

HOW DO SAFER SEX INTENTIONS IMPACT HIV SEXUAL RISK BEHAVIOR IN YOUNG BLACK MEN WHO HAVE SEX WITH MEN? A MEDIATION ANALYSIS

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Background: HIV prevention interventions that reduce sexual risk behaviors among YBMSM, the most severely affected population in the United States, are critical for reducing disparities in HIV infection. The Institute of Medicine (IOM) Integrated Model of Behavior Change was used as the theoretical basis for development of healthMpowerment.org (HMP), a mobile-phone-optimized, Internet-based intervention designed to reduce unprotected anal intercourse (UAI) among YBMSM. The model theorizes that behavioral intentions mediate the relationship between self-efficacy, perceived norms and attitudes and health behavior. This study used baseline data from 474 HMP randomized controlled trial (RCT) participants to test this model.

Methods: Bivariate analyses examined relationships between UAI in the last 3 months and safer sex intentions (intentions to discuss condom use, use condoms, ask sexual partners about HIV status, use alcohol/drugs before sex), self-efficacy to refuse sexual acts, condom use norms and attitudes toward condom use. Mediation analyses were conducted using the SAS PROCESS computational macro to determine if safer sex intentions mediated the relationship between self-efficacy, perceived norms, attitudes and UAI.

Results: The mean age was 24.3 years; 39.5% were HIV-positive. Overall 66.1 % reported one or more acts of UAI with a male partner in last 3 months. Those who reported UAI had lower safer sex intentions ($p < .001$), lower self-efficacy to refuse sexual acts ($p = .014$), lower perceived condom use norms ($p < .001$) and poorer attitudes towards condom use ($p < .001$). In mediation analyses, the relationships between UAI and self-efficacy to refuse sexual acts (estimated indirect effect = $-.02$, $p < .001$) and perceived condom use norms ($-.04$, $p < .001$) were fully mediated by safer sex intentions while attitudes toward condom use ($-.02$, $p < .001$) was partially mediated by safer sex intentions when controlling for age, education, income and HIV status.

Discussion: The findings from this study supported behavioral intentions as a mediator between self-efficacy, norms, and attitudes and health behavior (e.g., UAI) outlined in the IOM Integrated Model of Behavior Change. These factors are important direct and indirect predictors of UAI among YBMSM. Theoretically-based interventions are critically needed to address these predictors in order to reduce UAI among YBMSM.

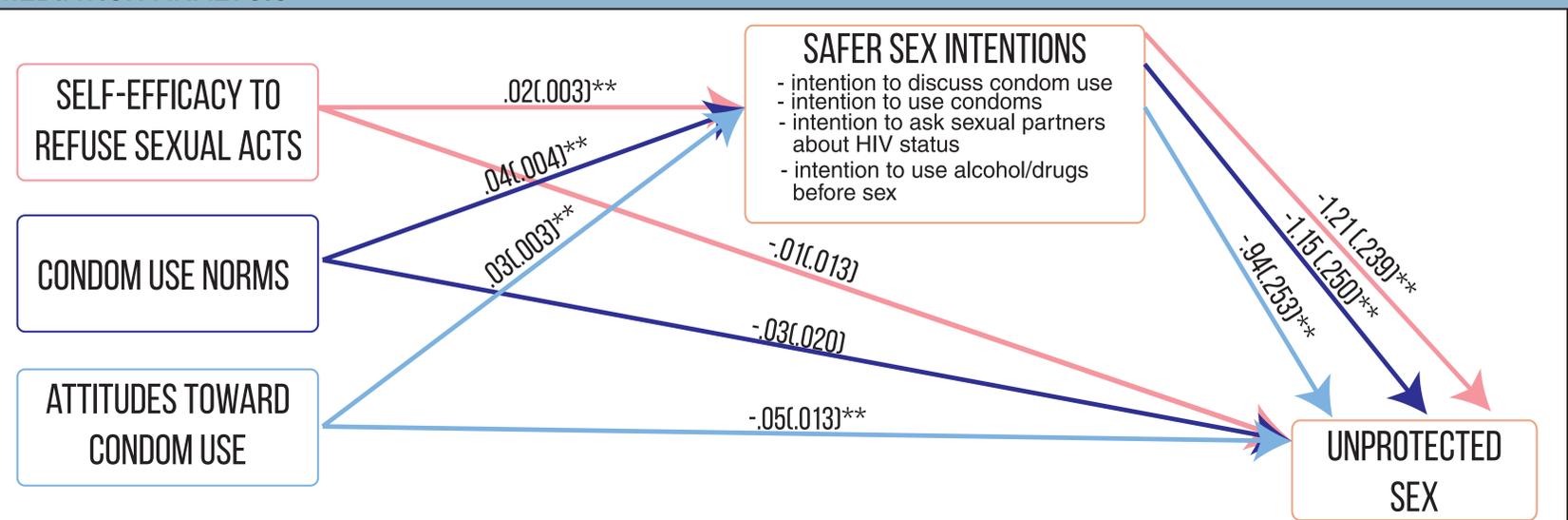
HMP HOME SCREEN

The screenshot shows the HMP home screen with a navigation bar at the top containing 'MPOWER YOURSELF', 'TOOLS FOR HEALTH', 'TESTING & CARE RESOURCES', and 'ASK DR. W'. Below this is a 'COMMUNITY' sidebar with options for 'GETTING REAL', 'LOCAL FLAVOR', 'FORUM', and 'EVENTS'. The main content area features a central banner with the quote 'IT'S EVERYBODY'S DUTY TO GIVE THE WORLD A REASON TO DANCE.' by K.D. PRESIDENT. Below the banner are three sections: 'NEW STUFF' with a video thumbnail, 'NEWSFEED' with a list of forum posts, and 'PROFILE' with a user avatar.

FEATURES

- MPOWER YOURSELF**
Educational articles on hiv, healthy living, sexuality, etc.
- TOOLS FOR HEALTH**
Health toolbox featuring educational quizzes, goal tracker, personal medical journal, risk assessment tests
- TESTING AND CARE RESOURCES**
Educational articles on hiv, healthy living, sexuality, etc.
- ASK DR. W**
Participants can ask an anonymous question to a doctor. Users can also view answered questions.
- GETTING REAL**
Place where users can share multimedia works in the form of video, photo audio or text
- LOCAL FLAVOR**
User-created reviews on local businesses
- FORUM**
Where users can talk about various topics and start new "threads" of discussion
- EVENTS**
Events calendar managed by the study team
- STORE**
Users can "buy" HMP swag, as well as order an at-home HIV test kit sent directly and discreetly to their homes.

MEDIATION ANALYSIS



VARIABLE	SOURCE
Self-efficacy to refuse sexual acts	A scale developed by Kasen and colleagues was used to evaluate self-efficacy to refuse sexual behavior ($\alpha = 0.88$). The 9-item scale used a 5-point Likert scale to determine the degree to which an individual felt they would be able to say no to sexual intercourse under certain circumstances. A higher score indicates greater self-efficacy to refuse sexual behavior.
Condom use norms	The Norms subscale of the Sexual Risks Scale was used to measure condom use norms ($\alpha = 0.85$). The scale includes 7 items with responses based on a 5-point Likert scale. A higher score indicates greater norms for safer sex.
Attitudes toward condom use	The Attitudes Toward Condom Use subscale of the Sexual Risks Scale was used to measure attitudes toward condom use ($\alpha = 0.91$). The scale includes 13 items with responses based on a 5-point Likert scale. A higher score indicates a more positive attitude toward condom use.
Safer sex intentions	An 8-item scale was used to measure safer sex intentions including intention to discuss condom use and HIV status with partner, use condoms, and alcohol/drug use before sex ($\alpha = 0.77$). Items were based on 4-point Likert scale, ranging from very unlikely to very likely. A higher score indicates greater intentions for safer sex.

CONCLUSION

- Participants who reported higher self-efficacy to refuse sexual acts, condom use norms and attitudes towards condom use were more likely to report higher safer sex intentions and participants who reported higher safer sex intentions were less likely report UAI.
- Future analyses will determine if environmental constraints, such as access to free condoms and locations to purchase condoms, moderate the relationship between safer sex intentions and UAI.
- This study highlights the importance of safer sex intentions as a mediator between self-efficacy to refuse sexual acts, condom use norms and attitudes toward condom use and UAI. Interventions designed to reduce risky sexual behavior among YBMSM should include a strong focus on increasing intentions to participate in safer sex.

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