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Vengeance, HIV Disclosure, and Perceived HIV Transmission to Others

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Abstract

Feelings of vengefulness result from being treated unfairly. However, some individuals are more sensitive to unfair treatment and more likely to demand restitution than others. Degrees of vengefulness may influence behavior in HIV-positive men who have sex with men (MSM), where highly vengeful men may seek limited retribution by placing others at risk, for example, by failing to disclose their HIV-status to sexual partners. This study examined the tendency towards vengefulness in HIV-positive MSM and its associations with disclosure and condom use behaviors. Results showed that greater certainty of from whom participants had contracted HIV was associated with lowered vengefulness over time. Though condom use did not vary by vengefulness, MSM reporting higher vengefulness concealed their HIV serostatus more than men reporting less vengefulness. Vengeance was not related to individuals' perceptions that they had transmitted the disease to others. Overall, the data suggested identifying one's HIV transmitter was reconciliatory. Men reporting higher vengefulness might also derive a sense of justice from not disclosing their serostatus.

Keywords

Vengeance; Negative affect; HIV disclosure; HIV transmission; Condom use

Introduction

The role of negative affect in sexual decision-making and HIV sexual risk taking behaviors has been debated over the years (Kalichman and Weinhardt 2001). Where some research maintains that unsafe sex and negative affect are positively related (Marks et al. 1998; Bingman et al. 2001), other literature posits a weak link between measures of depression, anxiety, anger, hostility, and sexual behaviors enacted by HIV-positive men (Crepaz and Marks 2001; Kalichman 1998; Robins et al. 1994). Yet, vengefulness is conspicuously absent from this debate—a trait that many categorize as both negative and affective (McCullough et al. 2001; Solomon and Stone 2002; Stuckless and Goranson 1992; Wohl and McGrath 2007). It is the degree to which individuals tend to inflict harm or demand retribution for a perceived wrong (Stuckless and Goranson 1992); and this manifests as highly vengeful individuals demanding revenge for even the smallest transgressions. Vengefulness has long been associated with antisocial or illegal behaviors (see Porporino et al. 1987; Scully and Marolla 1985; Turner and Cashdan 1988). Yet, no research has explored the effects of (high/low) vengefulness among

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HIV-positive men and its associations with unhealthy, risk-taking behaviors. Thus, this current study aims to test for the factors that influence: vengefulness, the behaviors that are enacted by men exhibiting different degrees of vengefulness (i.e., condom use and HIV disclosure), and finally, perceptions held by men exhibiting different degrees of vengefulness of having transmitted HIV to others.

Of extant research, only Bingman et al. (2001) approach the concept of vengeance in their work linking HIV-positive men who have sex with men (MSM) who outwardly blame others for their infection and unprotected anal intercourse. Although the study never tests for vengefulness per se, it does suggest that retaliatory motives may be guiding condom disuse. Using Equity Theory as their theoretical foundation (see Walster et al. 1976), the researchers suggest that seroconversion may strip men of health equity (Bingman et al. 2001). Said theory claims individuals who feel under or over rewarded in a given situation become psychologically distressed. This anxiety provokes a desire to restore the rewards (the equity) and either give back if over-rewarded or take if under-rewarded. Such perceptions of equity may be applied to the health statuses of individuals (McPherson et al. 2007). Specifically, HIV-positive men may feel that they have been under benefited by, and when compared to, other MSM after an HIV-positive diagnosis (Hutchinson et al. 2004). Such inequities in sexual health may provoke feelings of outward, or other-oriented blame, and may create desires for health equity restoration. In some men, this restoration may be found by engaging in the same behavior (unprotected anal intercourse) that initially led to seroconversion.

This previous study focused on MSM who blamed others for their seroconversion. Yet, unprotected anal intercourse may be present in men who also report higher degrees of vengefulness, as recent research shows a strong association between this negative trait and outward blame (Schmid 2005). Currently, the degree to which HIV-positive MSM are vengeful is unknown. It is also uncertain whether vengefulness affects behaviors that may lead to future HIV infections. This trait may be yet another negative trait exhibited by men who have seroconverted, similar or related to anger, hostility, fear, denial, and regret documented in past studies on HIV-positive MSM (Clement and Schonnsson 1998; Hutchinson et al. 2004; Ryan 1984; Sadovsky 1991).

As mentioned, published findings are inconsistent regarding the effects of negative traits over MSM risk-taking behavior (Crepaz and Marks 2002). For example, instances in which significant results have been found linking anger (Marks et al. 1998) and hostility (Perkins et al. 1993) in MSM with unprotected anal intercourse were not replicable in later work (Kalichman 1999). Additionally, recent studies show that risk-taking behaviors and HIV disclosure may be more a result of partner type, perceived seroconcordance, and enacted sexual behaviors rather than negative affect or traits (Hart et al. 2005; Klitzman and Bayer 2003; Klitzman et al. 2007). Thus, the utility of vengeance as a predictor of condom use, disclosure, or other instances of risk-taking behavior may be equally questionable.

Since this is the first study (to our knowledge) to explicitly address vengefulness in HIV-positive MSM, our initial research question examined the trait as a dependent variable: how vengeful were HIV-positive MSM, and what affected the degree to which HIV-positive MSM were vengeful? We then examined the trait as a predictor of behaviors: did vengeful HIV-positive MSM use condoms less, disclose their HIV status less frequently, or report more instances of HIV transmission to others?

To answer our first question, we focused on time since HIV diagnosis and HIV transmitter certainty—the degree to which individuals were certain from whom HIV was transmitted to them. Research into vengeance suggests that time since a transgression and transgressor identification both vastly affect feelings and expressions of vengefulness (Schmid 2005);

however, these two variables do not influence vengefulness independently (Wohl and McGrath 2007). Transgressor identification tends to moderate time since the transgression such that if the transgressor is known, vengeance is initially high but lessens over time. If the transgressor is unknown, vengeance tends to sustain, as the situation is less resolved. Qualitative research into newly seroconverted individuals suggests that wanting vengeance is quite strongly verbalized, particularly by men after being informed of their HIV-status (Hutchinson et al. 2004). As such, HIV-positive individuals may exhibit differing degrees of vengefulness depending on both how long it has been since the diagnosis (i.e., the transgression) and how certain they are that they could identify the person who transmitted the virus to them (i.e., transgressor identification).

Bingman and colleagues' (2001) research was the most related and available quantitative work we could use to portend any potential relationships between vengeance (now as the independent variable) and behaviors that could lead to future HIV transmission such as condom use and HIV disclosure. That is, outward-blame was the closest conceptualized variable to vengeance (Schmid 2005) and tested in previous studies into MSM HIV-positive behavior. Thus we expected vengeance to negatively influence condom use, much as it had for outward-blame.

Though the previous study into outward-blame never assessed any associations it might have had with HIV disclosure; and given the far more inconsistent research into negative affect and disclosure (Crepaz and Marks 2002; Kalichman and Nachimson 1999; Marks and Crepaz 2001), previous research on vengeance itself was used to shape possible outcomes for our study: A negative relationship between vengeance and HIV disclosure seemed likely as vengeful individuals have been found to be more apathetic to others in general (Stuckless and Goranson 1992; Wohl and McGrath 2007). HIV disclosure requires a certain degree of concern for others (Stirratt 2006). With respect to the research into disclosure and partner type (Hart et al. 2005; Klitzman et al. 2007), such indifferent, or even vindictive individuals might not feel the need to disclose their status, or might not deem such casual partners as worthy of such intimate information.

Finally, vengefulness likely negatively influences HIV-positive MSM perceptions of their responsibility to protect others against further infection. Some research shows that negative affective traits and feelings like depression and loneliness reduce the perceptions that HIV prevention should be the responsibility of the HIV-positive individual (Wolitski and Bailey 2006). It is possible that vengefulness, as a negative affective trait, lowers prevention concerns (e.g., condom use and HIV disclosure) and, as a corollary, contributes to transmissions to other men.

Methods

Procedures

The study was conducted using an Internet-based survey. Advertisements with a link to the survey were placed in the weekly publication, *Gay Chicago Magazine*, on Craigslist, and on an international website catering to file sharing and communication between MSM on various issues (gay-torrents.net). Participants could access the survey from any Internet-ready computer, and upon completion, instructions for how to get a \$10 gift card to a coffee chain were provided.

Participants

This study focused on self-identified, HIV-positive MSM. Of the 158 men who began the survey, 117 (74%) completed the questionnaire in its entirety. Of these 117 individuals, 90.6%

reported being seropositive ($n = 106$), and 9.4% sero-unknown ($n = 11$). Sero-unknown individuals were excluded from the analyses.

Measures

Vengeance—The 20-item Vengeance scale was used to assess the degree to which an individual was predisposed towards vengeance or revenge ($\alpha = .93$; Stuckless and Goranson 1992). An example from this measure was “I don’t just get mad—I get even” (1 = “strongly disagree”, 7 = “strongly agree”).

Disclosure to Casual Partners—Disclosure to casual sex partners was measured on a continuum from 0% to 100% of the time using 10% increments. We asked, “In the past 12 months, what percent of the time did you disclose your HIV status to a casual partner(s)—a fuck-buddy [*sic*] or a partner you have sex with but without any sort of commitment?”

HIV Transmitter Certainty—We assessed the degree to which an individual was certain of who had given him HIV on a continuum from 0% to 100% using increments of 10%. The specific question was, “How certain are you that you know *who* transmitted HIV to you?”

Condom Use—Participants were asked on a continuum (from 0% to 100% of the time, using increments of 10%), “In the past 12 months, what percent of the time did you use a condom, either during receptive or insertive anal intercourse, with a casual partner—a fuck-buddy [*sic*] or a partner you have sex with but without any sort of commitment?”

Number of Partners—Individuals reported the number of anal intercourse partners they had accrued over the past year. To reduce variability, these raw numbers were transformed by calculating the base-10 log for each value.

Perceived Transmission of HIV to Others—We measured how certain each participant was that he had transmitted HIV to another individual using a continuum from 0% to 100% certain using 10% increments. We asked, “Think about all of your sexual experiences. How certain do you feel it is that you have transmitted HIV to another person?”

Statistical Analysis

The data were statistically analyzed with multiple linear regression and moderated regression analyses. SPSS 11.0 was used for the multiple linear regression analyses presented. JMP 5.1 was used for all higher-level analyses (i.e., moderated regression). The sample size varied across tests, as individuals could report not engaging in behaviors (e.g., men reporting 0% condom use due to not having performed any intercourse at all were not included). We used moderated regression in which an interaction term was created by multiplying the given moderator with the independent variable (Aiken and West 1991). Variables were entered on different steps of the regression, with controlled variables entered before the independent and moderator variable. The interaction term was entered last. When an interaction term proved to be significant, we deconstructed the term into its different variations in order to accurately interpret its meaning. Continuous variables such as HIV transmitter certainty were transformed into high and low variations by adding or subtracting one *SD* to each participant’s response. Thus, high variations represented the strength of the relationship at one standard deviation above the mean, and low variations represented the strength of the relationship at one standard deviation below the mean (see Aiken and West 1991).

Multiple regression analyses were conducted to examine the influence of vengeance over condom use and disclosure. We were unsure whether to control for disclosure when testing condom use as the dependent variable. The significance of the relationship between condom

use and disclosure in MSM remains inconsistent (Crepaz and Marks 2002). Some studies suggest men who disclose their serostatus use condoms disproportionately more than those who do not (Crepaz and Marks 2003; Kalichman and Nachimson 1999; Niccolai et al. 1999); other studies show no relationship between the variables (Marks and Crepaz 2001) or a more complex one in which partner type acts as moderator (Wolitski et al. 1998). As such we ran the analysis twice, with and without disclosure also predicting condom use.

Results

Sample

Table 1 summarizes the demographic characteristics of the study sample. Though the MSM skewed towards being White (84.9%) and largely urban (74.5% living in cities with more than 250 K people), they showed normal distributions on income and education. Of the five demographic variables, only age was positively correlated with vengeance ($r = .19$, $P = .05$) and time since diagnosis ($r = .48$, $P < .01$). Consequently, we controlled for age when testing for the influence of vengeance and time since diagnosis over other dependent variables.

Time, Transmitter Certainty, and Vengeance

The sample was not strongly vengeful ($M = 2.83$ out of 7, $SD = 1.01$). It did differ from Stuckless and Goranson's (1992) original sample of undergraduate men ($M = 3.85$, $SD = 1.14$), $t(106) = -10.46$, $P < .01$, $d = -.95$, but did not differ significantly from a sample of HIV-negative MSM collected by similar methodology ($M = 3.05$, $SD = .93$), $t(206) = 1.72$, $P = .09$, $d = .23$ (Moskowitz 2007). As Table 1 shows, most men (53.1%) had been living with HIV for more than six years (>72 months). Most men were also somewhat certain of who was responsible for transmitting HIV to them ($M = 44.46\%$, $SD = 40.47\%$).

Time since diagnosis and vengeance were not significantly related, $t(60) = -1.23$, $P = .22$, $\beta = -.14$. Additionally, HIV transmitter certainty and vengeance were not related, $t(89) = .73$, $P = .47$, $\beta = .07$. To test HIV transmitter certainty as a moderator of the relationship between time since HIV diagnosis and vengeance, we created an interaction term by multiplying transmitter certainty by time since diagnosis and added this term along with age, time since diagnosis, and transmitter certainty to a model predicting vengeance. The overall model was statistically significant, $F(4, 88) = 2.98$, $P = .02$, $R^2 = .12$, and the interaction term added significantly to the fit of the model ($t(88) = -2.80$, $P < .01$, $\Delta R^2 = .08$, $\beta = -.29$).

To interpret the results more accurately, we split the interaction by those who were highly certain (one SD above the mean, or 84.93% certain), and those who were highly uncertain of who had infected them (one SD below the mean, 3.99% certain). As Fig. 1 illustrates, HIV-positive men who were highly certain from whom they acquired HIV became less vengeful as time since their diagnosis increased ($t(88) = -2.90$, $P < .01$, $\beta = -.47$). HIV-positive men who were highly uncertain from whom they acquired HIV became neither more nor less vengeful as time since their diagnosis increased ($t(88) = .73$, $P = .47$, $\beta = .11$).

Vengeance, Condom Use, and Disclosure

On average, the HIV-positive men in the sample used condoms during receptive or insertive anal intercourse with casual partners 42.33% of the time ($SD = 41.10\%$). Vengeance was not associated with condom use ($t(69) = 1.40$, $P = .17$, $\beta = .17$). This result did not vary by the inclusion or exclusion of disclosure to casual partners ($M = 63.74\%$, $SD = 39.57\%$). Disclosure was also not related to condom use with these partners, ($t(69) = 1.52$, $P = .13$, $\beta = .18$). With respect to disclosure as the dependent variable, vengeance was negatively related to disclosure to casual partners ($t(69) = -2.62$, $P = .01$, $\beta = -.30$). This was significant with and without the inclusion of condom use.

Perceived Transmission to Others

The average participant was 21.36% certain that he had transmitted HIV to another ($SD = 31.75$). We tested a model comprised of five control variables (age, condom use, HIV disclosure, number of anal intercourse partners, and time since diagnosis) and vengeance. The moderated regression model was significant, $F(6, 55) = 2.35$, $P = .04$, $R^2 = .20$. Table 2 shows the individual relationships between the variables and perceived HIV transmission to others. Vengeance was not a significant contributor of variance to the model. Age and condom use significantly contributed to the fit of the model.

Discussion

Our main goal was to better elucidate the degree of vengefulness in HIV-positive MSM and potential associations with HIV transmission risk-taking behaviors. First, we examined vengefulness as a dependent variable. Vengeance was not associated with time or HIV transmitter certainty at statistically significant levels. However, as we anticipated, HIV transmitter certainty interacted with time since diagnosis: men who were highly certain from whom they had contracted HIV became less vengeful over time relative to their uncertain counterparts. Degree of vengefulness in MSM was not associated with condom use with casual partners, but men reporting higher vengefulness disclosed their serostatus less frequently. Finally, the results showed that younger men and men who did not use condoms were most likely to perceive having transmitted HIV to others; vengefulness was not associated with transmission to others.

There seemed to have been reconciliatory value in knowing the individual responsible for transmitting the virus that was denied to those who were uncertain about the source of their infection. This trend could have potentially resulted from a lack of closure felt by uncertain individuals as suggested in the introduction. When the identity of the HIV transmitter was unknown or ambiguous, thoughts about the transmission, perceptions of unfairness, and vengefulness may have been strongly felt. Thus, such ambiguity surrounding HIV transmission might have created personal and emotional barriers blocking psychological changes and positive trait orientations (i.e., being more forgiving, compassionate, or understanding). Yet, when the identity was certain, it might have been possible to address the transmitter and more completely reconcile the event, thus resulting in less exhibited vengefulness over time.

The mixed results produced when using vengefulness as a predictor of condom use and disclosure were unsurprising, considering the inconsistent findings shown by past research into negative affective traits and HIV risk-taking behavior (Crepaz and Marks 2001, 2002; Kalichman and Nachimson 1999; Marks and Crepaz 2001; etc.). Whereas condom use decreased in outwardly blaming MSM in a previous study (Bingman et al. 2001), our results showed that it was disclosure (and not condom use) that decreased in men reporting higher vengefulness. Men reporting higher vengefulness might have been more reticent about their HIV serostatus due to the reasons suggested by previous research into disclosure. That is, vengefulness might have intrinsic properties that manifest as apathetic behavior towards others (i.e., nondisclosure; Stuckless and Goranson 1992); or social proximity and relationship type might be factors that are particularly germane to vengeful individuals and their decisions to disclose (Hart et al. 2005; Klitzman et al. 2007). These previously researched factors might even be interacting with the feelings of justice and health equity restitution possibly derived from not disclosing one's serostatus. Further qualitative research into vengefulness is needed to validate these conclusions.

Our study was not without its own limitations. First, the survey relied on self-report to assess potentially sensitive sexual behaviors and illegal activity. It has been established that HIV disclosure and nondisclosure can both be equally taboo depending on the environment (Elwood

et al.2003; Halkitis and Wilton 2006), but the knowing concealment of a seropositive status when engaging in risky sex is illegal (Galletly and Pinkerton 2004). As such, surveying seropositive individuals may have been insufficient to circumvent social desirability and impression management. So though individuals did not disclose their serostatus to partners, or perceived they transmitted HIV to others, it may have been unlikely that they admitted to these behaviors on the survey. Conversely, the veracity (and the generalizability) of data from MSM willing to confess to illegal behaviors such as spreading HIV may be equally questionable.

Second, several potentially important explanatory variables were not assessed. We did not assess outward blame, which would have been helpful towards truly comparing our findings to the previous research. We did not assess whether participants knew if their HIV transmitter was seropositive before engaging in the sexual encounter resulting in their seroconversion. More precise attributions for the relationship between vengeance and nondisclosure could have been made from such data. Also, our question on HIV disclosure was non-specific and in particular, did not account for repetitious sexual partnering; this was perhaps why the mean disclosure rate to casual partners was unusually high in the sample. Finally, our relatively small sample size may have limited the ability to detect smaller effects.

Despite the aforementioned limitations, we believe that our findings have heuristic value and add to the ongoing debate on the relationship between negative affect and HIV risk-taking behavior. As mentioned in the introduction, the utility of vengeance as a trait that varies behaviors in HIV-positive MSM has never actually been assessed. In the final analysis, it is certainly not as strong as some of the other more reliable behavioral predictors (e.g., number of past sexual partners, partner type, drug use, etc.), but it should certainly be considered as important as anger, hostility, anxiety, depression, and other negative affective traits. We also believe this study has important implications for HIV clinicians and healthcare workers. Results indicated that trait differences (regarding vengefulness) in MSM might manifest as negative health behaviors contributing to the spread of HIV. As a response, HIV clinicians might assess degrees of vengefulness (and other negative traits) in newly seroconverted MSM during post-positive serotest HIV medical care and therapy sessions. MSM who report being vengeful might then be guided by an attending clinician towards more constructive and positive health behaviors from the onset of testing seropositive. Additionally, clinicians might more consistently encourage the identification of one's HIV transmitter, considering such knowledge is associated with decreased vengefulness over time.

This study does leave a number of questions unanswered. Future studies might select those who fall one *SD* above the mean for vengeance for consultations, interviews, and even further quantitative examinations. Researchers might ask pointed questions that delve beyond the certainty of one's HIV transmitter in order to vastly improve and clarify some of the speculations made in our discussion session. By sampling an exclusively vengeful group, this may show the degree to which HIV transmission risk-taking behavior is actually relevant for health equity restoration, or if this trend is more simply explained by past research less focused on negative affective traits.

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Fig. 1.

Low and high time since diagnosis predicting vengeance by transmitter certainty. Note, the x -axis represents generalized low (one SD below the mean) and high time since diagnosis (one SD above the mean), and the y -axis represents escalating vengefulness. Those who were highly certain of the transmitter fall one SD above the mean, and those highly uncertain of the transmitter fall one SD below the mean. The horizontal line running across the figure represents the mean for vengefulness

Table 1

Distribution of variables

Demographic and independent variables	<i>n</i>	% of <i>N</i>
City size (in people)		
<50 K	11	10.4
50 K-250 K	16	15.1
250 K-750 K	16	15.1
750 K+	63	59.4
Race/ethnicity		
White	90	84.9
Black	2	1.9
Latino	8	7.5
Asian	3	2.8
Middle/eastern	2	1.8
Other	1	0.9
Income (USD)		
<\$10K	7	6.6
\$10K-\$30K	27	25.5
\$31K-\$50K	33	31.1
\$51K-\$75K	19	17.9
\$76K-\$100K	15	14.2
\$101K+	5	4.7
Education		
Some high school	5	4.7
Finished high school	15	14.2
Some undergraduate	18	17.0
Finished undergraduate	37	34.9
Some graduate	5	4.7
Finished graduate	26	24.5
Time since HIV diagnosis		
0-24 months	24	25.0
25-48 months	7	7.3
49-72 months	14	14.6
73-96 months	7	7.3
96 + months	44	45.8
	<i>M</i>	<i>SD</i>
Age ^a	41.08	9.28

^a Note: Absolute range for age: 20-62

Table 2

HIV transmission to others: Individual variable contributors

Variables	<i>t</i> (55)	<i>P</i>	β
Vengeance	-.13	.90	-.02
Number of anal partners	.87	.39	.11
Time since diagnosis	1.04	.30	.14
HIV disclosure	-1.48	.14	-.19
Condom use	-2.14	.04	-.28
Age	-2.16	.04	-.29

Note. Bolded variables indicate a significant relationship existed with respect to the dependent variable, HIV transmission to others