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The Fallacy of Intimacy: Sexual Risk Behaviour and Beliefs about Trust and Condom Use among Men Who Have Sex with Men in South Africa

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Abstract

The objective of this study is to assess (1) whether beliefs about trust and condom use affect sexual risk behaviour, and (2) if beliefs about trust and condom use impact sexual risk behaviour directly or if this relationship is mediated by other determinants. The Information-Motivation-Behavioural Skills model was used as a framework for the mediation analysis. A diverse cohort of three hundred 18–40 year old men who have sex with men (MSM) residing in Pretoria, South Africa, were recruited and surveyed for this project. Findings indicate that men who report a high frequency of past unprotected anal intercourse are more likely to believe that it is not necessary to use condoms with a trusted or steady partner regardless of their current partnership status. This fallacy of intimacy appears to affect sexual risk behaviour through intentions and attitudes regarding safer sex practices. Based on these findings, we recommend that more attention be given to gaining a better understanding of how beliefs about trust and condom use are formed and how they can be changed among MSM in South Africa.

Keywords

HIV; beliefs; trust; condoms; sexual risk behaviour; MSM; South Africa

Introduction

The relationship between sexual risk behaviour and beliefs about trust and condom use remains incompletely understood. Meta-analysis has shown that beliefs, in general, have a strong ability to predict behaviour (Sheppard, Hartwick, Warshaw, 1988). Other research has found that this relationship holds true when predicting sexual risk behaviours (Rotheram-Borus & Koopman, 1991; Crepaz, Hart, Marks, 2004). However, the relationship between beliefs and sexual risk behaviour might be more ambiguous when the beliefs concern trust and intimacy. On the one hand, caring for somebody would involve protecting

them from risk (Appleby, Miller, Rothspan, 1999). Contradictorily, trust also inherently seems to involve a willingness to put oneself at risk (Rempel, Holmes, Zanna, 1985).

Research has shown that the relationship between trust and condom use is complex (Sayles et al., 2006). For instance, Holland and colleagues (1992) discuss the paradoxical nature of sexual safety among young women in the UK: women with the confidence to negotiate condom use, their sense of self was based on a femininity that emphasized love and trust, which discouraged them from introducing condoms into sexual encounters. Establishing trust through unprotected sexual intercourse was found to be a predominating concern to risk of HIV infection among Black South African youth (Varga, 1997). Establishing trust is so important that it precludes discussions on condom use for fear that broaching the topic would imply infidelity. Hoffman and colleagues (2006) found through a diary study of adolescent youth that trust is considered to be so desirable in sexual relationships that it is claimed for even in situations where fidelity (and hence, trust) is absent. Focus group discussions with youth revealed that condoms are generally not seen as necessary within steady sexual relationships, only with casual partners outside of those relationships (MacPhail & Campbell, 2001). Within regular relationships, suggesting using condoms would be seen as indicating a lack of respect; rather, partners are expected to trust each other to keep themselves safe against sexually transmitted infections. STD-infected patients also reported that suggesting condom use was discouraged because it would indicate a lack of trust in your partner (Meyer-Weitz, Reddy, Weijts, Van Den Borne, Kok, 1998).

Research has shown that beliefs about trust also affect sexual risk behaviour among men who have sex with men (MSM), and that men who assume regular partners to be safe partners engage in risky sexual behaviour. For example, Boulton, Mclean, Fitzpatrick and Hart (1995) found that men who reported having engaged in unprotected anal intercourse during the past five years and who explained the sexual risk behaviour in terms of trust, that virtually all of these encounters occurred with a regular partner. McLean et al. (1993) reported that a majority of MSM surveyed in the UK had unprotected intercourse with a regular partner and did not view this behaviour as risky, despite most men not knowing their partner's serostatus.

The majority of research about the effects of beliefs about trust and intimacy on sexual risk behaviour among MSM has examined this topic within intimate relationships. For instance, Appleby and colleagues (1999) found that long-term male couples used trust and commitment to justify having engaged in unprotected oral and anal sex. Offir, Fisher, Williams and Fisher (1993) found through focus group discussions with MSM that the majority of participants believed that monogamy was adequate protection against HIV, despite most of their partners never having been tested for HIV. There remains a need to understand how beliefs about trust and condom use affect sexual risk behaviour among MSM regardless of their relationship status.

While associations between beliefs about trust and condom use and unsafe sex have been reported, it remains unclear whether these beliefs have a direct effect on sexual risk behaviour or if this relationship is mediated by other determinants. For effective prevention, it is important to understand through which pathways these beliefs impact sexual behaviour.

The purpose of the current study is to test whether beliefs about trust and condom use are associated with sexual risk behaviour, and to assess if that relationship is mediated by other proximal determinants. We examined these questions among a diverse cohort of MSM in South Africa. The current study utilized the Information-Motivation-Behavioural Skills (IMB) model as a framework for the mediation analysis. The IMB model contends that knowledgeable and motivated individuals will utilize behavioural skills to engage in HIV

preventive behaviour (Fisher & Fisher, 1992). The model has been extensively validated in multiple settings among a variety of populations (Fisher & Fisher, 2000), including South Africa (Kalichman et al., 2006; Simon, Altice, Moll, Shange, Friedland, 2008). We hypothesized that beliefs about trust and condoms are positively associated with sexual risk behaviour and that this relationship is mediated by the proximal determinants of the IMB model.

Methods

Procedure

Men were eligible to participate in the study if they (1) lived in the greater Pretoria metropolitan area; (2) were between 18 and 40 years old; (3) reported having had oral, anal, or masturbatory sex with at least one man in the preceding year, regardless of involvement with women and including men who self-identify as gay; and (4) were conversant in English. To promote heterogeneity in the sample, our goal was to stratify participants by age (MSM above and below 25 years of age), race and socioeconomic status (white MSM, black MSM living in townships and black MSM living in the city of Pretoria). Because accessibility to MSM in South Africa varies based on race and socioeconomic status, multiple recruitment strategies were deployed in order to accomplish our goal. White men were recruited at a local gay night club. Resourced, black men were invited to attend social events at an LGBT community centre. For under-resourced, black men, social functions were held in various locations throughout local townships and attendees were invited to participate in the study. Informed consent was obtained verbally by the interviewers. Once confirmed, all participants were asked to fill out the questionnaire on the spot. Interviews were administered using Computer-Assisted Self-Interviewing in order to minimize social desirability bias. Privacy was maintained by having participants complete the survey in quiet, usually adjacent rooms. A total of three hundred men were surveyed for the project. Participants were compensated financially for their time. Participant recruitment and data collection were conducted from October to December 2008. The research protocol was approved by the Institutional Review Boards at the New York State Psychiatric Institute and the South African Human Sciences Research Council.

Measures

The survey collected information on demographic characteristics, relationship status, behavioural determinants, HIV testing and sexual risk behaviours. *Beliefs about Trust and Condom Use* were measured using two items: "Once you trust your partner, you don't need to use condoms with them" and "It is safe to have sex without a condom if it's with your steady partner." Response options were True, False or Don't Know. Participants were assumed to endorse these beliefs if they did not indicate that these statements were false. The possible highest score of beliefs about trust and condom use is 2 (range: 0–2). The measure showed high internal consistency in the study sample with the Kuder-Richardson Formula 20 ($K-R 20$) = .77.

Relationship Status was assessed by asking men if they were currently involved in an ongoing sexual relationship with a man. Response options were Yes or No. Men who responded yes were asked how long this relationship had been going on. Response options were less than one month, one to six months, seven months to a year and more than one year.

The constructs of the IMB model were assessed by measuring knowledge, intentions, attitudes, perceived social norms, and self-efficacy regarding HIV preventive behaviours. All of the IMB items were assessed using previously validated instruments (Bryan, Fisher,

Benziger, 2001; Cornman, Schmiede, Bryan, Benziger, Fisher, 2007; Simbayi et al., 2005). All of the IMB constructs other than knowledge were measured on 5-point Likert scales. *HIV knowledge* was measured using four items. HIV knowledge questions included: “As long as both partners wash themselves after sex, it is not necessary to use condoms”; “Having a shower after sex prevents the spread and infection of HIV, therefore it is not necessary to use condoms”; “It is easy to get HIV by sharing a meal with someone who is HIV infected”; and “You can tell by looking at someone if they have HIV.” Response options were True, False or Don’t Know. *HIV knowledge* scores were calculated as the number of correct answers provided; Don’t Know was coded as incorrect. The possible highest score is 4 (range: 0–4). K–R 20 in this sample was .77. *Safer sex intentions* were assessed using three items that asked how likely it would be for the respondent to use a condom during insertive anal sex, during receptive anal sex, or to always talk with sexual partners about safer sex (Cronbach’s $\alpha = .86$). Response options ranged from 1 = ‘Very unlikely’ to 5 = ‘Very likely.’ *Attitudes towards condom use* were measured using four items that asked how it would be to always use condoms during insertive or receptive anal sex with steady or non-steady partners ($\alpha = .88$). Response options ranged from 1 = ‘Very awful’ to 5 = ‘Very nice.’ *Social norms supporting condom use* were measured using four items that asked how true it would be that most people who are important to the person think that he should use a condom during insertive or receptive anal sex with a steady or non-steady partner ($\alpha = .89$). Response options ranged from 1 = ‘Very untrue’ to 5 = ‘Very true.’ *Perceived behaviour skills* were assessed by measuring respondents’ self-efficacy for implementing HIV preventive skills. The measure included six items that asked how easy it would be for the respondent to perform certain HIV preventive behaviours, such as talking about condom use with regular/steady partners, getting tested for HIV, and not having any insertive or receptive anal sex without a condom ($\alpha = .81$). Response options ranged from 1 = ‘Very difficult to do’ to 5 = ‘Very easy to do.’ For all IMB items, a high score indicates a stronger presence of the construct.

HIV sexual risk was assessed using the Sexual Practices Assessment Schedule, a previously validated tool with demonstrated re-test-reliability (Carballo-Dieuez, Dolezal, Nieves-Rosa, Diaz, 1995; Carballo-Dieuez, Remien, Dolezal, Wagner, 1999), and which had been adapted for other studies (Schrimshaw, Rosario, Meyer-Bahlburg, Scharf-Matlick, 2006).

The measure included questions about the number of occasions of different sexual acts (oral, anal; receptive, insertive) with three different types of partners, with or without protection. The primary outcome of interest for the study is the frequency of unprotected anal intercourse (UAI) with male sex partners in the past two months. The frequency of UAI ranged from 0 to 100 ($M=3.7$, $SD = 10.3$, Skewness = 5.376, Kurtosis = 36.5). Since the distribution of the outcome variable was positively skewed, we used the logged values of UAI (Skewness = 1.47, Kurtosis = 1.38).

Data Analyses

First, univariate analyses were conducted to examine variability and central tendency of the study variables. Bivariate correlation analyses examined the relationships between predictor variables to ensure that the model would not be affected by multicollinearity among the variables. We tested the effects of the constructs from the IMB model on the relationship between beliefs about trust and condom use and UAI using Ordinary Least Squares (OLS) regression models. We followed mediation analysis guidelines suggested by Baron and Kenny (1986). For mediation to occur: 1) the predictor must have a significant association with both the mediator and the outcome variable; 2) in the full model, the mediator must also predict the outcome variable; and 3) the size and significance of the association between the predictor and the outcome variable must be reduced. All multiple regression models presented in this article were controlled for age, race and township, and HIV status,

which were found to be significantly related to mediation variables in bivariate comparisons. In order to test the significance of mediation effects, we performed Sobel tests (1982), for which statistics were calculated using the following formula: $z = a \cdot b / \sqrt{b^2 \cdot Sa^2 + a^2 \cdot Sb^2}$, where a equals the unstandardized regression coefficient (Beta) for the association between a predictor (X) and mediator (M); Sa equals to standard error (SE) of a ; b equals Beta for the association between M and outcome (Y); Sb equals to SE of b . SPSS 17.0 was used for statistical analysis.

To assess whether beliefs about trust and condom use might be justified among men who reported being in a steady relationship, crosstab analyses were run between variables assessing steady relationship status and sexual risk behaviours. These analyses revealed that similar proportions of men in steady relationships as compared with men not in steady relationships (9.5% compared with 12.5%) reported having unprotected receptive anal intercourse with more than three men in the past 2 months. Less than half of both groups of men (43.7% compared with 38.9%) reported knowing that the man/men who penetrated them was/were HIV negative. Crosstab analyses also revealed that sexual risk behaviour occurred regardless of the length of the relationship that men were involved in: 8.6% of men in a relationship of more than one year reported having unprotected receptive anal intercourse with more than three men in the past 2 months. Again, less than half of them (39.5%) reported knowing that the man/men who penetrated them was/were HIV negative. Based on these results, there was no reason to assume that the reported unprotected anal intercourse in steady relationships was safe, or that beliefs about trust and condom use were justified in their situation.

Results

Participants

Participants' age ranged from 18–40 years with a mean of 26.1 years ($SD = 5.9$). Approximately two thirds (64.3%) of participants were Black and one third (32.7%) were White. Half of the participants (49.7%) reported living in a township, all of whom were Black. Participants ranged in educational level from not having completed primary school to holding post-graduate degrees. About one third of respondents (38.0%) had graduated from secondary school. The majority of the men (83.0%) self-identified as gay; 9.7% self-identified as bisexual, 3.7% as straight, and 2.0% as transgender. More than half of the participants (54.3%) reported being in a steady relationship with a same-sex partner at the time of the survey.

As shown in Table 1, beliefs that condom use was not necessary with trusted and steady partners were significantly more common among Black MSM in townships and among White MSM than among Black MSM in the city ($p = .009$). HIV negative respondents were also significantly more likely to hold these beliefs than HIV positive respondents ($p = .033$). There was no difference in beliefs about trust and condom use between men who reported being in an ongoing sexual relationship with another man and those who did not. No other sociodemographic variable was significantly associated with beliefs about trust and condom use.

Bivariate Correlations Analysis

Table 2 shows means, standard deviations of and correlation coefficients between the study variables: beliefs about trust and condoms, constructs from the IMB model, and sexual risk behaviour (logged frequency of unprotected insertive and receptive anal sex). Scores on the two items assessing beliefs about trust and condom use ranged from 0–2 with a mean of 0.58 ($SD = 0.82$). Overall, the participants reported high scores on the measures of the IMB

constructs. On average, men reported a mean of 3.68 ($SD = 10.31$) UAI encounters in the past two months.

Significant negative correlations were observed between beliefs about trust and condom use and HIV knowledge ($r = -.14$), attitudes towards condom use ($r = -.20$), perceived norms of condom use ($r = -.13$), safer sex self-efficacy ($r = -.17$), and safer sex intentions ($r = -.19$). All of the mediation variables were significantly positively correlated with each other, except for HIV knowledge and safer sex intentions, with correlation coefficients ranging from $r = .17$ to $r = .54$. Significant negative correlations were observed between UAI and HIV knowledge ($r = -.14$), attitudes towards condom use ($r = -.23$), perceived norms of condom use ($r = -.12$) and safer sex intentions ($r = -.38$). A significant positive correlation was observed between beliefs about trust and condom use and sexual risk behaviour ($r = .20$, $p < .01$).

Mediation Analysis

Multiple regressions were conducted to examine the effects of the IMB variables on the relationship between beliefs about trust and condoms and UAI (Table 3). Age, race and township, and HIV status were controlled for in all of the regressions. Beliefs about trust and condoms were positively associated with UAI (direct $\beta = .163$, $p < .001$) and negatively associated with all mediation variables, with β s ranging from $-.232$ to $-.146$. All the tested mediators, except self-efficacy, were negatively associated with UAI at $p < .05$. In mediation analyses, the association between beliefs about trust and condoms and UAI was no longer significant when intentions and attitudes were entered into the models (indirect $\beta = .091$ and $.115$, respectively). Sobel tests supported the findings of partial mediation by intentions and attitudes with the respective test statistics: $z = 2.96$, $p = .003$; $z = 2.51$, $p = .012$.

Partial mediation effects were observed when the variables social norms and knowledge were entered into the models as they modestly attenuated the effect of beliefs about trust and condoms on UAI (indirect $\beta = .144$ and $.143$, respectively). These mediation effects were not significant using Sobel tests at $p < .05$. Thus, norms, self-efficacy, and HIV knowledge were not included in the final regression model because they failed to meet all three of the necessary conditions for assessing mediating effects (Barron & Kenny, 1986). Ultimately, a final regression model was conducted that included all of the potential mediating variables (intentions and attitudes). The positive association between beliefs about trust and condoms and UAI was completely mediated by the inclusion of these variables; this model accounted for 19.3% of the total variance in UAI.

Discussion

This study demonstrates multiple key findings. First, men who reported a high frequency of past unprotected anal intercourse were more likely to believe that it is not necessary to use condoms with a trusted or steady partner. Second, beliefs about trust and condom use seemed to affect sexual risk behaviour through intentions and attitudes regarding safer sex practices. In other words, people who believed that it is not necessary to use condoms when with a trusted or steady partner were less likely to intend to participate in HIV preventive behaviours and to have positive attitudes towards those behaviours.

These findings were reached in a sample of MSM in South Africa, a population in which, to our knowledge, this topic had not yet been assessed. This is not surprising given how little is currently known about the impact of HIV on this population or their sexual risk behaviours regarding HIV (Reddy, Sandfort, Rispel, 2009; Sandfort, Nel, Rich, Reddy, Yi, 2008).

Interestingly, our findings also indicate that beliefs about trust and condom use influence sexual risk behaviour among both men involved in steady relationships and among those who are not. This finding suggests that beliefs about trust and condom use are not formed as a result of being in a steady relationship, but are held independently of men's relationship status.

The results of our mediation analysis indicate that beliefs about trust and condom use are associated with attitudes and intentions towards HIV preventive behaviours. Controlling for attitudes and intentions towards condoms was able to negate the association between beliefs about trust and condom use and sexual risk behaviour. We theorized that beliefs influence attitudes and intentions, as the more proximal determinants of sexual risk behaviour, although we are unable to definitively assert the flow of causality. It is equally possible to infer from our results that attitudes towards condoms and intentions to use them determine men's beliefs about condoms and whether it is necessary to use them with trusted or steady partners. Future research should explore more rigorously the relationship between beliefs, attitudes, intentions and sexual risk behaviour, and investigate further how beliefs about trust and condom use are formed.

Belief formation is an especially salient issue in Southern Africa as multiple competing claims are being made regarding HIV (Knox, 2010; Schneider & Fassin, 2002), and people are left to decide what they choose to believe. The observed beliefs about trust and condom use might be a result of people choosing to believe that steady and trusted partners are safe partners, therefore precluding the need to use HIV preventive behaviours with them. The persistence of these beliefs might also be a result of people receiving conflicting information about HIV prevention, harm reduction messages versus advice on how to completely eliminate HIV risk, and choosing what they prefer to believe from that advice. Research needs to be done to learn about the contexts in which these beliefs are utilized and why men choose to believe them instead of completely assessing their validity. More attention should also be given to gaining a better understanding of how these beliefs can be changed.

There are several limitations to our study. First, the cross-sectional research design does not allow inference of causality. From this data, we are unable to tell whether beliefs about trust precede sexual risk behaviour or if they are adopted as a result of it. Second, our results were found among a convenience sample of MSM in South Africa and are not intended to be generalized outside of this population. Third, even though we used Computer-Assisted Self-Interviewing, the data we collected is self-reported and could have been biased by social desirability. Fourth, only two items were used to assess beliefs about trust in this analysis; in future research this construct could be more robustly examined. Lastly, the constructs measured were developed in Western settings, and although they have previously been demonstrated to be reliable and valid in South Africa, there may be additional culture-specific factors that have not been accounted for in the current study.

Despite these limitations, our findings support the assertion that HIV prevention efforts need to be comprehensive as multiple factors affect decision-making processes regarding sexual behaviour (Gold, 2000). Specifically, HIV prevention efforts need to focus on dispelling this fallacy of intimacy as it was found to increase peoples' risk of exposure to HIV infection by negatively impacting their attitudes towards HIV preventive behaviours and their intentions to practice them. These findings are particularly relevant to public health efforts considering that MSM have been identified as a vulnerable group that requires special attention by South Africa's National Strategic Plan for HIV/AIDS (NDoH, 2007). This strategic plan specifically states that efforts need to be increased to prevent HIV transmission among MSM by promoting the use of condoms. Educating men about the need for condom use with trusted and regular partners should be an important component of HIV prevention efforts.

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Table 1

Characteristics of participants and comparison by beliefs about trust and condom use

	N	M (SD)	p value
Age			.743
< 24 yrs old	140	.59 (.81)	
> 25 yrs old	125	.56 (.82)	
Race and township			.009
Black in townships	149	.64 ^a (.85)	
Black in the city	40	.23 ^b (.53)	
White	95	.67 ^a (.84)	
Highest level of education			.210
< 12th grade	147	.64 (.85)	
> 12th grade, diploma or degree	148	.52 (.78)	
Employment Status			.326
Employed/ Self-employed	95	.52 (.77)	
Not employed	198	.62 (.84)	
Student Status			.245
Student	221	.62 (.84)	
Not a student	72	.49 (.75)	
Income			.091
< 4500 Rand/Month	157	.65 (.85)	
> 4500 Rand/Month	137	.49 (.77)	
Religious Status			.212
Religious	58	.71 (.84)	
Not Religious	225	.56 (.82)	
Self-label			.718
Gay	249	.57 (.82)	
Non-Gay	45	.62 (.81)	
Relationship Status			.240
In a steady relationship	163	.63 (.85)	
Not in a steady relationship	131	.52 (.78)	
Self-reported status			.033
HIV-negative	252	.62 ^a (.83)	
HIV-positive	36	.31 ^b (.62)	

Note: 1. Numbers with different superscripts are significantly different by Tukey pairwise comparisons at $p < 0.05$.

Table 2
Means, standard deviations of and correlations among predictor, mediator, and outcome variables

	<i>M (SD)</i>	2	3	4	5	6	7
1. Beliefs about trust and condom use	0.58 (0.82)	-.14*	-.20**	-.13*	-.17**	-.19**	.20**
2. HIV knowledge	3.46 (0.26)	-	.21**	.20**	.17**	.09	-.14*
3. Attitudes toward condom use	4.01 (1.14)		-	.54**	.33**	.51**	-.23**
4. Perceived norms of condom use	4.05 (1.18)			-	.28**	.28**	-.12*
5. Safer sex self-efficacy	3.42 (1.10)				-	.27**	-.09
6. Safe sex intentions	4.06 (1.19)					-	-.38**
7. Log N of unprotected sexual acts <i>I</i>	0.31 (0.46)						-

Note:

I Number of unprotected sexual acts (*M* = 3.68, *SD* = 10.31)

* $p < .05$.

** $p < .01$.

Table 3
Regression Models of Mediators between Beliefs about Trust and Condom Use and UAI

	X → M	M → Y	X, M → Y	R ²	Sobel Test	
					z	p
Beliefs about trust and condom use (X) / UAI (Y) (X → Y: β = .163 [*])						
Knowledge (Mk)	-.146 [*]	-.149 [*]	.143 [*]	.057	1.627	.104
Attitudes (Ma)	-.199 ^{**}	-.251 ^{***}	.115	.090 ^{**}	2.506	.012
Social Norms (Msn)	-.166 ^{**}	-.155 [*]	.144 [*]	.058	1.764	.078
Self-efficacy (Mse)	-.232 ^{***}	-.112	.145 [*]	.045	1.509	.131
Intentions (Mi)	-.209 ^{***}	-.404 ^{***}	.091	.188 ^{***}	2.962	.003
IMB Constructs (Mi, Ma)			.082	.193 ^{***}		
IMB Constructs (Mi, Ma, Msn, Mse, Mk)			.089	.200 ^{***}		

Note. 1. X: Predictor; M: mediator; Y: Outcome. 2. Regression models were controlled for the variables of 'age,' 'race × township,' and 'self-reported HIV status' which were found to be significantly associated with predictor and mediator variables. 3. Standard regression coefficient $X \rightarrow Y$ was .163 ($p = .012$). 4. Sobel test statistics are calculated using the following formula: $z\text{-value} = a \cdot b / \text{SQRT}(b^2 \cdot \text{sa}^2 + a^2 \cdot \text{sb}^2)$, where a = unstandardized regression coefficient (B) for the association between X and M; sa = standard error (SE) of a; b = B between M and Y; sb = SE of b.

*
p < .05.
**
p < .01.

p < .001.