Perceived Risk of HIV Infection and Mental Well-being in Rural Malawi

Ning Hsieh
Population Studies Center
University of Pennsylvania

Introduction

Previous studies have shown that people living with HIV/AIDS have worse mental health than HIV-negative people both in developed and developing contexts. However, little is known about how an individual's perceived risk of HIV infection may also influence her/his mental health outcomes, when the actual HIV status is held constant. In an HIV epidemic, where AIDS is a common cause of death in one's social network, lower mental well-being becomes a public health issue. Individuals may be continuously worried about being infected and may also be grieving the loss of family members. Additionally, perceived HIV/AIDS stigma in the local community may further deteriorate one's mental well-being. At the same time, social support is expected to ameliorate these negative impacts. The purpose of this research is to examine the relationship between the issues related to HIV risk perception and mental well-being in rural Malawi, a Sub-Saharan African country with high HIV prevalence (11-12 %, WHO).

Research Questions

- Is the perceived risk of HIV infection related to mental well-being?
- Is the relationship moderated by the stigma level in the local community and by social support?

Data

The data are from Malawi Diffusion and Ideational Change Project (MDICP) collected in three distinctive districts of rural Malawi: Rumphi (North), Mchinji (Central), and Balaka (South) in 2006 and 2008. The key variables include:

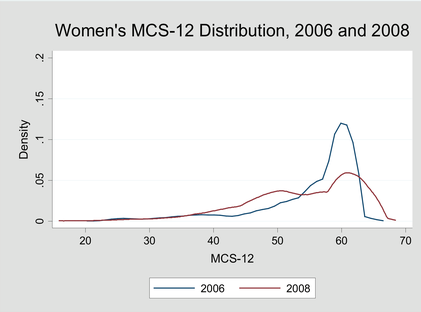
- The 12-item Mental Component Scale (MCS-12) to measure mental well-being.
- The likelihood individuals think they are currently infected with HIV to measure the perceived risk of HIV infection (scaled 0-10).
- Stigma level is indicated by how much individuals perceive community members and religious leaders to be critical of sexually-transmitted HIV/AIDS.
- Social support is an index integrating the frequency of religious participation, attendance to social activities, and civic participation. In addition to using this integrated index, each component of the index is also tested separately in the model. The sample includes 987 women and 762 men.

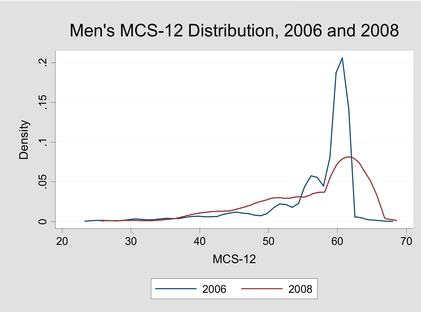
Methods

Fixed-effects approach is used to determine whether change in the perceived risk of HIV infection predicts change in the level of mental well-being over time. Models are estimated separately by gender and take the form:

$$MCS\text{-}12_{it} = \beta_1 \cdot \text{perceived risk}_{it} + \beta_2 \cdot \text{social support}_{it} + \beta_3 \cdot X_{it} + \beta_4 \cdot (\text{perceived risk}_{it} \times \text{social support}_{it}) + \beta_5 (\text{perceived risk} \times \text{stigma}_i) + f_i + \varepsilon_{it}$$

where X_{it} is a vector of individual time-varying characteristics by individual i at time t. f_i is a vector of unobserved fixed factors that determine $MCS\text{-}12_{it}$. Since stigma_i is only observed in 2006, the model cannot estimate its main effects.





Results

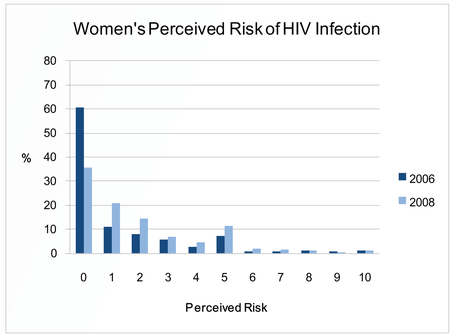
Fixed-effects Linear Regression of Mental Component Scale (MCS-12) on HIV Risk Perception, Women in Rural Malawi

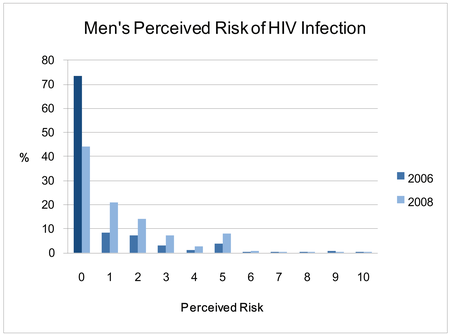
	(1)	(2)	(3)	(4)	(5)	(6)
HIV risk perception	-0.530 ***	-0.513 ***	-0.532 ***	-0.510 ***	-0.505 ***	-0.508 ***
Social support		-0.108	-0.056			
Risk perception x Social support			-0.09			
Religious participation				3.063 ***	3.157 **	3.071 **
Risk perception x Religious participation					-0.317	
Risk perception x Stigma						0.112
Health	2.170 ***	2.199 ***	2.196 ***	2.186 ***	2.198 ***	2.194 ***
Wealth	0.842 *	0.839 *	0.834 *	0.823 *	0.804 *	0.823 *
# Sex partners in the past year	2.221	2.197	2.133	2.225	2.221	2.247
Spouse has >1 sex partners	0.433	0.431	0.419	0.486	0.488	0.487
# Died from AIDS in the community	-0.139	-0.129	-0.136	-0.166	-0.171	-0.166

Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05.

Men's results are similar to women's except that religious participation is not significant.

Except for religious participation, the coefficients of other components of social support are not presented here because they are not significant.





Conclusions

The perceived risk of HIV infection has a significant negative relationship with MCS-12 in rural Malawi. This indicates that not only actual but also perceived HIV infection predicts mental health status.

Although religious participation may boost mental well-being for women, social support in general does not ameliorate the negative association between risk perception and MCS-12.

The stigma level in the local community does not deteriorate the negative association between risk perception and MCS-12. This corresponds to the fact that Malawians have recognized that many cases of infection are not due to sexual infidelity and promiscuity in the epidemic (e.g. faithful spouses and children). The infection cannot always be accounted for by individual moral responsibility. Therefore, the stigma (specific to sexual behavior) in the community may not generate discriminative effects and mental burden.

Limitations

This research might benefit from other social support measures that directly indicate the content and quality of support, such as having confidants to discuss HIV/AIDS concerns. In addition, testing the relationship between HIV risk perception and other mental well-being measures (such as depression and anxiety) will improve our understanding of the domains of mental health that are more seriously affected.

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Penn Demography