

Examining the Applicability of the Information-Motivation-Behavior Skills Model of HIV Preventive Behavior in Uganda

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Background: HIV in Uganda

- HIV/AIDS is a major contributor to morbidity and mortality in Uganda, with an estimated 6% prevalence in the population (UNAIDS, 2005)
- Recent data suggest a concerning increase in incidence (Shafer et al., 2006; Kamali, et al., 2002)
- Among young people who had sex with a non-cohabitating partner, 38% of young men and 56% of young women reported not using a condom (UNAIDS, 2005)

Background: IMB Model

The information-motivation-behavioral skills (IMB) Model of HIV Preventive behavior (Fisher & Fisher, 2005)

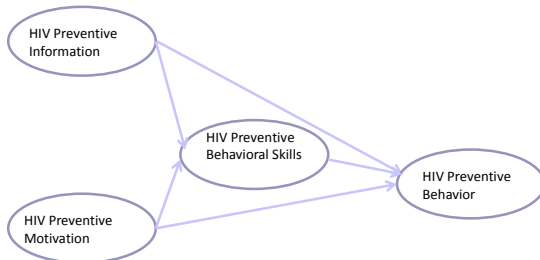
Posits that a trilogy of one's:

- Information about how to prevent HIV,
- Motivation to engage in non-risky behaviors, and
- Skills and abilities in acting out these behaviors

together predict HIV preventive behavior over time.

IMB predicts HIV preventive behavior among adolescents and young adults in the United States (Fisher et al., 2002) and non-Western countries (Bryan, et al., 2000; Linn et al., 2001; Kalichman, 2005).

IMB Model



Motivation includes subjective norms, behavioral intentions, and attitudes

The research question

What is the applicability of the IMB model to predicting condom use among adolescents who are sexually active and attending secondary school in Mbarara, Uganda?

Mbarara Adolescent Health Survey Methodology

- Mbarara, Uganda is the 6th largest urban center in Uganda
- Five participating secondary schools: One Catholic, one Muslim, three government
- Participants were randomly identified
- Eligibility:
 - Current student in grades S1-S4 in one of our 5 partner schools
 - Parental consent was required for day students / Head master consent for boarding students
 - Youth assent

Mbarara Adolescent Health Survey Methodology

- 1,503 S1-S4 students were surveyed cross-sectionally
- Data were collected between September & October, 2008; and March & April, 2009.
- On average, the survey took 1 hour to complete
- Estimated response rate: 87.5%
- Cognitive testing among 'friends and family' youth in S1 was done before fielding to ensure appropriate reading level.
- Per CAB preferences, questions about condoms were only asked of youth reporting sexual activity

IMB Measures

- **HIV prevention information** (Gutmacher; Uganda Demographic Health Survey)
 - 8 items, 1 point for each correct response
 - Example: HIV is small enough to go through a condom
- **HIV prevention motivation**
 - **HIV prevention subjective norms** (Misovich et al.)
 - 11 items, 0-4 scale
 - Example: Friends that I respect think I should not have sex until I'm older
 - **HIV prevention behavioral intentions** (Misovich et al.)
 - 5 items, 0-4 scale
 - Example: I'm planning not to have sex until I'm older

Measures

- **HIV prevention behavioral skills** (Misovich et al.)
 - 7 items, 0-4 scale
 - Example: How hard or easy would it be for you to make sure you do not have sexual intercourse until you're older
- **HIV prevention behavior: Condom use during sex** (MacPhail et al.)
 - 1 item: How often do you use a condom during sex? 5-point scale
 - Dichotomized to: At least some of the time (1) vs. never (0)

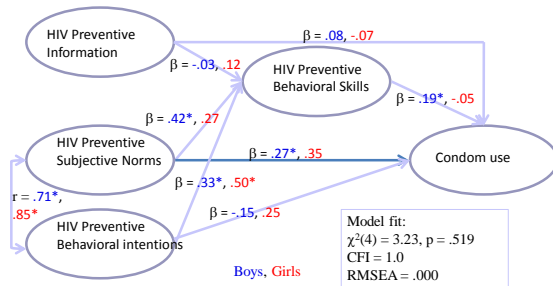
Participant characteristics (n=1503)

Personal characteristics	All youth	Abstinent (73%)	Had sex (27%)	Statistical comparison	p-value
Sex					
Male	62%	57%	74%	X2(1) = 31.9	<0.001
Female	38%	43%	26%		
Age (Range: 12-19+)	14.9	14.7	15.4	t = -8.4	<0.001
Class					
"new" S1	25%	28%	15%	X2(3) = 38.9	<0.001
S1	26%	26%	23%		
S2	25%	24%	27%		
S3	25%	22%	34%		
School type					
Boarding	86%	86%	84%	X2(1) = 0.72	0.4
Day	14%	14%	16%		

Condom use among sexually active

- How often do you use a condom during sex?
 - Never: 58%
 - Less than half the time: 7%
 - Half of the time: 6.5%
 - More than half of the time: 3%
 - Always: 25%
- 73% of those sexually active know where they can **buy condoms**
- 48% of those sexually active know where they can get condoms **for free**

SEM Analysis: Condom Use



Summary

- The I is not predictive for either boys or girls
- The M is somewhat predictive:
 - for boys through subjective norms; similarly strong but non-significant trends for girls
 - neither boys nor girls through behavioral intentions
- The B is predictive for boys but not for girls
- Other factors are not predictive of condom use: self-esteem, social support, orientation to the future, physical health

Limitations

Analyses do not reflect recency of sex: the adolescent could have had sex 5 years ago and been abstinent since then

Sexual activity is a highly stigmatized behavior in Uganda; likely under-reporting based upon self-report

Unable to examine the IMB model to predict abstinence vs. sexual activity due to cultural sensitivities

Implications

- Females appear to be a more heterogeneous group than males when trying to predict condom use. This may require more program tailoring.
- HIV information is uniformly low, suggesting that more attention needs to be paid to this area of the IMB model.



Implications

- The IMB model is better able to predict boys' reports of condom use than girls'.
- It is possible that the areas that are not predictive for condom use are the areas that we need to attend to most in the intervention.
 - E.g., Boost the behavioral skills → boost the link to condom use