

New Jersey's HIV Exposure Law and the HIV-Related Attitudes, Beliefs, and Sexual and Seropositive Status Disclosure Behaviors of Persons Living With HIV

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A majority of US states have enacted HIV-specific laws that regulate the sexual behavior of persons living with HIV (PLWH).¹ For the most part, these laws require PLWH to disclose their positive serostatus to prospective sexual partners.^{1,2} The sexual activities prompting disclosure range from unprotected anal or vaginal intercourse—at the most limited—to—at the broadest—any intimate activity involving the exchange of 1 or more of a variety of bodily fluids.³ The laws are typically graded as felonies.^{1,2} Some states require persons who have been convicted of violating these laws to register as sex offenders.⁴

Little is known about the impact of these laws on PLWH. It is not known whether the laws are effective in reducing risk behaviors² or whether they have inadvertent negative effects on PLWH.⁵⁻⁸ Concerns about negative effects of these laws include that they may heighten HIV-positive persons' perceptions of societal hostility against PLWH,^{4,6} that they may exacerbate HIV-related stigma by implying that PLWH are likely to act in ways that are a threat to others,^{4,5,9} and that they may inadvertently decrease the willingness of PLWH to disclose their positive serostatus by increasing the nature and severity of consequences of being known as someone who has HIV.^{10,11} Increased stigma and secrecy, in turn, may contribute to poor adherence to treatment and increased risk behavior.¹²⁻¹⁵ The *National HIV/AIDS Strategy for the United States* calls for lawmakers in states with HIV-specific criminal statutes to consider whether these statutes “support public health approaches to preventing and treating HIV.”^{16(p37)}

Despite these concerns, little empirical research has been conducted on these laws. Burris et al. compared the safer sex and seropositive disclosure behavior (when applicable) of HIV-positive and high-risk HIV-negative persons living in 2 US cities, one in a state with an HIV

Objectives. We explored associations between awareness of New Jersey's HIV exposure law and the HIV-related attitudes, beliefs, and sexual and seropositive status disclosure behaviors of HIV-positive persons.

Methods. A statewide convenience sample (n = 479) completed anonymous written surveys during 2010. We recruited participants through networks of community-based organizations in the state's 9 health sectors. The survey assessed participants' awareness of New Jersey's HIV exposure law, their sexual and serostatus disclosure behavior in the past year, and their HIV-related attitudes and beliefs. We compared responses of participants who were and were not aware of the law through univariate analyses.

Results. Fifty-one percent of participants knew about the HIV exposure law. This awareness was not associated with increased sexual abstinence, condom use with most recent partner, or seropositive status disclosure. Contrary to hypotheses, persons who were unaware of the law experienced greater stigma and were less comfortable with positive serostatus disclosure.

Conclusions. Criminalizing nondisclosure of HIV serostatus does not reduce sexual risk behavior. Although the laws do not appear to increase stigma, they are also not likely to reduce HIV transmission. (*Am J Public Health*. Published online ahead of print September 20, 2012; e1–e6. doi:10.2105/AJPH.2012.300664)

exposure law and one in a state without such a law. Participants who believed that their state had a law requiring PLWH to practice safer sex were no more likely to engage in safer sex than were those who did not believe their state had such a law.⁹ Horvath et al. compared attitudes toward criminalization of HIV exposure and safer sex behavior among an online sample of HIV-positive and HIV-negative men who have sex with men living in states with and without HIV exposure laws. Although respondents expressed considerable support for the criminalization of HIV transmission to uninformed sexual partners, the study found no difference in the attitudes and disclosure or safer sex behavior of residents of states with and without an HIV exposure law.¹⁷ Galletly et al. surveyed PLWH in Michigan about their state's HIV exposure law and found no association between awareness of the law and increased seropositive status disclosure to all sexual partners. However, persons who were aware of the law disclosed to a greater

proportion of partners prior to engaging in sexual intercourse with them for the first time.¹⁸

Here we report the results of a statewide survey of PLWH in New Jersey, a state with an HIV exposure law. Our primary objective was to explore the impacts, both positive and negative, of this law. Our main hypothesis was that PLWH who were aware that their state had an HIV exposure law would be more likely to report having been in compliance with the law in the previous year (defined here as disclosing their seropositive status to all sexual partners or abstaining from sexual intercourse) than would those who were unaware of the law. We also hypothesized that participants who were aware of the law would experience greater HIV-related stigma, perceive more societal hostility toward PLWH, and be less comfortable disclosing their HIV-positive serostatus than would those who were not aware of the law. Finally, because HIV exposure laws situate the burden of HIV prevention on PLWH,

we hypothesized that participants with knowledge of the law would perceive greater responsibility for preventing HIV infection and would be less willing to engage in risk behaviors with an HIV-negative partner than would those who were unaware of the law.

METHODS

New Jersey's HIV exposure law requires persons who know that they have HIV to disclose their positive serostatus and receive the informed consent of sexual partners prior to engaging in "sexual penetration." Sexual penetration is defined broadly to include vaginal, anal, and oral sexual contact as well as the "insertion of the hand, finger or object into the anus or vagina."¹⁹

Data Collection

Data were collected from samples of HIV-positive and HIV-negative participants. We have reported on the responses of HIV-positive participants here.

Eligibility criteria and recruitment. Individuals who met the following criteria were eligible to complete the study survey for PLWH: (1) they reported that they had HIV, (2) they had lived in New Jersey for at least 1 year, (3) they were aged 18 years or older, and (4) they could complete a self-administered survey written in English. Participants were recruited between March 22 and October 6, 2010, through flyers, print ads, and word of mouth by networks of community-based organizations in each of New Jersey's 9 health sectors. The project coordinator developed recruitment plans for each sector in conjunction with experts in each region. The number of persons recruited in each region was proportional to the number of PLWH in the region.

Survey administration. Participants completed anonymous, self-report, pen-and-paper questionnaires during group data collection sessions. To ensure data reliability, the sessions began with an overview of sample question types, response options, and definitions of key words used in the survey. Participants individually completed their surveys in rooms with tables amply spaced to provide privacy for multiple participants to complete surveys at the same time. When participants finished, they deposited their surveys in a ballot-type box to

protect anonymity. The questionnaire required 30 to 45 minutes to complete.

Measures

When possible, we used validated scales in the study instrument. We developed law-related scales through consultation with experts and focus group interviews and then refined them after pilot testing.

Demographic characteristics and awareness. Demographic items included age, gender, race and ethnicity, marital status, year of HIV diagnosis, and education. Participants were also asked whether they lived in New Jersey and if so, for how long. We assessed whether participants were aware that New Jersey had an HIV exposure law via a single item: "To the best of your knowledge, does New Jersey have a law that requires HIV-positive persons to tell their sex partners that they have HIV?" Response options were yes, no, and not sure. We merged the latter 2 categories for analyses.

Criminalization. Participants were asked to indicate which, if any, of 5 sexual circumstances should be criminalized. The first 3 items addressed sexual activities that PLWH engaged in without disclosure to their seronegative partner. The fourth and fifth items involved PLWH lying to an at-risk sexual partner about their HIV status and PLWH trying to infect a sexual partner. Responses were yes or no. We constructed a support for criminalization scale by summing participants' responses to the 5 items (Cronbach's $\alpha = 0.73$).

Prevention. Participants were asked to allocate responsibility for HIV prevention with the item, "Who is responsible for making sure that an HIV-negative person does not get HIV through sex?" The 5 response options ranged from "the HIV-positive person has full responsibility" to "the HIV-negative person has full responsibility."

Compliance. Participants were asked to indicate the number of persons they had vaginal, anal, or oral sexual intercourse with in the previous 12 months, the number of these partners who knew that the participant had HIV, the number of these partners whom the participant personally informed, and the number whom the participant personally informed prior to having vaginal, anal, or oral sexual intercourse with the partner. We considered participants who reported that they had been

sexually abstinent during the past year or had informed all of their sexual partners prior to engaging in sexual intercourse with them to have been in compliance for the previous year.

Stigma. We assessed HIV-related stigma, defined as the internalization of negative character traits associated with being a PLWH,²⁰ through a series of 18 first-person statements PLWH might make about themselves (e.g., "I deserve a lot of credit for how well I have coped with HIV"; adapted from Westbrook and Bauman²¹; $\alpha = 0.81$). A second 20-item section assessed respondents' perceptions of the general public's attitudes toward PLWH (e.g., "Some people think you should be embarrassed about having HIV"; adapted from Westbrook and Bauman²¹). Likert-type response options on a 4-point scale ranged from strongly disagree to strongly agree ($\alpha = 0.82$).

Status disclosure. We measured comfort with HIV-positive serostatus disclosure with a 12-item section assessing participants' comfort with telling others about, or having others know, their HIV-positive serostatus (e.g., "Most of the people I work with know I have HIV"). Response options ranged from strongly disagree to strongly agree ($\alpha = 0.88$).

Risk behavior. We assessed willingness to engage in risk behavior with 8 questions (e.g., "Would you be willing to have condom-protected vaginal or anal intercourse with an HIV-negative partner if your partner did not know you have HIV?"). Response options were yes or no ($\alpha = 0.81$).

Statistical Analyses

A series of univariate analyses comparing participants who were or were not aware that New Jersey had an HIV exposure law determined whether awareness of the law was associated with hypothesized behaviors and attitudes. Additional univariate analyses compared participants who were or were not in compliance with the law. We assessed the statistical significance of intergroup differences with Pearson χ^2 for categorical data and the Mann-Whitney *U* test for numerical variables.

Multiple logistic regressions analyzed whether significant associations between awareness of the law and scores on attitudinal scales persisted after adjustment for covariates. We also used multiple logistic regression to assess the

relative contributions of predictors of compliance with the law. We entered factors that were significantly associated with compliance at $P < .1$ in univariate analyses into the regression models. We set the α level for statistical significance at $P = .05$ for all analyses.

RESULTS

We screened 1173 HIV-positive and HIV-negative persons for participation. Of those screened, 723 were eligible and participated. We report on results for PLWH ($n = 493$). We excluded 14 PLWH surveys because of missing data on key variables. The final sample comprised 479 persons. Seven persons identified as transgender, and their data were excluded from gender-related analyses.

Table 1 summarizes the demographic characteristics of the sample. Forty-five percent of the participants were female. Two thirds were African American, 16% were Hispanic, and 13% were Caucasian. The mean age was 46.3 years (range = 19–66 years).

Just over half of participants (51%) were aware that New Jersey has a criminal HIV exposure law. Younger persons and persons diagnosed more recently were less likely than older respondents and those diagnosed earlier to be aware of the law (mean age of aware and unaware participants, respectively = 47.3 and 45.3; $z = -2.347$; $P = .02$; mean year of diagnosis for aware and unaware participants, respectively = 1996 and 1998; $z = -3.511$; $P < .001$). No other demographic variables were associated with awareness of the law.

The majority of participants supported the criminalization of nondisclosure of HIV-positive status: just over half of participants (54%) believed it should be against the law for PLWH to engage in condom-protected sexual intercourse with partners who are unaware of the other's HIV-positive status, and more than two thirds (69%) believed that it should be against the law for PLWH to have oral sex with an uninformed partner. Most participants (87%) believed that it should be a crime for a PLWH to have unprotected vaginal or anal intercourse with an uninformed partner.

Compliance

Two thirds (66%) of participants had been sexually active in the previous year. Of these,

TABLE 1—Demographic Characteristics of HIV-Positive Participants in Survey of Awareness of and Attitudes Toward New Jersey's HIV Exposure Law: March–October, 2010

Characteristic	Men, No. (%)	Women, No. (%)	Total, No. (%)
Total	256 (55)	213 (45)	469 (100)
Race/ethnicity			
Black	170 (66)	145 (68)	315 (67)
Hispanic	41 (16)	33 (16)	74 (16)
White	36 (14)	26 (12)	62 (13)
Other or unknown	9 (4)	9 (4)	18 (4)
Exposure			
MSM	82 (32)	...	82 (17)
IDU	65 (25)	63 (30)	128 (28)
MSM/IDU	20 (8)	...	20 (4)
Heterosexual	88 (35)	147 (70)	235 (51)
Marital status ^a			
Married	40 (16)	30 (14)	70 (15)
Long-term relationship	54 (21)	80 (38)	134 (29)
Single	161 (63)	100 (48)	261 (56)
Age, ^a y			
18–29	10 (4)	12 (6)	22 (7)
30–39	29 (11)	36 (17)	65 (14)
40–49	105 (41)	98 (46)	203 (43)
> 49	110 (43)	64 (31)	174 (37)
Education			
< high school diploma	65 (26)	73 (35)	138 (30)
High school diploma or equivalent	91 (36)	73 (34)	164 (35)
Some college or more	96 (38)	71 (31)	167 (35)
Monthly income, \$			
0–999	78 (31)	60 (28)	138 (29)
1000–1999	106 (42)	100 (47)	206 (44)
≥ 2000	70 (27)	51 (24)	121 (26)
HIV diagnosis, y			
< 1986	31 (12)	16 (8)	47 (10)
1987–1994	65 (25)	56 (26)	121 (26)
1995–2002	90 (35)	76 (36)	166 (35)
2003–2011	70 (27)	65 (31)	135 (29)

Note. IDU = intravenous drug user; MSM = men who have sex with men. We excluded 7 participants who self-identified as transgender. Three surveys were missing responses for gender; 4 each for exposure, marital status, and income; and 5 for age. Totals may not add up to 100% because of rounding.

^aMale and female participants differed significantly on relationship status ($\chi^2_{(df=1)} = 16.530$; $P < .001$) and age ($\chi^2_{(df=1)} = 12.299$; $P = .02$).

5% reported engaging solely in oral sex. The majority (83%) of participants reported being in compliance with the law in the previous year. Sexually abstinent participants were in compliance with the law by definition, in that they had no uninformed sexual partners in the previous year. Nearly three quarters of participants who had engaged in anal or vaginal intercourse in the previous year (74%) were also

in compliance with the law: these participants reported having informed all of their sexual partners of their HIV-positive serostatus prior to engaging in intercourse.

We found 5 demographic variables and 3 scale scores significantly associated with a participant having been in compliance with the law. Demographic factors associated with compliance were older age ($z = -3.561$;

$P < .001$), female gender ($\chi^2_{(df=1)} = 7.671$; $P = .006$), self-identification as heterosexual ($\chi^2_{(df=1)} = 5.570$; $P = .02$), low educational attainment ($\chi^2_{(df=1)} = 16.628$; $P = .005$), and involvement in marriage or a long-term relationship ($\chi^2_{(df=1)} = 16.524$; $P < .001$). The 3 scale scores associated with compliance were reluctance to engage in risk behavior ($z = -3.06$; $P = .002$), high degree of comfort with disclosure ($z = -3.65$, $P < .001$), and support for criminalization of nondisclosed exposure to HIV ($z = -6.35$; $P < .001$). In regression analyses, 2 covariates remained significant: support for criminalization of nondisclosed exposure to HIV (odds ratio [OR] = 1.53; 95% confidence interval [CI] = 1.24, 1.88) and comfort with disclosure (OR = 0.50; 95% CI = 0.30, 0.83). Awareness of New Jersey's HIV exposure law was not associated with compliance.

Effectiveness of the Law

The most direct tests of the effectiveness of the law were whether, in the previous year, participants who knew about the law were more likely than unaware participants (1) to have been sexually abstinent or (2) to have disclosed their status to all of their sexual partners prior to engaging in vaginal, anal, or oral intercourse with those partners for the first time (Table 2). The first test revealed no evidence of

this. Respondents who were aware of the law were more likely than those who were not aware to report having been sexually active (rather than sexually abstinent) in the previous year ($\chi^2_{(df=1)} = 4.53$; $P = .03$). We also found no significant difference in compliance with the law in the past year between sexually active participants who were aware of the law and those who were not ($\chi^2_{(df=1)} = 0.05$; $P = 0.82$).

To further explore potential effects of the law, we compared aware and unaware participants on several other sexual behavior variables. Among sexually active participants, awareness of the law was not associated with having personally informed all sexual partners about their positive serostatus at some point in the sexual relationship (whether the partner was informed before the first sexual experience or after) or with participants reporting that all of their sexual partners knew that the participant had HIV, whether the participant informed the partners ($\chi^2_{(df=1)} = 0.533$; $P = 0.47$) or believed they were informed by another source ($\chi^2_{(df=1)} = 0.872$; $P = 0.35$). Awareness of the law was not associated with having informed a greater proportion of partners ($z = -0.906$; $P = .37$), with having fewer sexual partners in the previous year ($z = -0.534$; $P = .59$), or with having used a condom with the most recent sexual partner ($\chi^2_{(df=1)} = 1.153$; $P = 0.28$).

Attitudes and Inadvertent Effects

Ninety percent of participants believed that PLWH should bear half or more than half of the responsibility for ensuring that HIV is not transmitted when serodiscordant partners engage in vaginal, anal, or oral intercourse, and one third (34%) believed that PLWH have full responsibility for ensuring that HIV-negative sexual partners do not contract HIV. We found no association between awareness of the law and perceived responsibility for HIV prevention (Table 2).

The majority of participants (85%) reported that they would not be willing to engage in unprotected anal or vaginal intercourse with an HIV-negative partner who was not informed that they had HIV. However, we found no association between awareness of the law and willingness to engage in unprotected sexual intercourse with an uninformed partner.

To examine potential negative effects of New Jersey's HIV exposure law on PLWH, we compared the responses of participants who were and were not aware of the law on scales assessing comfort with seropositive status disclosure, perceived societal hostility toward PLWH, and HIV-related stigma (Table 2). Contrary to our hypotheses, participants who were unaware of the law were less comfortable with seropositive status disclosure

TABLE 2—Correlates of Survey Participants' Awareness of New Jersey's HIV Exposure Law: March–October, 2010

Variable	Aware, ^a No. (%) or Mean \pm SD	Unaware, ^b No. (%) or Mean \pm SD	Cross-Group Comparison
Sexually abstinent for the past y	72 (44)	91 (56)	$\chi^2_{(df=1)} = 4.53$; $P = .03$
In compliance with the law ^c	195 (83)	189 (84)	$\chi^2_{(df=1)} = 0.035$; $P = .85$
Sexually active and in compliance with the law	123 (76)	98 (73)	$\chi^2_{(df=1)} = 0.054$; $P = .82$
Perceived responsibility for HIV prevention ^d			$\chi^2_{(df=1)} = 1.08$; $P = .87$
More for PLWH	108 (45)	110 (47)	
Equal	111 (46)	96 (41)	
More for HIV-negative persons	23 (10)	26 (11)	
HIV-related stigma ^e	1.86 \pm 0.38	2.02 \pm 0.42	$z = -3.68$; $P < .001$
Societal hostility ^e	2.67 \pm 0.42	2.77 \pm 0.40	$z = -2.06$; $P = .04$
Comfort with disclosure ^e	2.43 \pm 0.60	2.70 \pm 0.58	$z = -4.79$; $P < .001$

Note. PLWH = persons living with HIV. Totals may not add up to 100% because of rounding.

^aThe sample size was $n = 244$ (51%).

^bThe sample size was $n = 235$ (49%).

^cDefined as reporting having been sexually abstinent for the past year or having disclosed positive serostatus to all sexual partners in the past year.

^dResponses on a 5-point scale, with 1, "the HIV-positive person has full responsibility," to 5, "the HIV-negative person has full responsibility."

^eResponses on a 4-point scale, with 1, strongly disagree, to 4, strongly agree.

($z = -4.79$; $P < .001$), internalized more HIV-related stigma ($z = -3.68$; $P < .001$), and perceived more societal hostility toward PLWH ($z = -2.06$; $P = .04$) than did those who were aware of the law.

We used multiple logistic regression to analyze associations between each of these scale measures and awareness of the law, with adjustment for age and year of HIV diagnosis, which were themselves significantly related to awareness of the law. The associations between being unaware of the law and HIV-related stigma (OR = 0.404; 95% CI = 0.242, 0.675) and discomfort with disclosure (OR = 0.506; 95% CI = 0.353, 0.726) persisted after adjustment for age and year of diagnosis. We found no significant association between being unaware of the law and perceived hostility after adjustment for age and diagnosis year (OR = 0.660; 95% CI = 0.398, 1.094).

DISCUSSION

Although the possible impact of HIV exposure laws has provoked considerable discussion, we have little direct information about even the most basic questions concerning these laws, such as whether PLWH living in states with HIV exposure laws are aware of the laws, and whether, if they are aware, this awareness increases the likelihood that they will disclose their seropositive status to all prospective sexual partners or abstain from sexual intercourse.¹⁸ We explored these unanswered questions in a statewide convenience sample of PLWH in New Jersey, a state with an HIV exposure law.

Just over half of the participants were aware that New Jersey has an HIV exposure law. The majority of participants (whether aware or unaware) had been in compliance with the law for the previous year. Either they had been sexually abstinent or they reported disclosing their HIV status to all of their sexual partners prior to engaging in vaginal, anal, or oral intercourse. Awareness that New Jersey has an HIV exposure law was not associated with compliance. However, compliance with the law—that is, disclosing to all prospective sexual partners or abstaining from sexual intercourse—was significantly associated with support for criminalization and comfort with seropositive status disclosure. The association between

support for criminalization and reporting being in compliance with the law is likely an example of normative compliance: people tend to comply with laws that are consistent with their beliefs.²² The association between comfort with seropositive status disclosure and compliance may be more telling. This result suggests that intervening to increase comfort with seropositive status disclosure may be a better way to achieve the desired behaviors (disclosure or abstinence) than is punitive legislation.

Contrary to our hypotheses about potential inadvertent negative effects of the law, persons who were unaware of the law were less comfortable with disclosure, internalized more stigma, and perceived more hostility toward PLWH. Although the association between awareness and perceived hostility became nonsignificant after adjustment for age and diagnosis year, the significant relationship between being unaware of the law and stigma and discomfort with disclosure persisted. Further research is needed to explore factors that might account for these unexpected associations.

Our findings suggest that awareness that New Jersey has an HIV exposure law had little if any effect on the disclosure behavior of PLWH. An effect of the law on prevention behaviors such as engaging in safer sex was also not supported. Participants with knowledge of the law did not report having fewer sexual partners or engaging in safer sex with their most recent sexual partner more often than those who were unaware of the law. Participants who were aware of the law also did not perceive greater responsibility for HIV prevention and were not less willing to engage in risk behaviors with an HIV-negative partner than did those who were unaware of the law. For our respondents, New Jersey's HIV exposure law did not appear to be an effective structural-level HIV prevention intervention.

Our study had several limitations. Data were derived from self-report and were not (and in many cases could not be) verified externally, a single item assessed awareness of the law, and law-related scales had not previously been fully validated. These limitations may reduce the validity of the findings. The use of a convenience rather than a random sample reduced generalizability of results, which was further

reduced by the variability of criminal HIV exposure laws from state to state.

Additional research on the impact of HIV exposure laws is needed. HIV exposure laws differ greatly from state to state, their penalties vary widely, and the frequency with which they are applied varies as well.^{2,4} Each of these factors may influence how PLWH respond to the laws. Research conducted in states with different laws could be illuminating. Further research on the impact of criminal HIV exposure laws on other groups, such as persons at increased risk for HIV infection, HIV testing counselors, and public health workers serving persons living with and at risk for HIV, is also needed. ■

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Contributors

C. L. Galletly conducted initial data analyses and wrote the article. L. R. Glasman and S. D. Pinkerton helped analyze data and revise the article. W. DiFranceisco reviewed and provided substantive comments on data analyses and the article.

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Human Participant Protection

This study was approved by the Medical College of Wisconsin's institutional review board.

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