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HIV Sexual Risk Behavior and Health Insurance Coverage in Men Who Have Sex with Men

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Abstract

Research on the association between health insurance coverage and sexual risk behavior among men who have sex with men (MSM) is sparse. We hypothesized that MSM with health insurance would be less likely to engage in risky sexual behavior based on previous research showing that insured persons increase contact with providers which can improve health knowledge, decrease tendency to engage in unhealthy behaviors, and raise awareness about health risks. As part of a study testing an online HIV prevention intervention, we collected information on health insurance and sexual behavior from MSM ($n=650$). Overall, men with health insurance had a 28% reduced prevalence of unprotected anal intercourse male partners (UAIMP) in the 90 days prior to the survey. Potential explanations include access to healthcare providers and awareness of sexual health. Additional research is needed to identify the mechanism through which health insurance is protective.

Keywords

HIV; men who have sex with men; health insurance; sexual risk behavior; health behaviors

Introduction

In the US, men who have sex with men (MSM) remain the population at greatest risk for HIV. Male-to-male sexual contact remains the largest HIV transmission category in the United States and from 2006 to 2011 is the only category associated with an increasing percentage of HIV/AIDS diagnoses (Centers for Disease Control and Prevention, 2011).

Health insurance is an important component to health. The US Census Bureau (2009) defined health insurance coverage as private coverage (coverage through an employer, union or purchased individually) or government coverage (coverage through federal programs such as Medicare, Medicaid, military health care, the Children's Health Insurance Program, or an individual state plan). People buy health insurance to protect them against the possibility of financial loss in the future, which can result from high healthcare expenses due

to use of services for numerous reasons. Health care costs continue to rise, so people need greater assistance with covering medical expenses. Health insurance provides some measure of protection for consumers, especially those with limited means or a greater need for medical care than the average individual. Insurance is considered important because the negative consequences of lacking health insurance have been well-documented (Fernandez, 2010). Uninsured individuals are more likely to avoid needed healthcare than people with health coverage; they often forego services for preventable or chronic conditions which often leads to worse health outcomes (Kaiser Family Foundation, 2005). Additionally, uninsured individuals are less likely to have a “usual place of care,” which is important in establishing relationships with healthcare providers, and in turn those individuals are more likely to access preventive services (DeVoe, 2003). According to the Centers for Disease Control and Prevention (2010), recent data show a decline in health insurance coverage for adults. Based on data from January-September 2009, 58.4 million (19.4%) persons in the U.S. were uninsured for at least part of the year. It is important to determine what effect a lack of health insurance has on different facets of health, including determining what characteristics and populations are at higher risk for the negatives effects of lacking health insurance. We consider it important to identify if MSM are at higher risk of negative health effects associated with a lack of health insurance, and to determine if certain characteristics or health behaviors are related to health insurance coverage.

While many demographic characteristics have been identified in MSM as being associated with risky sexual behavior, little attention has been paid to whether health insurance coverage is associated with risky sexual behavior in this population. Indeed, we could find no published studies examining the effects of insurance coverage on MSM's sexual health. Prior findings in other populations, however, have shown that health insurance coverage may be associated with health behaviors and lifestyle risk behaviors (Newhouse, 1993; Kenkel, 2000; Dave & Kaestner, 2009; Courbage & Coulon, 2004; Hughes, Hannon, Harris, & Patrick, 2010; Kelly & Markowitz, 2009).

Existing literature provides contradictory evidence regarding health insurance and health behaviors. Some research supports the hypothesis that having insurance increases healthy behaviors. Kenkel (2000) reported that in general, people with private health insurance are more likely to engage in health-promoting and disease-preventing behaviors than those without health insurance. Courbage and Coulon (2004) found that in women, having private health insurance increased the probability of exercising and undergoing breast cancer screening in the UK. The authors speculated that having insurance contributed to individuals being more concerned about the risks they are facing, which ultimately lead to healthier choices. Finally, Dave and Kaestner (2009) compared pre-to post-age 65 changes in behaviors among uninsured males as they became eligible for Medicare to a 63 and 64 year old control group and found that exercise decreases and smoking and drinking alcohol increases with health insurance in the experimental group. However, the authors found evidence that physician counseling is successful in positively changing unhealthy behaviors. They argued that increased contact with healthcare providers granted by insurance might improve health knowledge and decrease the tendency to engage in harmful health-related behaviors.

Other research has demonstrated that health insurance coverage is associated with unhealthy behaviors. Hughes, Hannon, Harris, and Patrick (2010) demonstrated that poor health behaviors and disparities in health behaviors are more prevalent among those who have health insurance than those without. The authors found that the percentages of their sample not receiving clinical preventive services according to recommendations were as high as 73.9% (influenza vaccination) and 49.1% (colon cancer screening), and that these behaviors varied across differing income, racial, and access to care strata. They concluded that poor

health behaviors and disparities based on demographic factors exist. Lastly, Kelly and Markowitz (2009) hypothesized that those with health insurance have less incentive to guard against illness and change their health-related behaviors (e.g., poor diet and less exercise) accordingly. Their results supported their hypothesis that having health insurance was associated with a higher body mass index and an increased probability of being classified as overweight.

Taken together, it is difficult to predict the association between health insurance and health behavior, which may be population and health behavior specific. The current study aimed to examine what relationship, if any, exists between health insurance status and certain demographic characteristics of MSM, and between health insurance and sexual risk behavior. Since previous research has shown that less education is associated with risky sexual behavior among this population (Hospers, Kok, Harterink, & de Zwart, 2005) it is plausible that those without health insurance (with education as a cofactor) may engage in riskier sexual behavior as well. Hence, we considered it important to examine demographic differences within the population. Based on the findings of Courbage and Coulon (2004) we hypothesized that MSM with health insurance would be less likely to engage in risky sexual behavior than MSM without health insurance. We reasoned that increased contact with healthcare providers (afforded by having insurance) may increase access to health knowledge and awareness, thereby decreasing the tendency to engage in risky sexual behavior. Improving health access through insurance may also increase referrals to safer sex specific counseling and interventions.

Methods

Data Collection Procedures and Sample

As part of a larger study testing an HIV prevention online intervention (Rosser et al., 2010), we collected information on health insurance status and sexual risk behavior from 650 MSM. Participants were recruited online during a three week period from December 2007 to January 2008. The final sample consisted of MSM living in the United States and was recruited from two of the nation's largest gay/bisexual Web sites and emails to participants from previous research connecting MSM to the study Web page. The study's methods are reported in detail elsewhere (Rosser et al., 2010). In brief, banner advertisements were displayed on the websites to recruit potential participants. Interested men were screened for eligibility using a masked eligibility screening tool. Only enrollees who described themselves as males, 18 years of age or older, who reported a history of engaging in unprotected anal intercourse with at least one other man, and at time of survey were able to enter a US residential zip code were considered eligible. Of the 4,566 individuals who visited the site, 3,508 were screened and 1,027 were deemed eligible. Of the 711 who completed the consent process and were randomized into intervention and control arms, 659 began the baseline survey and 650 participants (or 99% of those who enrolled and started the study) completed the survey. The study website was encrypted to ensure that transmission of information was secure. The entire survey consisted of 17 sections and 170 total questions, but only the pre-test data (1 section and 41 questions) was of interest for this analysis. An incentive of \$80 was offered to participants for their time (Rosser et al., 2010).

Measures

Demographic questions were taken from the 2000 US Census and included questions on: race, ethnicity, and urban-rural residency. Age and education were asked in years (Rosser et al., 2009). Relationship status was measured by whether participant was in a long-term relationship with another man with whom they have sex (yes/no), and HIV status was measured by whether the participant was HIV positive or HIV negative. Sexual orientation

was measured using the attraction domain from the Kinsey Scale which plots sexual orientation on a 7-scale continuum, with adapted language for readability from attraction to exclusively men (score of 0), to men and women (score of 4), and to exclusively women (score of 6) (Kinsey, Pomeroy, & Martin, 1948). Respondents were also asked how they self identify their sexual orientation. Given the low prevalence (31.43%) of responses other than gay, we used a binary variable of gay/not gay for analysis.

To measure sexual risk behavior a sum was created from two questions asking participants with how many men they had unprotected anal sex in the last three months. The first question was, "In the last three months, of the men you met online and then had anal sex with, with how many did you have unprotected anal sex (no condom) at least once?" The second question was, "In the last three months, of the men you met offline and then had sex with, with how many did you have unprotected anal sex (no condom) at least once?" This sum yielded a count of UAIMP. The last three months were chosen to maximize recall reliability. Health insurance was measured with a single item that asked participants whether or not they currently had health insurance.

Data Analysis Procedures

Chi-square tests and Fisher's Exact tests were used to compare participants with and without health insurance on key demographic variable. Negative binomial regression was used to determine the association between health insurance and the number of UAIMP. We selected the negative binomial model because of overdispersion which violates the assumptions underlying the Poisson distribution. Stata version 10.1 was used for data analysis (StataCorp, 2007).

Results

The demographic characteristics of the sample are reported in Table 1. Most participants were residents of a large city (43.0%) or a suburb of a city (23.6%), and were well-educated (99.0%), were not in a long-term relationship at time of survey (75.5%), were HIV negative (78.2%), and were white (68.2%), (Table 1). Sexually, most participants reported being attracted exclusively to men (68.6%). The sexual behavior of participants had a large range from 0-175 unprotected anal intercourse male partners (UAIMP) in the past three months with prominent outliers (one person reported 175 partners and one person reported 123 partners). The median number of UAIMP partners in the past three months was three, and interquartile range was five. In all, 526 (81.2%) had health insurance at time of survey and 122 (18.8%) of participants did not have health insurance (see Table 1).

Table 2 displays the bivariate analysis of health insurance status and demographic variables of interest. MSM with health insurance were more likely to be in a relationship and were more educated than MSM without health insurance. There were no other statistically significant bivariate comparisons.

The unadjusted negative binomial regression model showed that MSM with health insurance were approximately 30% less likely to engage in risky sexual behavior than those without health insurance ($PRR=.70$, $CI=.50$, $.94$). Controlling for demographic characteristics modestly attenuated this relationship to a 28% reduction in the frequency of UAIMP ($PRR = 0.72$, 95% $CI = 0.60$, 0.90) (see Table 3).

Discussion

Our results demonstrated that health insurance had a protective association with UAIMP among MSM. The MSM with health insurance coverage may be more likely to visit their

healthcare providers frequently and in turn increased contact with healthcare providers may improve a number of related sexual health factors including HIV testing, safer sex education, referral to HIV prevention programs, overall health awareness or some combination of these and other factors. The only demographic variable significantly related to insurance was education. The relationship between insurance and sexual risk remained significant after education was controlled for, suggesting that insurance, not education (as suggested by prior research), may be driving this relationship. Future research should investigate what specific aspects of having health insurance (e.g., HIV testing, education, awareness) are associated with reducing the risky sexual behavior of MSM. To establish causality, longitudinal studies of MSM should consider including health insurance status as a variable to examine changes over time and insurance status.

Policy-wise, these results are exciting and timely because of predicted changes in insurance coverage in the US. As the US moves towards requiring universal insurance coverage, if the relationship between insurance coverage and sexual risk behavior is causal, then we can expect risk behavior to decrease. While more research is needed to understand how insurance coverage is related to risk behavior, our findings may indicate that changes in insurance in the US represent a unique “teachable moment” for reaching MSM and decreasing risk. To maximize the opportunity to lower risk, HIV prevention agencies targeting MSM may wish to develop resources for MSM who have not previously had insurance, and/or who have limited experience accessing health resources. Similarly, insurance agencies and health clinics may wish to tailor educational resources for MSM about how to talk with a health professional about sexual health, risk behavior and opportunities for HIV and STI testing.

Limitations

This study had some limitations with regards to the study design, sample collected, and nature of the data. First, these data were gathered from a convenience online sample recruited from a gay sex seeking site, and only men who chose to visit the study site had the opportunity to participate in the sample. Therefore these results may not generalize to MSM who visit other websites and do not generalize to the larger population of MSM. Our sample over-recruited men engaging in high-risk sex, so the sample under represents men with consistently lower-risk behavior. Second, as a first study, we simply asked about health insurance coverage status, so specific questions regarding type of insurance, type of services accessed with insurance, and whether barriers to accessing services exist were not asked. These underlying variables may be what are driving the relationship between health insurance and risky sexual behavior rather than health insurance coverage alone. Third, the findings rely on respondents’ self-reported behaviors which cannot be verified. Because this is the first study regarding MSM and health insurance coverage, replication is needed to demonstrate further that this relationship indeed exists.

Conclusions

Our findings demonstrate that MSM with health insurance are less likely to engage in risky sexual behavior than MSM without health insurance. Future research should explore not only health insurance coverage status but also potential barriers and facilitators to accessing services, type of insurance, and attitudes regarding health insurance coverage in regards to health behaviors to determine if these variables are related to risky sexual behavior. Next steps in this area of research should include determining whether having health insurance coverage alone influences risky sexual behavior, or whether it is the access to services that come from having insurance that is associated with a decrease in risky sexual behavior in MSM. In addition, steps are needed to determine if MSM with health insurance coverage are

indeed receiving information from healthcare providers and are therefore engaging in less risky sexual behavior or taking more preventive efforts. Our results suggest that this is a promising but neglected area of HIV prevention research. If our findings do generalize to the wider population of MSM, and the relationship is causal, then the recent changes in healthcare legislation in the United States are predicted to result in a decrease in risky sexual behavior among MSM.

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Table 1

Demographic Characteristics of Participants at Time of Survey

Demographic Characteristics	N(650)	%
Age		
18-24	104	16.0
25-34	229	35.2
35-44	195	30.0
45+	122	18.8
Town/Community of Residence		
Rural (farms and small towns)	24	3.7
Small town (5001-50,000people)	79	12.2
Medium-sized town (50,001-200,000)	106	16.3
Suburb of large city	153	23.6
Downtown or central district of city	278	43.0
Other	8	1.2
Years of school completed		
Through High School	8	1.0
Some college	266	41.0
College	307	47.0
Post-graduate more	69	11.0
Race		
Non-Hispanic White	443	68.2
Black or African American	41	6.3
Hispanic or Latino	98	15.1
Asian	23	3.5
Other	45	6.9
Currently in long-term relationship		
Yes	159	24.5
No	491	75.5
HIV Status		
HIV positive	140	21.5
HIV negative	508	78.2
Refused to answer	2	0.3
Health Insurance		
Yes	526	81.2
No	122	18.8
Sexual Orientation (behavior)		
Attracted to only men	445	68.6
Attracted almost exclusively to men	135	20.7
Attracted mostly to men	51	8.0
Attracted equally to both men and women	18	2.7
Number of Unprotected Anal Intercourse Partners in the Past Three Months		

Demographic Characteristics	N(650)	%
0	66	10.2
1	107	16.5
2	126	19.4
3	87	13.4
4+	263	40.5

Table 2
Bivariate Analysis of Health Insurance Status and Demographic Variables (N=650)

Demographic Characteristics	Health Insurance	%	No Health Insurance	%	Test Statistics	Significance Value
Long-term relationship						
Yes	139	26.4	20	16.4	$\chi^2=5.38$	$p=.02$
No	387	73.6	102	83.6		
Age						
18-24	108	20.5	21	17.2	$\chi^2=4.67$	$p=.19$
25-34	170	32.3	52	42.6		
35-44	163	31.0	32	26.3		
45+	85	16.3	17	13.9		
Urban-rural residency						
Rural (farms and small towns)	18	3.4	6	5.0	$p=.86$	
Small town (5001-50,000people)	60	11.5	17	14.0		
Medium-sized town (50,001-200,000)	85	16.1	21	17.2		
Suburb of large city	124	23.7	29	23.7		
Downtown or central district of city	230	44.0	48	39.3		
Other	7	1.3	1	.8		
Years of Education						
0-11	6	1.2	2	1.6	$p=.02$	
12-15	201	38.2	65	53.3		
16-19	259	49.2	46	37.7		
20+	60	11.4	9	7.4		
HIV status						
HIV positive	109	20.8	31	25.4	$\chi^2=1.24$	$p=.30$
HIV negative	415	79.2	91	74.6		
Race						
Non-Hispanic White	366	69.5	75	61.5	$p=.10$	

Demographic Characteristics	Health Insurance	No Health Insurance	%	Test Statistics	Significance Value
Black or African American	28	13	5.3	10.7	
Hispanic or Latino	74	24	14.1	19.7	
Asian	20	3	3.9	2.4	
Other	38	7	7.2	5.7	
Sexual orientation (behavior)					<i>p</i>=.26
Attracted to only men	367	77	70.0	63.1	
Attracted to almost exclusively men	105	30	20.0	24.5	
Attracted to mostly men	37	13	7.0	10.7	
Attracted to both men and women	16	2	3.0	1.7	

Table 3Risky Sexual Behavior Regression Prevalence Rate Ratios ($N=650$)

Demographic Characteristics	Model 1	Model 2
Health Insurance	.70 (.50-.94)	.72 (.60-.90)
Relationship Status		.70 (.60-.82)
Age		1.01 (1.00-1.01)
Urban/Rural Residency		
Rural town		.70 (.42-1.01)
Small town		1.10 (.90-1.43)
Medium sized town		1.07 (.85-1.35)
Suburb		1.08 (.90-1.30)
Downtown or central district		1 (Referent)
HIV Status		2.01 (1.70-2.43)
Education		1.02 (1.00-1.10)
Race/Ethnicity		
Black		1.40 (1.00-2.00)
Hispanic		1.03 (.82-1.30)
Asian		1.42 (.91-2.21)
Other		.83 (.61-1.14)
White		1 (Referent)
Sexual Orientation (gay/not gay)		.80 (.60-1.03)