.233	
Constant	-5.828		n/a	
N	912		873	
Log-likelihood	-408.26		-319.82	
LR Chi2	130.08		101.29	