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## Vengeance, Sexual Compulsivity and Self-Efficacy among Men who Have Sex with Men Living with HIV

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### Abstract

Vengeance is defined as a continuum of thoughts and/or actions ranging from harmless thoughts to destruction or death due to feelings of hurt or anger as a result of a perceived personal attack. Studies assessing the association between vengeance and HIV risk behavior are extremely lacking. The primary aims of this study were to examine the associations between vengeance and sexual compulsivity (SC), and self-efficacies (SEs) for condom use, HIV disclosure, and negotiation of safer sex practices. Data were obtained from 266 men who have sex with men (MSM) living with HIV. Simple and multiple linear regression were used to explore the associations between vengeance, SC and SE. After adjusting for sociodemographic and HIV-related factors, there was a negative association between vengeance and SE for HIV disclosure: (most vengeful:  $\beta = -1.49$ ; 95% CI:  $-2.40, -0.58$ ; more vengeful:  $\beta = -1.17$ ; 95% CI:  $-2.12, -0.22$ ; vengeance (continuous:  $\beta = -0.03$ ; 95% CI:  $-0.05, -0.01$ ). Intervention programs geared towards improving SE for HIV disclosure among MSM living with HIV should endeavor to reduce vengeful feelings.

### Keywords

Vengeance; sexual compulsivity; self-efficacy; HIV; MSM

### Introduction

Vengeance is defined as a continuum of thoughts and/or actions ranging from harmless thoughts to destruction or death (Gabriel & Monaco, 1994), due to feelings of hurt and anger (Socarides, 1966), as a result of a perceived personal attack (Cota-Mckinley, Woody, & Bell, 2001). Vengeance has been shown to be positively associated with HIV nondisclosure (Moskowitz & Roloff, 2008).

Sexual compulsivity (SC), the lack of control of one's sexual behavior, has a positive relationship with HIV risk factors such as condomless sexual intercourse (Xu, Zheng, Liu, & Zheng, 2016). SC also has a negative relationship with HIV protective factors including self-efficacy (Semple, Zians, Grant, & Patterson, 2006) and outcome expectancies for sexual behaviors (Brown, Serovich, & Kimberly, 2016b).

SE is the perception of one's ability to perform a certain task (Bandura, 1977). Despite one study showing no association with sexual risk activity (Benotsch et al., 2007), the majority of studies show a negative association between SE and HIV risk behavior (Semple, Patterson, & Grant, 2000a; Semple, Patterson, & Grant, 2000b).

Previous research has shown that vengeance, measuring concepts such as the importance of getting back at others who have hurt you, is negatively associated with disclosure intentions among men who have sex with men living (MSM) with HIV (Brown, Serovich, & Kimberly, 2016a). Due to these findings, the aim of this study was to assess whether vengeance was associated with other HIV-related factors such as SC, and SEs for condom use, HIV disclosure and negotiation of safer sex practices among MSM living with HIV.

## Methods

Data were obtained from one time-point from 266 MSM who participated in an HIV disclosure intervention study (December 2009 to December 2014). Men were eligible for the study if they were 18 years old, living with HIV, reported being sexually active with 2 partners in the past year (1 male partner), and indicated an interest in learning more about HIV disclosure. The Ohio State University and University of South Florida Institutional Review Boards approved the study.

Participants were recruited using advertising efforts with local and state AIDS service organizations where caseworkers were informed about the study, and websites featured announcements for participation. Advertisements were distributed through newsletters, direct mailings, at HIV-related, local eating and drinking venues, and in daily newspapers.

Audio-computer assisted self-interviewing (ACASI) was used to collect baseline information before randomization (Perlis, Des Jarlais, Friedman, Arasteh, & Turner, 2004). Person-level characteristics (item and scales that were asked only once for each participant) included sociodemographic characteristics, vengeance, SE and SC.

## Measures

The 20-item Vengeance Scale (Stuckless & Goranson, 1992) garnered data on the participants' attitudes to various situations that may evoke vengefulness. For example, items included "I don't just get mad, I get even" and "Revenge is sweet". Responses were obtained using a 7-point Likert type scale ranging from *Disagree Strongly* (1) to *Agree Strongly* (7). Items were coded so that higher scores indicated higher vengefulness. Responses were summed and divided into three percentile categories: the lower third ("least vengeful"), the middle third ("more vengeful"), and the upper third ("most vengeful"). This operationalization was used to determine how men with the lowest, middle or highest vengeance scores would score on SC and SE. Percentiles of vengeance were used in this study because, at present, there is no validity study suggesting cut-off values for low, medium or high vengeance levels. Vengeance was also operationalized as a continuous variable using sum scores (Cronbach's alpha = 0.93).

SC was measured using the 13-item Compulsive Sexual Behavior Inventory (Coleman, Miner, Ohlerking, & Raymond, 2001). Responses were obtained using a 5-point Likert type scale ranging from *Never* (1) to *Very Frequently* (5), which were summed, with higher scores representing higher levels of SC (continuous variable; Cronbach's alpha = 0.93).

SEs for condom use, HIV disclosure, and negotiation of safer sex practices scale were measured by three items each (Semple, Patterson, & Grant, 2000a). Responses were obtained using a 4-point Likert type scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (4). Scores were summed so higher scores represented higher levels of SE (continuous variables; Cronbach's alpha = 0.75 for condom use, 0.89 for HIV disclosure, 0.66 for negotiation).

## Confounders

Potential confounders considered were associated with vengeance or SC or SE based on literature review and examination of study variables. Age is associated with SC (Xu et al., 2016), and SE for negotiating safer sex practices (Brown, Serovich, Kimberly, & Umasabor-Bubu, 2015). Other confounders considered included: race/ethnicity, education, income, employment, knowing source of infection, time since diagnosis, location, and HIV status of partners. "Thinking intention was transmitted intentionally" was also considered as a potential confounder. A person who scores higher on vengeance may be more likely to think that transmission of HIV was an intentional act, and a person who believes that transmission of HIV was intentional may result in higher vengeance. All variables considered confounded the associations (change in effect estimate = 10%). Therefore, adjusted models controlled for all sociodemographic and HIV-related characteristics.

## Analytic Approach

Descriptive statistics were used to determine the distribution of sociodemographic and HIV-related characteristics, overall and stratified mean (*M*) vengeance and SC scores and standard deviation (*SD*) values. Analysis of variance (ANOVA) was used to compare mean vengeance and SC scores by each characteristic. Mean vengeance scores in each vengeance group were also obtained.

Crude and adjusted linear regression models were used to assess the association between being in the more and most vengeful category, vengeance (as a continuous variable), and SC and SEs for condom use, HIV disclosure, and negotiation of safer sex practices. All analyses were performed in SAS version 9.4 (SAS Institute, Cary, NC).

## Results

Table 1 shows the distribution of sociodemographic and HIV-related characteristics and the related mean (*M*) and standard deviation (*SD*) values of vengeance and SC. The overall *M* and *SD* of vengeance and sexual compulsivity in the study population was 56.8 (*SD* = 20.8) and 31.3 (*SD* = 11.2) (data not shown). Table 2 contains the *M*, *SD* and range values for the three different vengeance groups.

Data in Table 3 illustrate the association between vengeance, and SC and SEs for condom use, HIV disclosure, and negotiation of safer sex practices. After adjusting for sociodemographic and HIV-related characteristics, being in the more vengeful ( $\beta = -1.17$ ; 95% CI:  $-2.12, -0.22$ ), most vengeful ( $\beta = -1.49$ ; 95% CI:  $-2.40, -0.58$ ) groups, and vengeance as a continuous variable ( $\beta = -0.03$ ; 95% CI:  $-0.05, -0.01$ ) were associated with lower SE for HIV disclosure. There were no statistically significant results in the association between vengefulness, SC, and SEs for condom use and negotiation of safer sex practices.

## Discussion

This is the first study to examine the association between vengeance, SC and SE. After adjusting for confounders, vengeance was associated with lower SE for HIV disclosure. Vengeance in the current study is not specific to feelings about acquiring HIV but represents general views of participants on taking revenge on someone who may have hurt them. The study's findings suggest that, among MSM living with HIV, agreeing that getting back at someone for (any) wrong that was done to them was the right thing to do was related to a lower perceived ability in disclosing one's HIV status to a sexual partner. It is possible that people with higher levels of vengeance may have lower levels of self-esteem, and hence lower perceived ability to disclose their HIV status to their sexual partners. Vengeful responses have been found to elicit intense negative self-conscious emotions (Elshout, Nelissen, & van Beest, 2015), which are linked to lower self-esteem (Yelsma, Brown, & Elison, 2002).

The associations between vengeance, and SC and SEs for condom use and negotiation of safer sex practices were not statistically significant. These findings suggest that vengeance may influence HIV transmission risk via SE for HIV disclosure but not through sexually compulsive behavior, or one's perceived ability in using condoms or negotiating safer sex practices.

The findings of this study should be interpreted with the following limitations in mind. The Vengeance Scale used in the current study was not specific to contracting HIV, but is a scale which measures general vengeful beliefs and attitudes. Vengefulness specific to contracting HIV may have different relationships with SE and SC. It is also possible that vengeance and SC may be underreported due to social desirability bias. However, the use of ACASI may have mitigated this reporting of sensitive behaviors and beliefs that may be considered "undesirable".

Nevertheless, the current study had some strengths. To our knowledge, this is the first study to examine the relationships between vengeance and SC, and vengeance and SE. Adjusted analyses controlled for key sociodemographic and HIV-related confounders, which helps to eliminate the effects of extraneous variables.

## Conclusions

In this study, vengeance was negatively associated with SE for HIV disclosure. These findings suggest that intervention programs for MSM living with HIV aimed at improving SE of disclosure should endeavor to address feelings of vengefulness. Future research should

assess the feasibility of implementing interventions addressing feelings of vengeance among MSM living with HIV.

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**Table 1.** Distribution of Sociodemographic Characteristics Overall and Mean Vengeance Scores among Respondents

Characteristic	N=266 N (%)	Vengeance (Mean, SD)	P-value*	Sexual Compulsivity (Mean, SD)	P-value*
<b>Age (Mean, SD)</b>	43.6, 10.5	--			
18–34	57 (21.4)	63.2, 23.9		32.4, 11.7	
35–49	124 (46.6)	54.7, 18.5		31.8, 11.5	
50+	85 (32.0)	55.6, 21.0	0.063	30.0, 10.3	0.386
<b>Race/Ethnicity</b>					
Black	104 (39.1)	59.3, 19.9		31.5, 12.5	
White	144 (54.1)	55.2, 20.6	0.449	31.1, 10.0	0.710
Latino	13 (4.9)	53.0, 28.4		30.6, 13.7	
Other	5 (1.9)	62.0, 19.0		35.4, 7.6	
<b>Education</b>					
Less than high school	22 (8.3)	56.2, 14.3		35.6, 14.2	
High school	58 (21.8)	59.9, 20.3		30.9, 12.3	
Some college	117 (44.0)	56.1, 22.6		30.3, 10.5	
College grad	69 (25.9)	55.5, 19.7	0.631	32.1, 10.1	0.316
<b>Monthly Income</b>					
\$0-\$500	77 (29.0)	62.2, 24.3		34.3, 11.6	
\$501-\$1000	77 (29.0)	53.5, 17.7		29.5, 12.1	
\$1001	112 (42.1)	55.3, 19.6	<b>0.037</b>	30.5, 9.9	<b>0.025</b>
<b>Employment</b>					
Employed	84 (31.6)	55.0, 19.7	0.322	29.8, 10.1	0.116
Unemployed	182 (68.4)	57.6, 21.2		32.0, 11.6	
<b>Knew Source of Infection</b>					
Yes	206 (77.4)	57.1, 21.1		31.0, 11.3	
No	60 (22.6)	55.5, 13.1	0.900	32.5, 10.6	0.361
<b>Thought to have been infected intentionally</b>					
Yes	115 (43.2)	59.9, 22.9		32.2, 12.2	
No	151 (56.8)	54.5, 18.7	<b>0.041</b>	30.7, 10.4	0.157
<b>Time Since Diagnosis</b>					

Characteristic	N=266 N (%)	Vengeance (Mean, SD)	P-value*	Sexual Compulsivity (Mean, SD)	P-value*
1 year	31 (11.7)	58.1, 24.5		34.4, 11.2	
> 1 to 5 years	50 (18.8)	57.1, 19.4		30.3, 11.5	
>5 years to 10 years	42 (15.8)	57.1, 23.0		29.3, 9.3	
>10 years	143 (53.8)	56.3, 19.9	0.982	31.7, 11.5	0.196
<b>Location</b>					
(Held for review) MSA	141 (53.0)	56.0, 20.8		31.7, 11.5	
(Held for review) MSA	125 (47.0)	57.7, 20.7	0.512	31.0, 10.9	0.592
<b>HIV status of partner(s)</b>					
HIV-negative or unknown	130 (88.4)	56.4, 20.5		32.0, 11.5	
HIV-positive	17 (11.6)	63.4, 29.5	0.354	27.2, 9.0	0.058

\* P values are based on F statistic from Welch's test

SD: Standard deviation

**Table 2.**

Mean Vengeance Scores in each Vengeance Group and Range Values

	<b>n</b>	<b>Mean, SD</b>	<b>Range</b>
Least Vengeful	33	35.5, 7.0	20–46
More Vengeful	33	54.1, 5.0	47–63
Most Vengeful	34	80.4, 13.6	64–130

SD: Standard deviation

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Association between being More Vengeful, Most Vengeful, Vengefulness (as a Continuous Variable) and Sexual Compulsivity and Self-Efficacy

**Table 3.**

	More Vengeful		Most Vengeful		Vengefulness	
	Crude $\beta$ (95% CI)	Adjusted $\beta^*$ (95% CI)	Crude $\beta$ (95% CI)	Adjusted $\beta^*$ (95% CI)	Crude $\beta$ (95% CI)	Adjusted $\beta^*$ (95% CI)
Sexual Compulsivity	2.17 (-0.98, 5.32)	3.51 (-1.08, 8.09)	<b>3.80</b> <b>(0.48, 7.11)</b>	3.89 (-0.84, 8.62)	0.09 (0.02, 0.15)	0.08 (-0.01, 0.17)
Self-Efficacy for Condom Use	-0.09 (-0.66, 0.49)	-0.04 (-0.87, 0.80)	0.20 (-0.35, 0.75)	0.29 (-0.54, 1.12)	0.00 (-0.01, 0.01)	-0.00 (-0.01, 0.02)
Self-Efficacy for HIV Disclosure	<b>-0.87</b> <b>(-1.54, -0.20)</b>	<b>-1.17</b> <b>(-2.12, -0.22)</b>	<b>-0.91</b> <b>(-1.54, -0.27)</b>	<b>-1.49</b> <b>(-2.40, -0.58)</b>	<b>-0.02</b> <b>(-0.03, -0.01)</b>	<b>-0.03</b> <b>(-0.05, -0.01)</b>
Self-Efficacy for Negotiation of Safer Sex Practices	<b>-0.51</b> <b>(-1.01, -0.01)</b>	-0.57 (-1.36, 0.22)	<b>-0.55</b> <b>(-1.06, -0.05)</b>	-0.56 (-1.37, 0.24)	<b>-0.01</b> <b>(-0.02, -0.00)</b>	-0.01 (-0.03, 0.00)

**Bolded  $\beta$**  estimates and 95% confidence intervals are statistically significant at  $p < 0.05$

\* Adjusted for age, race/ethnicity, education, income, employment, knowing source of infection, thinking that he was infected intentionally, time since diagnosis, location, and HIV status of partner(s)