

# HIV-Related Stigma and HIV Prevention Uptake Among Young Men Who Have Sex with Men and Transgender Women in Thailand

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## Abstract

HIV-related stigma is a pervasive structural driver of HIV. With an HIV epidemic among young men who have sex with men (MSM) and transgender women (TG) in Thailand characterized as explosive, we conducted a cross-sectional survey among MSM and TG aged 18–30 years. From April–August 2013, participants recruited using venue-based sampling from gay entertainment sites and community-based organizations completed a tablet-assisted survey interview in Thai language. We conducted multiple logistic regression to assess correlations between HIV-related stigma (felt-normative, vicarious domains) and socio-demographic variables, HIV vulnerabilities (gay entertainment employment, sex work, forced sex history), and HIV prevention uptake (condom use, HIV testing, rectal microbicide acceptability). Among participants ( $n=408$ ), 54% identified as gay, 25% transgender, and 21% heterosexual. Two-thirds (65.7%) were employed at gay entertainment venues, 67.0% had more than three male partners (past month), 55.6% had been paid for sex, and 4.5% were HIV-positive. One-fifth (21.3%) reported forced sex. Most participants reported experiencing felt-normative and vicarious HIV-related stigma. Adjusting for socio-demographics, participants with higher total HIV-related stigma scores had significantly lower odds of HIV testing and rectal microbicide acceptability, and higher odds of having experienced forced sex. Both vicarious and felt-normative dimensions of HIV-related stigma were inversely associated with HIV testing and rectal microbicide acceptability. Our findings suggest that HIV-related stigma harms the health of HIV-negative MSM and TG at high risk for HIV infection. HIV-related interventions and research among young MSM and TG in Thailand should address multiple dimensions of HIV-related stigma as a correlate of risk and a barrier to accessing prevention.

## Introduction

MEN WHO HAVE SEX WITH MEN (MSM) and transgender women (TG) in Thailand are disproportionately impacted by HIV. In comparison with an HIV prevalence of 1.1% in the general Thai population, national prevalence is estimated at 7% among MSM<sup>1</sup> and 12% among TG,<sup>2,3</sup> with 30% HIV prevalence documented among MSM in Bangkok.<sup>4</sup> Disproportionate HIV infection risks among MSM and TG globally are best understood in the context of structural drivers of HIV.<sup>2,5–7</sup> HIV-related stigma is a pervasive structural driver of HIV that functions distally to reduce access to HIV prevention resources, HIV testing, and treatment.<sup>6,8–13</sup> Despite elevated HIV infection risks among MSM and TG in Thailand, scant research has assessed the associations between HIV-related stigma, HIV risk, and prevention in this context.

HIV-related stigma refers to multi-level processes of devaluation that involve labeling, status loss, and discrimination targeting people living or associated with HIV.<sup>14</sup> Cultural variations in conceptualizations of sexuality and stigma underscore the need to examine HIV-related stigma across different contexts.<sup>15,16</sup> Widespread HIV-related stigma has been documented in Thailand, resulting in job loss, health care discrimination, and mental health issues among people living with (PLHIV).<sup>17–20</sup> HIV-related stigma is multidimensional and includes awareness of negative societal norms and judgments (*felt-normative or perceived stigma*)<sup>15</sup> and hearing stories of discriminatory treatment (*vicarious stigma*) towards PLHIV.<sup>21,22</sup>

Stigma surrounding HIV has been intrinsically linked with marginalized groups, such as MSM and sex workers, since the beginning of the epidemic.<sup>23</sup> This symbolic nature of

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HIV-related stigma reproduces shame and blame for HIV among these already marginalized populations and contributes to the conceptualization of disease as punishment.<sup>24,25</sup> Investigations in India<sup>22</sup> and the US<sup>26</sup> indicate HIV-related stigma has negative psychological impacts on HIV-negative MSM, in addition to MSM living with HIV, highlighting the importance of examining health impacts of HIV-related stigma on MSM across HIV serostatus. Even less is known about health impacts of HIV-related stigma among TG.

Discrimination towards MSM and TG in Thailand has been described as pervasive and grounded in negative stereotypes reinforced by media, cinema, and TV.<sup>27,28</sup> Employment discrimination among gender non-conforming MSM and among TG result in many engaging in survival sex work.<sup>28,29</sup> Although HIV-related stigma has been described as a barrier to accessing HIV prevention resources and testing in various global contexts,<sup>6,8,11,12</sup> less is known about the impacts of HIV-related stigma on HIV risk, HIV testing, and uptake of HIV prevention strategies among MSM and TG in Thailand.

Findings regarding the influence of HIV-related stigma on condom use are mixed and largely derived from US-based investigations. One US study with PLHIV found no relation between HIV-related stigma and condom use,<sup>30</sup> while other US studies with rural MSM reported associations between HIV-related stigma and sexual risk behavior.<sup>31,32</sup> Studies among MSM and TG in Thailand<sup>33–35</sup> have identified correlates of inconsistent condom use, including socio-demographic (e.g., gay identity versus heterosexual/bisexual,<sup>34,36</sup> lower education<sup>37</sup>) and health indicators (substance use,<sup>28</sup> recent HIV diagnosis<sup>35</sup>), low HIV knowledge,<sup>34</sup> and forced sex.<sup>37</sup> No studies were found that examined associations between HIV-related stigma and condom use among MSM or TG in Thailand.

HIV testing is central to HIV prevention and has significant epidemiological consequences, particularly for newly infected persons who have higher viral loads and therefore higher infectiousness in sexual encounters.<sup>38,39</sup> Research in China with MSM,<sup>40</sup> and in the US with MSM and TG,<sup>8</sup> found anticipated HIV-related stigma was associated with lower likelihood of HIV testing. Studies with general populations in South Africa also highlight correlations between HIV-related stigma and lower HIV testing levels among general populations of adults.<sup>12,41,42</sup> Among TG sex workers in Bangkok, only half had tested for HIV, and being tested was associated with receiving HIV prevention information and resources (e.g., condoms).<sup>28</sup> We were unable to locate Thai studies that explored HIV-related stigma and HIV testing among MSM and TG.

Scant research has addressed associations between HIV stigma and acceptability of new prevention technologies. Studies with MSM in Thailand have revealed moderate acceptability of new biomedical prevention options such as PrEP, and technologies in development, such as HIV vaccines.<sup>33,43–45</sup> Ongoing development of topical rectal microbicides that include antiretroviral medications,<sup>46</sup> with a Phase II trial in progress,<sup>47</sup> may yield much needed new prevention options to reduce HIV infection risk associated with condomless anal sex.

However, a qualitative study of rectal microbicide acceptability with MSM and TG in Pattaya and Chiang Mai revealed that discrimination targeting MSM/TG and HIV-related stigma may pose significant challenges to rectal microbicide acceptability.<sup>48</sup> For instance, participants reported that peo-

ple would think they were HIV-positive and “dirty” if they used a rectal microbicide.<sup>48</sup> This underscores the potential negative impact HIV-related stigma could have on rectal microbicide uptake, and the need for socio-behavioral research to facilitate rectal microbicide implementation science.<sup>48</sup> The association between HIV-related stigma and rectal microbicide acceptability among MSM and TG warrants further investigation.

We aim to address three gaps in the literature in this study. First, several investigations have yielded mixed results regarding associations between HIV-related stigma and HIV preventive behaviors, such as condom use.<sup>30–32</sup> This has not been explored in Thailand among MSM and TG, groups at highest risk of HIV infection. Second, while investigations have identified HIV-related stigma as a predictor of lower HIV testing rates among MSM,<sup>8,12</sup> this association has not been explored among TG or in the Thai context. Finally, scant research has explored associations between HIV-related stigma and acceptability of new prevention technologies, such as rectal microbicides, among TG and MSM.<sup>46–48</sup>

The objective of our study was to explore associations between HIV-related stigma and (1) socio-demographic variables; (2) HIV vulnerabilities (gay entertainment employment, sex work, forced sex history); and (3) HIV prevention uptake (condom use, HIV testing, rectal microbicide acceptability). Specifically, we examined if experiences of HIV-related stigma among MSM and TG in Thailand would be associated with: sex work; gay entertainment employment; increased likelihood of having experienced forced sex; lower rates of consistent condom use; decreased likelihood of having received an HIV test; and lower levels of rectal microbicide acceptability.

## Methods

### *Study background*

We worked in conjunction with community-based organizations (CBOs) in Chiang Mai and Pattaya that serve MSM or TG, including male and TG service (sex) workers, to recruit a community sample of young MSM and TG. Venue-based sampling was conducted in go-go bars, host bars, massage parlors/spas, gay recreational sites, and CBO offices. Study inclusion criteria were being MSM or TG, from 18–30 years-old, and able to understand Thai language. Participants were invited individually by trained Thai community research staff. The study received approval from the University of Toronto Research Ethics Board, and MPlus+ (Chiang Mai) and Take Care!! (Pattaya).

### *Data collection*

The survey questionnaire was constructed in English, translated into Thai, back-translated into English and revised. The questionnaire was then programmed in Thai language on Android tablet devices, debugged, and pilot tested with the study populations. Trained Thai interviewers familiar with the local communities provided instructions to participants on use of the tablets, observed self-administration of practice questions, and remained on hand to respond to questions or difficulties. The average time to survey completion was 33 min (range: 25–45 min).

## Measures

Socio-demographic characteristics included region born, age, sexual orientation/gender identity, education, income, living situation, and recruitment city. We dichotomized age at 25 years or older versus under 25 years. We assessed gender identity (transgender, male) and sexual orientation (gay, heterosexual, bisexual). Thailand's dominant conceptualizations of 'phet' include a spectrum of both sexuality and gender expression; accordingly, we addressed sexual and gender identity in one question. We grouped bisexual- and heterosexual-identified MSM in the same analytic category due to the low percentage (4.4%) of bisexual participants. We categorized education as no formal education to 6th grade, 7th grade to some high school, and high school diploma or higher. Monthly income was dichotomized at 7500 Thai baht (approximately \$233 USD), below Thailand's minimum wage. Participant living situation was categorized as living with family, a partner/boyfriend, alone or with a roommate.

HIV vulnerabilities included a history of forced sex (ever, never), working in the gay entertainment industry, and involvement in sex work. HIV prevention uptake included: (1) condom use (always consistent vs. inconsistent); (2) (self-reported HIV tested status (tested, untested); and (3) rectal microbicide acceptability. Trained interviewers described rectal microbicides as a new HIV prevention product in development that would possibly be in the form of a gel ("gel" or "lube" in Thai) or suppository ("insert drug" in Thai)—both of which were familiar to participants—and would be applied to the anus and used every day or before sex to help prevent HIV infection. Acceptability of a hypothetical rectal microbicide was assessed by the question: "If a rectal microbicide became available, do you think you would use it?" The response was measured as definitely/probably willing to use versus definitely/probably not willing to use/unsure.

We measured and assessed HIV-related stigma using a 21-item scale adapted for the Indian context. This scale was validated with general populations of PLHIV in India,<sup>21</sup> and with HIV-negative MSM in India.<sup>22</sup> The only measure we found of HIV-related stigma used in Thailand was among TB patients and PLHIV (sexuality not defined) that examined community and patient perspectives towards HIV.<sup>20</sup> As this scale did not include sub-scales to measure felt-normative or vicarious dimensions of HIV-related stigma that may be experienced by groups associated with, but not necessarily living with HIV, such as HIV-negative MSM,<sup>20</sup> we adapted the scale developed by Steward et al.<sup>21</sup> We worked with Thai key informants (including SR and ST) to adapt items for the Thai context.

The first 11 items address felt-normative stigma<sup>21,22</sup> by asking about how members of the participants' community treat or think about PLHIV. Felt-normative stigma questions include, "In your community, how many people avoid visiting the homes of people with HIV?" and "In your community, how many people think that a person with HIV is disgusting?", and are measured on a Likert scale ranging from 0 ("No one") to 3 ("Most people"). The 11<sup>th</sup> item is an addition that was specific to the Indian context: "In your community, how many people think that men who have sex with men deserve to get HIV?"<sup>22</sup>

The second 10 items address vicarious stigma<sup>21,22</sup> by asking about stories that the participant may have heard about

PLHIV. Vicarious stigma questions include, "How often have you heard stories about people being mistreated by hospital workers because of their HIV-positive status?" and "How often have you heard stories about people being forced by family members to leave their home because they were HIV-positive?" These items are measured on a Likert scale ranging from 0 ("Never") to 3 ("Often"). We created felt-normative and vicarious stigma sub-scale scores by first rescaling the responses to a 0–100 scale and summing the mean of items in the two sub-scales; to create a total stigma score we calculated the mean of all items. Scale reliability was high for the overall HIV-related stigma scale [Cronbach's alpha ( $\alpha$ )=0.91], the felt-normative HIV-related stigma sub-scale ( $\alpha$ =0.93), and vicarious HIV-related stigma sub-scale ( $\alpha$ =0.85).

## Statistical analysis

All analyses were performed using Stata version 11.2 (StataCorp 2009, College Station, TX). We characterized the sample in terms of socio-demographics, HIV vulnerabilities, and HIV prevention uptake using descriptive statistics. Where table cell sizes were five or less, we used Fisher's exact non-parametric test. To compare stigma score across categorical variables, we used *t*-tests for comparisons across variables with two groups and ANOVA for comparisons across variables with two or more groups. Stigma scale item data were complete so applying methods to account for missing data were unnecessary.

Logistic regression was used to determine the unadjusted association between HIV-related stigma and selected HIV vulnerabilities and HIV prevention uptake. Further, we used multiple logistic regression to quantify the association between stigma and HIV vulnerabilities, and between stigma and HIV prevention uptake, adjusted by age, education, sexual orientation/gender identity, and recruitment city. Lastly, we tested the associations after stratifying the sample on sexual orientation. We standardized the stigma scale scores for use in the logistic regression models in order for the model coefficients to represent a meaningful change in reported stigma. The model coefficients represent the increased or decreased odds of the risk factor for a one standard deviation increase in reported stigma. We assessed model goodness-of-fit using Hosmer and Lemeshow's test and applied standard model diagnostic tests to identify and assess overly influential observations and covariate multicollinearity.

## Results

### Participant socio-demographic characteristics

Table 1 describes socio-demographic characteristics, HIV vulnerabilities, and HIV prevention uptake of the sample ( $n = 408$ ). Approximately half of the participants were born in the Northern region (50.5%), slightly over a quarter were born in the Northeast (27.7%), and the remainder were born in other regions. Among participants, 51.2% were under 25 years old, 41.4% had not completed high school, 38.7% earned 7500 Thai Baht or less per month, and most lived with a roommate (35.3%) rather than alone (27.0%), with a partner/boyfriend (20.6%), or with their family (17.2%). Most participants self-identified as gay (53.2%), followed by transgender (25.4%). The remaining 21.0% self-identified as heterosexual or bisexual.

TABLE 1. SOCIO-DEMOGRAPHIC, HIV VULNERABILITY, AND HIV PREVENTION UPTAKE VARIABLES BY CITY AND HIV-RELATED STIGMA SCORE

	<i>Total</i>		<i>Chiang Mai</i>		<i>Pattaya</i>		<i>p</i>	<i>HIV-related stigma</i>		
	<i>N=408</i> <i>n</i>	<i>100%</i> <i>col. %</i>	<i>N=204</i> <i>n</i>	<i>50%</i> <i>col. %</i>	<i>N=204</i> <i>n</i>	<i>50%</i> <i>col. %</i>		<i>Total score</i>		
								<i>Mean</i>	<i>SE</i>	<i>p</i>
<i>Socio-demographics</i>										
Region born							<0.001			0.274
North	206	50.49	180	88.24	26	12.75		35.65	1.61	
Northeast	113	27.70	8	3.92	105	51.47		39.91	1.98	
Central/west	50	12.25	9	4.41	41	20.10		42.54	3.40	
East	28	6.86	4	1.96	24	11.76		37.36	4.24	
South	11	2.70	3	1.47	8	3.92		36.08	5.99	
Age							0.023			0.700
<25 years	209	51.23	116	56.86	93	45.59		38.22	1.50	
≥25 year	199	48.77	88	43.14	111	54.41		37.36	1.67	
Education							0.001			0.125
No formal education up to 6th grade	55	13.48	28	13.73	27	13.24		32.27	3.09	
7th grade-some high school	114	27.94	41	20.1	73	35.78		39.65	2.04	
≥High school	239	58.58	135	66.18	104	50.98		38.19	1.47	
Monthly income [Thai baht (THB)] <sup>a</sup>							1.000			0.909
0–7500 THB	158	38.73	79	38.73	79	38.73		37.96	1.76	
>7500 THB	250	61.27	125	61.27	125	61.27		37.70	1.44	
Living situation							<0.001			0.381
With family	70	17.16	55	26.96	15	7.35		33.74	2.90	
With partner/boyfriend	84	20.59	38	18.63	46	22.55		38.87	2.52	
Alone	110	26.96	65	31.86	45	22.06		37.65	2.25	
With roommate	144	35.29	46	22.55	98	48.04		39.27	1.71	
Sexual orientation/gender identity							0.020			0.168
Heterosexual, straight/bisexual	86	21.08	54	26.47	32	15.69		33.87	2.42	
Gay	218	53.43	98	48.04	120	58.82		39.29	1.54	
Transgender	104	25.49	52	25.49	52	25.49		37.94	2.16	
Recruitment city										0.027
Chiang Mai	204	50.00						35.33	1.63	
Pattaya	204	50.00						40.27	1.51	
<i>HIV vulnerabilities</i>										
Gay entertainment industry employment							<0.001			0.436
No	140	34.31	89	43.63	51	25.00		36.60	1.79	
Yes	268	65.69	115	56.37	153	75.00		38.43	1.42	
Ever forced into sex							0.546			0.013
No	321	78.68	163	79.90	158	77.45		36.37	1.25	
Yes	87	21.32	41	20.10	46	22.55		43.09	2.38	
Received payment for sex (missing=3)							0.002			0.957
Not at all	180	44.44	105	51.98	75	36.95		37.72	1.66	
Yes, with any frequency	225	55.56	97	48.02	128	63.05		37.59	1.52	
Paid partner for sex (missing=23)							<0.001			0.473
Not at all	255	66.23	161	80.50	94	50.81		38.35	1.43	
Yes, with any frequency	130	33.77	39	19.50	91	49.19		36.59	1.98	
<i>HIV prevention uptake</i>										
Rectal microbicide acceptability							0.204			0.005
Not willing to use/not sure	33	8.09	13	6.37	20	9.80		48.44	3.95	
Definitely/probably willing to use	375	91.91	191	93.63	184	90.20		36.87	1.15	
HIV testing							0.552			0.009
Not tested	202	49.51	104	50.98	98	48.04		40.73	1.60	
Tested	206	50.49	100	49.02	106	51.96		34.94	1.53	
Condom use consistency (missing=12)							0.776			0.168
Inconsistent	142	35.86	70	35.18	72	36.55		39.88	1.83	
Always consistent	254	64.14	129	64.82	125	63.45		36.61	1.44	
Condom use last time anal sex							0.350			0.515
No	67	16.42	37	18.14	30	14.71		39.45	2.72	
Yes/not applicable	341	83.58	167	81.86	174	85.29		37.48	1.22	

<sup>a</sup>7500 Thai baht = ~\$211 USD.

Participants were recruited evenly from Chiang Mai and Pattaya from April to August 2013. Participants recruited in Chiang Mai were more likely to be from the north (Fisher's exact  $p < 0.01$ ), younger ( $\chi^2[1] = 5.2, p = 0.02$ ), more educated ( $\chi^2[2] = 13.0, p = 0.01$ ), live alone ( $\chi^2[3] = 46.0, p < 0.01$ ), and self-identify as heterosexual/straight or bisexual ( $\chi^2[2] = 7.8, p = 0.02$ ). Pattaya participants were more likely to be employed at gay entertainment venues ( $\chi^2[1] = 15.7, p < 0.01$ ), to have been paid for sex ( $\chi^2[1] = 9.3, p = 0.02$ ), and to have paid for sex ( $\chi^2[1] = 37.9, p < 0.01$ ). Nineteen participants (4.5%) self-reported testing HIV-positive. HIV-positive participants were more likely to be from eastern Thailand (including Pattaya) (Fisher's exact  $p = 0.02$ ), with less education (Fisher's exact  $p = 0.01$ ) and lower income ( $\chi^2[1] = 5.0, p = 0.03$ ) than HIV-negative or untested participants.

#### HIV vulnerabilities

Two-thirds of participants (65.7%) were employed at gay entertainment venues. Over half (55.6%) reported having been paid for sex, while a third (33.8%) reported having paid other partners for sex during the past 3 months. One-fifth (21.3%) reported being forced to have sex against their will. There were no significant differences in HIV vulnerabilities (gay entertainment industry employment, history of forced sex, received payment for sex, paid for sex) between HIV-positive and HIV-negative or untested participants.

#### HIV prevention uptake

Over the past month, 64.1% of participants reported condom use all of the time, and 83.6% reported condom use the last time they had anal sex. Just under half of participants (48.1%) reported ever being tested for HIV. The vast majority of participants (92.0%) indicated willingness to use a rectal microbicide if it became available. There were no significant differences in HIV prevention uptake variables between HIV-positive and HIV-negative or untested participants.

#### Felt-normative and vicarious HIV-related stigma

The average HIV-related, felt normative, and vicarious stigma scores were 37.80 (SD=22.55, range=0–98.41), 46.56 (SD=30.70, range=0–100), and 28.17 (SD=22.50, range=0–100), respectively. Total and felt-normative stigma scores were significantly lower for HIV-positive than HIV-negative or untested participants, but there was no significant difference in vicarious stigma scores. Table 1 shows total stigma score differences by socio-demographic, HIV vulnerability, and HIV prevention uptake measures. In bivariate

associations, total HIV-related stigma was higher for those who were recruited in Pattaya (Pattaya: 40.3 vs. Chiang Mai: 35.3,  $t = -2.22, p = 0.03$ ), who were untested for HIV (not tested: 40.7 vs. tested: 34.9,  $t = 2.61, p < 0.01$ ), who have a history of forced sex (forced sex: 43.1 vs. none: 36.4,  $t = -2.48, p = 0.01$ ) and are unwilling to use or unsure about using a rectal microbicide (not willing/unsure: 48.4 vs. willing: 36.9,  $t = 2.85, p < 0.01$ ) (see Table 1).

Table 2 shows the raw and adjusted odds ratios for the associations between HIV-related stigma and consistent condom use, being tested for HIV, forced sex, and rectal microbicide acceptability. Adjusted for age, education, sexual orientation/gender identity, and recruitment city, participants who reported higher total HIV-related stigma scores were less likely to have been tested for HIV (AOR 0.75, 95% CI 0.61, 0.92) and were less willing to use a rectal microbicide (AOR 0.57, 95% CI 0.39, 0.83). Participants reporting higher HIV-related stigma scores had greater odds of reporting a history of forced sex (AOR 1.39, 95% CI 1.09, 1.79).

Results stratified by sexual orientation (not shown) indicate that self-identified gay men who reported higher total HIV-related stigma had lower odds of having been tested for HIV (AOR 0.72, 95% CI 0.54, 0.96), lower odds of rectal microbicide acceptability (AOR 0.55, 95% CI 0.31, 0.98), and higher odds of a past forced sexual experience (AOR 1.52, 95% CI 1.08, 2.14). Self-identified transgender women who reported higher total HIV-related stigma had lower odds of being tested for HIV (AOR 0.14, 95% CI 0.41, 0.99) (see Table 2).

Table 3 presents the raw and adjusted odds ratios for associations between felt-normative and vicarious domains of HIV-related stigma, and consistent condom use, being tested for HIV, forced sex, and rectal microbicide acceptability. Felt-normative (AOR 0.74, 95% CI 0.60, 0.95) and vicarious (AOR 0.72, 95% CI 0.53, 0.99) stigma domains were associated with lower odds of having received an HIV test. Participants reporting vicarious stigma were more likely to have experienced forced sex (AOR 1.69, 95% CI 1.17, 2.45). Both felt-normative (AOR 0.63, 95% CI 0.41, 0.95) and vicarious (AOR 0.54, 95% CI 0.32, 0.90) HIV-related stigma were associated with lower likelihood of accepting a rectal microbicide (see Table 3).

#### Discussion

In our study among community-recruited MSM and TG in Pattaya and Chiang Mai, Thailand, HIV-related stigma was significantly associated with lower HIV testing uptake, and a history of forced sex, in addition to lower acceptability of a

TABLE 2. ODDS OF HIV VULNERABILITIES AND HIV PREVENTION UPTAKE AS A FUNCTION OF TOTAL HIV-RELATED STIGMA

	Total HIV-related stigma scale							
	OR	95% CI		p	AOR <sup>a</sup>	95% CI		p
Consistent condom use (vs. inconsistent)	0.87	0.70	1.06	0.168	0.88	0.71	1.08	0.215
HIV tested (vs. not tested)	0.77	0.63	0.94	0.010	0.75	0.61	0.92	0.007
Forced sex (vs. none)	1.35	1.06	1.71	0.014	1.39	1.09	1.79	0.008
Rectal microbicide acceptability (vs. unwilling/unsure)	0.60	0.42	0.86	0.006	0.57	0.39	0.83	0.003

<sup>a</sup>Adjusted for age, education, sexual orientation/gender identity, and recruitment city ( $N = 389$ ).

TABLE 3. ODDS OF HIV VULNERABILITIES AND HIV PREVENTION UPTAKE AS A FUNCTION OF FELT-NORMATIVE AND VICARIOUS HIV-RELATED STIGMA

<i>HIV vulnerabilities and HIV prevention uptake</i>	<i>Felt-normative HIV-related stigma</i>						<i>Vicarious HIV-related stigma</i>									
	<i>OR</i>	<i>95% CI</i>		<i>p</i>	<i>AOR<sup>a</sup></i>	<i>95% CI</i>		<i>p</i>	<i>OR</i>	<i>95% CI</i>		<i>p</i>	<i>AOR<sup>a</sup></i>	<i>95% CI</i>		<i>p</i>
Consistent condom use (vs. inconsistent)	0.87	0.71	1.07	0.197	0.88	0.72	1.09	0.247	0.90	0.74	1.11	0.331	0.91	0.74	1.12	0.387
HIV tested (vs. not tested)	0.77	0.63	0.94	0.01	0.76	0.62	0.94	0.01	0.86	0.70	1.04	0.121	0.82	0.67	1.01	0.063
Forced sex (vs. none)	1.25	0.98	1.59	0.068	1.27	0.99	1.62	0.059	1.33	1.06	1.66	0.015	1.39	1.10	1.76	0.007
Rectal microbicide acceptability (vs. unwilling/unsure)	0.65	0.44	0.94	0.022	0.64	0.44	0.94	0.022	0.67	0.49	0.93	0.016	0.63	0.45	0.88	0.007

<sup>a</sup>Adjusted for age, education, sexual orientation/gender identity, and recruitment city ( $n = 389$ ).

rectal microbicide. Felt-normative and vicarious HIV-related stigma domains were associated with lower likelihood of HIV testing and lower rectal microbicide acceptability. Consistent with prior research with MSM and TG in other contexts, HIV-related stigma appears to be a deterrent to HIV testing.<sup>8,40</sup> Our findings also corroborate qualitative research that highlighted HIV-related stigma as a potential barrier to rectal microbicide acceptability among MSM and TG in Thailand.<sup>48</sup>

The average standardized felt normative stigma score was 47, meaning that most participants reported at least some people in their community held negative beliefs and attitudes towards PLHIV, including beliefs that PLHIV are disgusting, shameful, and bring shame to their families. The average standardized vicarious stigma score was 28; this score reflects that participants reported sometimes hearing stories about mistreatment of PLHIV on the majority of scale items. These items include mistreatment by hospital staff and family, and social exclusion based on HIV-positive serostatus. These findings in and of themselves suggest that among a predominantly HIV-negative sample of MSM and TG, the majority of participants have been exposed to negative community beliefs about PLHIV, and heard stories of PLHIV mistreatment. Addressing HIV-related stigma in Thailand is therefore a pressing concern.

Counter to what we hypothesized, we did not find associations between HIV-related stigma and condom use. A study with rural MSM in the US found that low self-esteem and internalized homophobia mediated the association between HIV-related stigma and sensation seeking, which directly affected sexual risk practices.<sup>32</sup> Exploring the psychosocial impacts of HIV-related stigma, sexual stigma, and how these potentially mediate sexual risk practices warrants further investigation among MSM and TG in the Thai context. Of note is that two-thirds of participants in our study were employed in gay entertainment venues and used condoms consistently. Previous studies in Thailand indicate that MSM employed in the gay entertainment industry may use condoms more consistently than other MSM and TG,<sup>36,37</sup> which may reflect the success of ongoing targeted HIV prevention programs among these populations.

The precise nature of the causal relationships between HIV-related stigma and HIV testing, and rectal microbicide acceptability, respectively, remain unclear, though psychological processes associated with stigma may pose barriers to testing. Golub et al.<sup>8</sup> discussed that fear of receiving an HIV-positive

test result—and facing social and health consequences—may partly account for the relationship between anticipated HIV-related stigma and lower HIV testing. Earnshaw et al.<sup>49</sup> examined psychological processes connecting HIV-related stigma to lower testing rates among people who inject drugs in the US, and found that HIV stereotypes led to reduced HIV risk perceptions, which mediated the association between stigma and lower testing.

This complex interplay between HIV-related stigma and fear may reflect similar processes that underlie the association between stigma and rectal microbicide acceptability. As evidenced in qualitative research,<sup>48</sup> MSM and TG believed that using a rectal microbicide would signify they were HIV-positive, and therefore considered ‘dirty’; and accessing rectal microbicides through the healthcare system was believed to exacerbate HIV-related stigma. The belief that people would consider them HIV-positive, and perceive them as ‘dirty’, is indicative of *felt-normative stigma*; the fear of being mistreated by others both in one’s community and healthcare suggests *vicarious stigma*. Our finding of felt-normative and vicarious stigma as predictors of lower rectal microbicide acceptability therefore contributes further evidence to the important role that HIV-related stigma may play in creating a barrier to uptake of new prevention technologies.

Other variables associated with HIV-related stigma included living in Pattaya versus Chiang Mai, identifying as gay, and having a history of forced sex. It is plausible that MSM who identify as gay would experience and be engaged in more dialogue, and therefore hear more stories about HIV-related stigma due to their symbolic association with HIV.<sup>22,23</sup> Participants living in Pattaya versus Chiang Mai experienced higher HIV-related stigma; more participants in Pattaya than Chiang Mai were employed at gay entertainment venues, had received payment for sex, and paid for sex, suggesting that HIV could be viewed as more of a personal and occupational risk; this, in turn, could raise fear of HIV and contribute to stigma. Pattaya, with its historical reputation as a sex trade hub, in part shaped by the US military presence,<sup>50,51</sup> may be encumbered with greater HIV-related stigma than other Thai cities. The perception that sex workers are responsible for HIV transmission continues to reproduce HIV-related stigma not only in Thailand, but in other contexts, such as India.<sup>52</sup>

We found associations between experiencing forced sex and HIV-related stigma; while we found no prior studies that explored this association, other investigations suggest that

sexual violence survivors experience community stigma and social exclusion for being raped, and often have psychosocial adjustment challenges.<sup>53</sup> Studies with PLHIV highlight bidirectional associations between traumatic events and HIV-related stigma;<sup>54–56</sup> sexual and gender minorities are often stigmatized, and targets of sexual violence, and experiencing sexual violence can, in turn, result in more stigma and trauma. There is a need to better understand the causal mechanisms between HIV-related stigma and sexual violence among MSM and TG in Thailand and other contexts. Sexual violence merits concerted intervention efforts in its own right and directly increases risk for HIV infection.

There are several limitations to this study. First, the cross-sectional and non-randomized design limit generalizability of the results; however we recruited a diverse community sample of “hard-to-reach” populations, marginalized groups at high risk for HIV infection. Second, we only measured HIV-related stigma and did not assess its intersection with stigma targeting sexual minorities (e.g., sexual stigma) or TG (e.g., transphobia); further research should explore the intersections of HIV-related stigma with other forms of marginalization. Third, we did not assess psychological processes (e.g., self-esteem, internalized stigma) that could have played a role in condom usage, HIV testing, or rectal microbicide acceptability, a further direction for future research. Fourth, we did not explore HIV-related stigma and pre-exposure prophylaxis (PrEP) acceptability; promising results from a trial of daily oral tenofovir demonstrated reduced risk for HIV acquisition among people who inject drugs in Thailand.<sup>57</sup> Exploring PrEP acceptability among MSM and TG in Thailand is an important area for investigation. Finally, we did not explore the nature of forced sex, for example, if it was childhood sexual abuse, intimate partner violence, homophobic/transphobic rape, or rape associated with sex work. This could inform understanding of experiences of sexual violence and HIV risk, and help to explain the association between forced sex and vicarious HIV-related stigma.

This survey of community-recruited young MSM and TG in Thailand contributes to the growing evidence base that suggests HIV-related stigma harms the health not only of PLHIV but others—particularly MSM and TG—who are associated with HIV.<sup>8,22,26</sup> Our findings also underscore the need for understanding the role of stigma as a barrier to the acceptability of new prevention technologies, such as rectal microbicides. Overall, there is a need to move towards more complex and nuanced examinations of the impacts, as well as sources and processes, of felt-normative stigma and vicarious stigma, rather than solely focusing on enacted stigma manifested in overt acts of discrimination. A deeper understanding of the multiple dimensions of HIV-related stigma may provide important evidence to support effective social and structural interventions that mitigate the sustained HIV epidemics among MSM and TG in Thailand and globally.

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