



Sociodemographic characteristics and HIV risk behaviors of native-born and displaced Syrian men and transgender women who have sex with men in Lebanon

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Abstract

HIV rates among men and transgender women who have sex with men (MTWSM) in Lebanon are consistent with a concentrated epidemic. Geopolitical and social circumstances leave these communities vulnerable to HIV spread. To document this risk encountered by Lebanese native and displaced Syrian MTWSM, participants, recruited by respondent driven sampling beginning with Syrian seeds, completed a survey with questions covering sociodemographic, behavioral, medical, and stigma, followed by opt-out HIV testing. Analyses included descriptive statistics and linear regression to differentiate between native Lebanese and Syrians who migrated after the onset of the civil war to identify correlations among sociodemographic factors, stigma, and risk behavior as a function of country of birth. Experienced and internalized stigmas were higher in the Syrian born MTWSM and correlated with elements of HIV risk. Combatting the intersectional stigmas of Syrian MTWSM in Lebanon would be most beneficial in mitigating HIV risk for these individuals.

Keywords MSM · HIV risk behaviors · Stigma · HIV testing · Lebanon

Resumen

Las tasas de VIH entre hombres y mujeres transgénero que tienen sexo con hombres (HMTSH) en el Líbano son consistentes con una epidemia concentrada. Las circunstancias geopolíticas y sociales dejan a estas comunidades vulnerables a la propagación del VIH. Para documentar este riesgo al que se enfrentan los HMTSH nativos libaneses y HMTSH sirios desplazados, los participantes, reclutados mediante un muestreo impulsado por los encuestados que comenzó con semillas sirias, completaron una encuesta con preguntas que cubrían aspectos sociodemográficos, conductuales, médicos y de estigma, seguidas de una prueba de VIH de exclusión voluntaria. Los análisis incluyeron estadísticas descriptivas y regresión lineal para diferenciar entre libaneses nativos y sirios que emigraron después del inicio de la guerra civil para identificar correlaciones entre factores sociodemográficos, estigma y comportamiento de riesgo como función del país de nacimiento. Los estigmas experimentados e internalizados fueron más altos en los HMTSH nacidos en Siria y se correlacionaron con elementos de riesgo de VIH. Combatir los estigmas interseccionales de los HMTSH sirios en el Líbano sería lo más beneficioso para mitigar el riesgo de VIH para estos individuos.

Palabras clave HSH · comportamientos de riesgo del VIH · estigma · prueba de VIH · Líbano”

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Introduction

The Syrian Civil War, which began in 2011, has displaced an estimated 13 million of its citizens. Half have left the country, with 1.5 million leaving to live in Lebanon [1]. This exodus has inflated by a third the estimated 4.5 million inhabitants of Lebanon at the start of the Syrian Civil War, placing large burdens on the economy and on health systems. Both systems give rights and privileges to Lebanese citizens that are denied to the displaced Syrians, placing them at risk for poverty and illness. The problems are heightened by the trauma of displacement and then by stigma experienced and internalized by the displaced Syrians [2,3].

An additional set of stigmas directed against cisgender men and transgender women who have sex with men (MTWSM) has been associated with increased levels of HIV risk behaviors in studies in many parts of the world [4–6]. The stigmas are experienced by both Syrians and Lebanese MTWSM, as has been previously reported [7,8]. The stigma is reinforced by high levels of childhood and adolescent violence directed against MTWSM in the region [9]. We have previously reported that such violence continues into adulthood and is higher among displaced Syrian than among Lebanese MTWSM [10]. It remains to be determined if experienced or internalized stigma among MTWSM is associated with increased HIV risk in Lebanon and if the stigmas derived from being a displaced Syrian in Lebanon exacerbate the risk.

HIV prevalence in Lebanon and Syria has remained low in the general population with prevalence of less than 0.1% among adults [11,12]. However, bio-behavioral surveys of MTWSM conducted in Lebanon have found HIV prevalence as high as 12% [8,13]. This proportion may be artificially inflated if sampling is non-random, as is likely the case for both these studies since participants were recruited by venue-based sampling or respondent-driven starting with individuals attending NGOs serving the LGBTQI community frequented by HIV-positive MSM.

In our previous work recruiting MSM in Lebanon, one quarter of the men were Syrian-born and had moved to Lebanon since the start of the civil war [8]. Although HIV rates were lower in the Syrian-born MSM, some of the HIV risk behaviors were elevated. A follow-up biobehavioral study was developed to assess whether this elevated risk would translate into increasing HIV prevalence. The Zyara (“Visit” in Arabic) study employed a recruitment strategy designed to recruit approximately equal numbers of Lebanese-born and displaced Syrian-born individual who identified as males or transgender women who reported sex with men (MTWSM). Here we report on HIV prevalence, risk practices, and prevention opportunities in the recruited sample. We focus our attention on two questions: “How do native

born and displaced Syrian MTWSM in Lebanon differ in demographic background, HIV prevalence, and HIV risk behavior?” and “How do stigma and an individual’s socio-economic situation affect HIV prevention and risk behaviors among native born and displaced Syrian MTWSM in Lebanon?”

Methods

Study recruitment began in January 2019 after the study protocol and all data collection instruments had been approved by IRBs at the American University of Beirut and Yale University. Recruitment continued until December 2019 using a variant of respondent-driven sampling [14,15]. Eligibility criteria for participation included being male at birth, being at least 18 years of age, and reporting either anal or oral sex with a man within the last six months. All seeds were recruited from one of five NGOs serving the LGBTQI community in the greater Beirut area and were Syrian-born and displaced to Lebanon as a result of the civil war. This choice was made based on assessment of recruitment patterns in a prior study that found preferential recruitment by nationality [16]. All subsequently recruited participants needed to possess a recruitment coupon obtained from a prior participant.

All recruited participants who provided informed consent were asked to complete a survey adapted from an international integrated biobehavioral standard [8,17]. Interviews were conducted either at an NGO or an LGBTQI-friendly café or bar in a setting allowing for confidentiality to be maintained. The survey contained sections on socio-demographics, sexual history and current sexual activity and HIV risk behaviors, alcohol and drug use, medical history including HIV testing, treatment, and status disclosure, access to and use of social services, and discrimination and abuse. Sets of six questions on internalized and experienced stigma were adopted from instruments validated in other parts of the world and used in our studies in eastern Europe [18–20]. Separate sets focused on stigmas regarding respondents’ sexuality and sexual behavior, HIV status, and Syrian nationality. Syrian-born participants were asked additional questions about their experiences of displacement within Syria and relocation to Lebanon. Three psychological assessments were included in the survey but are not analyzed in the present study: the CES-D depression index, and the Beck’s Anxiety Index, and the civilian form of the post-traumatic stress disorder (PTSD) checklist [21–24].

Opt-out HIV testing was provided by the five participating NGOs. Separate informed consent was obtained from participants to add test results to the study database.

The survey was loaded onto password-protected, encrypted tablets using KoBoToolbox (Harvard

Humanitarian Institute, Cambridge, MA), an open source data collection program. Survey responses from participants were entered by interviewers and uploaded weekly to a secure database housed at the AUB, after which the interview data on the tablets were erased.

For statistical analysis, data from the KoBoToolbox dataset were downloaded as an Excel file and entered into R to run descriptive analyses. Data analysis was conducted separately for native-born MTWSM (Lebanese and Palestinian) and Syrian MTWSM who migrated from Syria to Lebanon after March 2011. Averages are reported for each group, along with regression coefficients summarizing the association between HIV risk behaviors (multiple concurrent partners, any condomless sex, group sex, exchange sex, and sex while intoxicated) and prevention strategies (prior HIV testing, PrEP interest, condom use) with stigma (MSM, Syrian) and indicators of material security (legal status, employment, income).

Results

Population demographics, stigma, and HIV risk

Table 1 summarizes the demographic characteristics of study participants and differences between study participants native to Lebanon ($N=275$) and participants born in Syria who moved to Lebanon after March 2011 ($N=274$). The samples of native Lebanese and displaced Syrian participants were similar in household size, gender, and likelihood of being in a committed romantic relationship. Displaced Syrian participants had lower levels of education and income and were less likely to be employed than native Lebanese participants. Only 36% of the Syrian participants had some form of legal status in Lebanon.

The sets of six to seven questions for experienced stigma and for internalized stigmas are reported on a zero to one scale (Table 2). For experienced stigma related to having sex with men, participants had an average score of 0.59, with participants displaced from Syria reporting higher levels of experienced stigma than participants from Lebanon (0.64 vs. 0.54, respectively, $t=7.18$, $p<0.01$). For internalized stigma related to having sex with men, participants reported an average score of 0.36, with participants displaced from Syria reporting higher levels of internalized stigma than participants from Lebanon (0.43 vs. 0.30, respectively, $t=6.02$, $p<0.01$). Participants from Syria also had scores for experienced and internalized stigmas related to their Syrian origin that averaged 0.59 and 0.34, respectively. For all measures of stigma, experienced stigma scores were 48–80% higher than comparable scores for internalized stigma.

Table 1 Demographics and Legal Status of Study Participants

	All participants N = 549	Lebanon Born N = 275	Displaced Syrian N = 274	Test statistic and p-value of difference
Average age	26.9	28.0	25.9	$t = -4.14$ $p < 0.01$
Average household size	3.9	4	3.8	$t = -1.07$ $p = 0.28$
Current residence over 1 year	284 (52%)	210 (77%)	74 (27%)	$\chi^2 = 134.04$ $p < 0.01$
Gender	406 (74%)	214 (78%)	192 (70%)	$\chi^2 = 0.05$ $p = 0.83$
Male	20 (4%)	10 (4%)	10 (4%)	
Female	35 (6%)	10 (4%)	15 (5%)	
Trans-female	16 (3%)	20 (7%)	7 (3%)	
Other	72 (13%)	9 (3%)	50 (18%)	
Missing		22 (8%)		
Committed relationship	179 (33%)	91 (33%)	88 (32%)	$\chi^2 = 0.02$ $p = 0.88$
Citizenship or legal status	374 (67%)	275 (100%)	99 (36%)	$\chi^2 = 254.89$ $p < 0.01$
Education	154 (29%)	59 (21%)	95 (35%)	$\chi^2 = 28.59$ $p < 0.01$
Primary or less	99 (17%)	46 (17%)	53 (19%)	
Secondary	135 (25%)	62 (23%)	73 (27%)	
Some college	161 (30%)	108 (39%)	53 (19%)	
College grad				
Employed	329 (60%)	195 (71%)	134 (49%)	$\chi^2 = 27.38$ $p < 0.01$
Monthly Income	273 (51%)	95 (35%)	178 (67%)	$\chi^2 = 106.78$ $p < 0.01$
Under \$500	156 (29%)	74 (28%)	82 (31%)	
\$500 – \$1000	71 (13%)	65 (24%)	6 (2%)	
\$1000 – \$2000	36 (7%)	35 (13%)	1 (0%)	
Over \$2000				

Both groups of participants experienced, on the basis of their sexuality, episodes in the past year of discrimination in five domains or in three domains of abuse (Table 2). Discrimination, reported as the mean number across reports in the five domains, was 55.8% higher for displaced Syrians compared to native Lebanese participants ($t=3.12$, $p<0.01$). Abuse, reported as the mean number of the three domains, was 43.3% higher for displaced Syrians compared to Lebanese native participants ($t=5.08$, $p<0.01$).

HIV prevalence was low for both Lebanese native and displaced Syrian MTWSM (Table 3). Only 21 (3.8% \pm 1.6%) of participants either tested positive at the time of the study, or reported being HIV positive, after excluding participants who self-identified as HIV positive, but tested negative at the time of the study.

Among HIV protective measures (Table 3), testing was fairly common. Most participants had taken an HIV test at some point in their life prior to the test offered through the study, but only half reported having been tested in the past year. Although a history of testing was more common among native-born than among Syrian-born participants (70% vs. 52%, $\chi^2 = 15.87$, $p < 0.01$), similar rates of testing

within the last year were observed for Lebanese native and Syrian-born participants. Five participants who had never before been tested for HIV chose not to take the test offered as part of the study. Most participants had never heard of PrEP, and only 21% of participants reporting familiarity with the fact that PrEP involves someone taking medication to prevent HIV acquisition. Only six participants, all born in Lebanon, had ever taken PrEP. Interest in PrEP was also low. After explaining how PrEP prevents HIV transmission, only 11% of participants said that they would be somewhat or very likely to use PrEP if it was made available to them. Interest was similar between participants born in Lebanon (13%) and those displaced from Syria (10%).

Risk factors related to sexual behavior are also reported in Table 3. Participants from Lebanon and Syria both reported a median of five male partners in the past year, but with a few participants reporting a far higher number of sexual partners, the mean was approximately 28 for each group. Most participants (74%) reported inconsistent condom use. Over the course of their three most recent sexual relationships, 31% of participants reported overlapping time periods for relationships. This was more frequent among participants from Lebanon than participants displaced from Syria (39% vs. 23%, respectively, $\chi^2=7.39$, $p<0.01$). Reports of being coerced or forced into not using a condom within the past 12 months were more common among participants displaced from Syria than among participants born in Lebanon (25% vs. 17%, respectively, $\chi^2=4.89$, $p<0.05$). Participation in group sex (18%) and sex exchange (38%) were reported with similar frequency for participants from Lebanon and those displaced from Syria.

At least one form of the quantifiable behavioral risk for contracting or transmitting HIV was reported by 510 individuals (91.3%) with similar proportions among the Lebanon-born and Syrian-born MTWSM. Data on the reported levels of each of the five individual HIV transmission risk factors appear in Table 3. 20% of MTWSM (N=110) reported only a single risk behavior, again with similar proportions for each group. Two or more forms of the quantifiable risk factors for contracting or transmitting HIV were reported by 391 individuals (71.2%) with no difference between the two groups.

Association between stigma and HIV protective factors

Next, we consider the correlation between stigmatization and factors influencing HIV risk. For these analyses, we report bivariate relationships and present models that incorporate socio-economic factors related to material security.

Table 2 Stigma, Discrimination, and Abuse Reported by Study Participants in the Past Year

	All participants N = 549	Lebanon Born N = 275	Displaced Syrian N = 274	Test statistic and p-value of difference
Average experienced MSM stigma (0 to 1)	0.59	0.54	0.64	t = 7.18 p < 0.01
Average internalized MSM stigma (0 to 1)	0.36	0.30	0.43	t = 6.02 p < 0.01
Average experienced Syrian stigma (0 to 1)	NA	NA	0.59	NA
Average internalized Syrian stigma (0 to 1)	NA	NA	0.34	NA
Average number domains of discrimination (0 to 5)	0.65	0.51	0.79	t = 3.12 p < 0.01
Refused health care	29 (5%)	22 (8%)	7 (3%)	$\chi^2=7.15$ p < 0.01
Refused employment	125 (23%)	44 (16%)	81 (30%)	$\chi^2=13.17$ p < 0.01
Refused religious service	43 (8%)	21 (8%)	22 (9%)	$\chi^2=0.01$ p = 0.93
Refused restaurant or bar service	35 (7%)	16 (6%)	19 (7%)	$\chi^2=0.14$ p = 0.71
Refused housing	116 (22%)	32 (12%)	84 (31%)	$\chi^2=27.65$ p < 0.01
Average number domains of abuse (0 to 3)	0.99	0.77	1.20	t = 5.08 p < 0.01
Verbal insults	307 (57%)	132 (49%)	175 (65%)	$\chi^2=12.73$ p < 0.01
Physical abuse	135 (25%)	45 (17%)	90 (33%)	$\chi^2=18.51$ p < 0.01
Sexual assault	89 (17%)	29 (11%)	60 (22%)	$\chi^2=11.60$ p < 0.01

Note: Percentages are show in parentheses for categorical variables. p-values are calculated using t-tests for continuous variables, and chi squared tests for categorical variables

Analyses were conducted separately for participants born in Lebanon and displaced from Syria.

Table 4 presents the results for factors associated with reporting a prior HIV test. Among the native Lebanon, there was a negative association with internalized MTWSM-related stigma, with almost no difference between the bivariate analysis and the adjusted regression model. For displaced Syrians, five factors – internalized and experienced MTWSM stigma, internalized Syrian-related stigma, employment, and higher income -- were all negatively associated with HIV testing in the bivariate analysis, but only internalized MTWSM stigma and higher income remained negatively associated with HIV testing in the multivariate regression model.

Table 5 presents the results for factors associated with reporting a willingness to take PrEP if it were made available. Again, for native Lebanese participants, internalized

MSM-related stigma was negatively associated with such willingness in the bivariate analysis. One factor, income over \$500 per month, was positively associated in the bivariate analysis. Both remained significantly associated in the adjusted regression model, but an additional factor, employment, became negatively associated with a willingness to take PrEP. For the displaced Syrian participants, both MSM-related and Syrian-related internalized stigma and Syrian-related experienced stigma were negatively associated with a willingness to take PrEP. In the adjusted model, only MSM-related stigma remained negatively associated.

Association between stigma and HIV risk behaviors

We explored the associations of five high-risk sexual behaviors with stigma, discrimination, abuse, and socio-economic factors for patterns consistent across the different risks. The five high-risk sexual behaviors were concurrent sexual partnerships, condomless sex with any male partner, group sex, exchange sex, and sex under the influence of alcohol. These data are presented in supplemental tables S1–S5. Table 6 presents a summary that reports, for each of the five behaviors associated with increase risk, the factors that remained significant in the adjusted regression model. For the Lebanese-born participants, there was no consistent pattern of associated sociodemographic factors across behaviors and none of the stigma variables were associated with any behavior. For the Syrian-born participants, there were behaviors significantly associated with stigma. At the level of bivariate analysis, all four stigma variables – internalized and experience based on sex with other men and Syrian nationality – were associated with only one risk behavior, engagement in group sex activities (Supplemental Table S3). Three of the four remained significant in adjusted regression model. Internalized stigma based on Syrian nationality was associated with exchange sex and sex while intoxicated whereas MSM-related experienced stigma was associated with condomless sex (data in supplemental tables).

Discussion

The major findings of this study of 549 cisgender men and transgender women who have sex with men in Lebanon were ongoing low HIV prevalence among the participants (point prevalence of 3.8%) despite substantial levels of sexual risk taking and virtually no use of PrEP. This is consistent with some other reports, but at odds with the prevalence of 12.3% measured in our previous study [8,25–27]. The difference in the two estimates from our studies is probably

Table 3 HIV Prevalence, Prevention Measures, and Risk Behaviors Reported by Study Participants

	All N = 549	Lebanon Born N = 275	Dis- placed Syrian N = 274	Test sta- tistic and p-value of difference
Self-reported HIV+	21 (6%)	14 (7%)	7 (4%)	$\chi^2=0.76$ p=0.38
HIV + test study result	7 (2%)	4 (2%)	3 (1%)	$\chi^2=0$ p=1
HIV + test study or self-reported	21 (4%)	16 (6%)	5 (2%)	$\chi^2=4.84$ p=0.03
Ever tested prior to study	327 (61%)	185 (70%)	142 (52%)	$\chi^2=15.87$ p<0.01
Received HIV test in prior year	244 (46%)	125 (48%)	119 (45%)	$\chi^2=0.41$ p=0.52
Never tested (including study)	5 (1%)	1 (0%)	4 (1%)	$\chi^2=0.81$ p=0.37
Taken PrEP	6 (4%)	6 (7%)	0 (0%)	$\chi^2=3.96$ p=0.05
Likely to take PrEP if available	62 (11%)	35 (13%)	27 (10%)	$\chi^2=0.86$ p=0.35
Heard of PrEP	147 (28%)	81 (32%)	66 (25%)	$\chi^2=2.96$ p=0.09
Somewhat familiar with PrEP	110 (21%)	63 (25%)	47 (18%)	$\chi^2=3.55$ p=0.06
Mean (median) male partners (12 months)	28 (5)	28 (5)	27 (5)	t = -0.20 p=0.84
Sex with male partner without a condom ^a	383 (74%)	191 (72%)	192 (75%)	$\chi^2=0.34$ p=0.56
Average (median) female partners ^a	2 (1)	1 (0)	2 (2)	t = 3.11 p<0.01
Sex with female partner without a condom ^a	62 (67%)	21 (52%)	41 (79%)	$\chi^2=5.99$ p=0.01
Forced or coerced into not using condom ^a	111 (21%)	44 (17%)	67 (25%)	$\chi^2=4.89$ p=0.03
Overlapping sexual relationships ^b	87 (31%)	55 (39%)	32 (23%)	$\chi^2=7.39$ p<0.01
Group sex ^a	97 (18%)	44 (16%)	53 (20%)	$\chi^2=0.67$ p=0.42
Sex exchange ^a	68 (38%)	27 (36%)	41 (39%)	$\chi^2=0.10$ p=0.76
Sex while Intoxicated ^c	241 (44%)	115 (42%)	126 (46%)	$\chi^2=0.81$ p=0.37
Perceived HIV Risk	155	84 (33%)	71 (26%)	$\chi^2=1.56$
No chance	(30%)	96 (38%)	106	p=0.46
Low chance	202	46 (17%)	(39%)	
Moderate to high chance	(39%)		45 (16%)	
	91 (17%)			

Notes: Medians are show in parentheses for continuous variables. Percentages are show in parentheses. The p-values are calculated using t-tests for continuous variables, and chi squared tests for categorical variables

a) During the past 12 months

b) During the past 3 months

c) With any of past 3 partners

a result of the choice of seeds in our RDS. In the first study, seeds were MTWSM receiving services from HIV

Table 4 Association of Prior Testing with Stigma, Discrimination, Abuse, and Socio-economic Factors. Values are the model coefficients with 95% confidence intervals constructed using robust standard errors in parentheses

	Lebanon Born Unadjusted OLS coefficients	Lebanon Born Adjusted regression model	Displaced Syrian Unadjusted OLS coefficients	Displaced Syrian Adjusted regression model
Internalized MSM Stigma	-0.53 [-0.78, -0.28]	-0.52 [-0.77, -0.26]	-0.60 [-0.82, -0.38]	-0.42 [-0.71, -0.12]
Experienced MSM Stigma	-0.1 [-0.49, 0.29]	0.04 [-0.37, 0.45]	-0.58 [-0.94, -0.22]	-0.31 [-0.74, 0.12]
Internalized Syrian Stigma			-0.29 [-0.49, -0.09]	-0.02 [-0.30, 0.25]
Experienced Syrian Stigma			-0.28 [-0.57, 0.01]	-0.01 [-0.40, 0.38]
Legal Status			-0.1 [-0.23, 0.02]	-0.08 [-0.21, 0.05]
Employment	-0.05 [-0.17, 0.07]	-0.05 [-0.25, 0.15]	-0.17 [-0.28, -0.05]	-0.07 [-0.22, 0.08]
Income over US\$500	-0.06 [-0.17, 0.06]	-0.04 [-0.22, 0.15]	-0.3 [-0.42, -0.17]	-0.18 [-0.33, -0.02]

Table 5 Association of the Likelihood of PrEP Engagement with Stigma, Discrimination, Abuse, and Socioeconomic Factors. Values are the model coefficients with 95% confidence intervals constructed using robust standard errors in parentheses

	Lebanon Born Unadjusted OLS coefficients	Lebanon Born Adjusted regression model	Displaced Syrian Unadjusted OLS coefficients	Displaced Syrian Adjusted regression model
Internalized MSM Stigma	-0.26 [-0.45, -0.08]	-0.30 [-0.49, -0.11]	-0.25 [-0.38, -0.13]	-0.20 [-0.37, -0.04]
Experienced MSM Stigma	0.09 [-0.19, 0.37]	0.25 [-0.04, 0.55]	-0.12 [-0.38, 0.13]	-0.06 [-0.36, 0.23]
Internalized Syrian Stigma			-0.16 [-0.27, -0.06]	-0.04 [-0.18, 0.11]
Experienced Syrian Stigma			-0.14 [-0.31, -0.02]	-0.05 [-0.26, 0.17]
Legal Status			0 [-0.07, 0.08]	0 [-0.09, 0.09]
Employment	0.02 [-0.07, 0.1]	-0.14 [-0.26, -0.03]	0 [-0.07, 0.07]	-0.02 [-0.11, 0.07]
Income over US\$500	0.08 [0.01, 0.16]	0.19 [0.1, 0.29]	-0.04 [-0.11, 0.03]	-0.02 [-0.1, 0.07]

prevention and support organizations; in the second, seeds were displaced Syrian MTWSM whose HIV prevalence appears lower than their Lebanon-born counterparts [8,26]. The discrepancy between our studies is, however, consistent with our long-held belief that samples accrued by RDS frequently fail to overcome the biases introduced by initial seed selection [28,29]. On the other hand, the recruitment pattern in this study was successfully informed by that of the prior study. We hypothesized that by starting with only Syrian-born seeds and taking into account that earlier pattern, we would end up with similar numbers of Syrian-born and Lebanon-born participants. In the final sample, the difference was one participant.

Analysis of the survey data highlighted particular features of HIV risk. Risk behaviors were spread across both Lebanon-born and Syrian-born men, with no pattern evident. Only one risk factor was significantly higher among the Syria-born (coercive sex) and one behavior significantly higher among the Lebanon-born (overlapping sexual partnerships). The association of stigma with behavioral risks was observed only for the displaced Syrians as a group, and

MSM-related stigmas did not predict any of the risk factors among the Lebanon-born MTWSM. Some HIV risk behaviors among the displaced Syrian MTWSM were associated with the stigmatization of both sexual preference and Syrian identity. In summary, HIV prevalence was low across both groups, but the low rate of condom usage presents a key vulnerability.

Alternatively, HIV prevention efforts could focus on the medicalized approach using PrEP. Several barriers complicate this effort. First, few participants in this study had knowledge of the potential for PrEP to prevent HIV transmission and even after it was described by Zyara staff, only a small proportion of participants endorsed its use. Campaigns to more broadly introduce PrEP would need to overcome current low levels of interest. The second barrier, only indirectly measured in this study, is financial. While medications to treat HIV are readily available to and made affordable for HIV-positive individuals regardless of nationality, the medications for PrEP are not currently subsidized. The modest incomes of most Zyara participants limit PrEP accessibility. The current economic crisis in Lebanon,

Table 6 Associations of Sexual Risk Behaviors with Stigma, Discrimination, Abuse, and Socioeconomic Factors. All listed factors were significant at $p < 0.05$ in the multivariate regression models. Values in parentheses are the model coefficients

	Concurrent Partners	Condomless Sex	Group Sex	Exchange Sex	Sex While Intoxicated
Lebanon Born	Discrimination (0.11) Employment (0.32)	None	Years at Residence (0.17)	Past Year Abuse (-0.13)	Years at Residence (0.17)
Displaced Syrians	None	MSM Exp. Stigma (0.75)	MSM Exp. Stigma (0.42)	Syrian Int. Stigma (0.54)	Syrian Int. Stigma (0.34) Income > US\$500 (0.27)
			MSM Int. Stigma (0.29)	Syrian Int. Stigma (0.28)	Employment (-0.12)

which has devalued the Lebanese pound by at least 80% [30], makes access far less possible.

There is ample evidence that stigma directed at, experienced by, and internalized by MSM contributes to HIV risk and the heightened HIV prevalence in MSM populations in under-resourced settings such as Lebanon [4,31]. Therefore, we were surprised that the moderately high levels of stigma seen among native Lebanese MTWMS (0.54 for experienced stigma and 0.3 for internalized stigma on scales of 0–1) did not predict any of the HIV risk behaviors. For the Syria-born men, on the other hand, some forms of stigma, both MSM-directed and Syrian-directed, were associated with four of the five risk behaviors covered in the survey. Thus, efforts to minimize the risk of HIV transmission in the displaced population would appear to benefit from destigmatization of sexual behavior and forced migration.

This study is subject to several limitations. Although we document the experiences of a large group of males who have sex with men in Lebanon, the sample may not be representative of all people in this group with vulnerabilities related to HIV transmission. Nor can the findings be generalized to similar groups in other countries where local social, political, and cultural contexts may prove more important than individual factors we analyze in this study. We nonetheless believe the findings we present can guide other researchers in studying populations of interest to them and will prove useful in designing and implementing effective

interventions to reduce the risk of HIV transmission both in Lebanon and in similar circumstances elsewhere. Another limitation is the selection of measures for experienced and internalized stigma. We chose to use instruments validated in other settings, which we used either in their original English or translated into Arabic. Although validated in other settings and used by us previously after translation into Russian, their psychometric properties were not validated for this particular study population and application. This is less of a problem for the MSM-related measures than for the Syrian-related measures since the former have been validated and reliably used in multiple international settings and after translation into different languages [18–20].

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1007/s10461-022-03726-1>.

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Authors' contributions LO took the lead in conducting the statistical analyses and in drafting parts of the manuscript.

FWC was involved with the design of the study and assisted LO with the statistical analysis.

KK was involved with the design of the study and the contents of the questionnaire, participated in training the field staff in participant recruitment, data collection, and human subjects protections.

DK supervised the field staff, served as the liaison to the local NGOs where many of the interviews were conducted, and was responsible for maintaining and transferring the database.

FMF was involved with the design of the study, the contents of the questionnaire, and led the created of the data collection system.

DWS was involved with the design of the study and the contents of the questionnaire, participated in training the field staff in participant recruitment and data collection.

RH took the lead in designing the study and the contents of the questionnaire, participated in training the field staff in participant recruitment and data collection, and drafted significant sections of the manuscript.

All authors reviewed the drafts of the manuscript, supplied comments and edits, and approved the final manuscript prior to submission.

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The study was approved by Institutional Review Boards at Yale University and the American University of Beirut. Written consent was obtained.

Full dataset is available upon request.

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