

## Consistent Condom Use Among Men Who Have Sex With Men in Lomé and Kara, Togo

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### Abstract

High transmission probability of HIV during condomless anal sex puts men who have sex with men (MSM), transgender, and nonbinary individuals at increased risk of infection. This analysis aims to examine the socioeconomic, biological, and behavioral factors that are associated with consistent condom use (CCU) during insertive/receptive anal sex among MSM in the last month in the cities of Lomé and Kara, Togo. A total of 683 MSM  $\geq 18$  years of age were surveyed using respondent-driven sampling (RDS) for a cross-sectional survey in Lomé ( $n=354$ ; 51.8%) and Kara ( $n=329$ ; 48.2%). Participants completed a structured questionnaire and were tested for HIV and syphilis. Statistical analyses included RDS-weighted proportions, bootstrapped confidence intervals (CIs), and logistic regression models. When compared with Lomé, MSM in Kara had lower odds of CCU [adjusted odds ratio (aOR)=0.29, 95% CI=0.19–0.44]. Other factors associated with lower CCU were having an income of 2,000 Communauté Financière Africaine (CFA)–12,000 CFA (aOR=0.53, 95% CI=0.36–0.77) or above 12,000 CFA (aOR=0.34, 95% CI=0.20–0.57), transgender women (aOR=0.47, 95% CI=0.25–0.92), and intersex gender (aOR=0.42, 95% CI=0.24–0.73), and ever being forced to have sex (aOR=0.42, 95% CI=0.21–0.82). Factors associated with CCU were identified in this study including older age (aOR=1.49, 95% CI=1.04–2.14) and having easy access to condoms (aOR=2.70, 95% CI=1.23–5.94) and very easy access to condoms (aOR=2.73, 95% CI=1.20–6.16). Reported condom use in this study was low, and several factors associated with CCU were identified including older age and access to condoms. This study highlights multiple barriers to preventive services experienced by MSM in Togo and therefore leveraging strategies to address these barriers may improve prevention of HIV and syphilis.

**Keywords:** condoms, Togo, men who have sex with men, MSM, HIV, behavior

### Introduction

THERE IS AN HIV PANDEMIC among men who have sex with men (MSM) represented by a consistently higher burden of HIV compared with other male adults of reproductive age.<sup>1–3</sup> This disproportionate burden is observed across high, middle, and lower income settings.<sup>1–3</sup> Even across concentrated and generalized HIV epidemics in West African countries, ~2 in 10 MSM in Burkina Faso, 1 in 10 MSM in The Gambia, and 1 in 4 MSM in Benin and Senegal are living with HIV.<sup>4–8</sup> In the more generalized HIV epidemics in the same region, where HIV consistently exceeds 1% among pregnant women,<sup>9</sup> the relative increase in the burden of HIV

among MSM compared with other populations is more pronounced, such is the case of Cote d'Ivoire, which has reported up to 16 times higher HIV prevalence among MSM compared with the broader population.<sup>2,10–14</sup>

MSM have been defined as MSM, regardless of whether or not they also have sex with woman or have a personal or social gay or bisexual identity.<sup>15</sup> Being cisgender refers to a person who by nature or choice conforms to gender/sex assigned at birth-based expectations of society.<sup>16</sup> In contrast, those whose psychological gender differs from the social expectations for the physical sex they were assigned at birth are defined as transgender.<sup>16</sup> MSM are at increased biological risk for HIV infection partly because of the transmission

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efficiency of the virus; specifically, the high transmission probability during condomless anal intercourse (CAI) with a serodiscordant and viremic partner.<sup>17</sup> Consistent condom use (CCU) is associated with lower HIV and sexually transmitted infection (STI) risks and diagnoses among MSM.<sup>18–20</sup> Despite the risks associated with CAI with serodiscordant or HIV-status unknown partners, reported condom use during the most recent anal intercourse remains low among MSM across low and middle-income countries.<sup>21</sup> In West Africa, the percentage of men reporting condom use the last time they had anal sex with a male partner had a high variability, from 19.5% in Liberia to 91.5% reported in Benin.<sup>22</sup>

Social and structural determinants, such as condom negotiation, access to water-based lubricants, social cohesion, stigma, and cost of condoms have been documented as influencing condom use among MSM across sub-Saharan Africa.<sup>23–26</sup> Condom use may vary for individuals, as different partners may present diverse challenges in successful condom use based on condom acceptance and the frequency of use. In Swaziland, condom negotiation was reported to be difficult for individuals both with partners who did not want to use condoms and partners with whom they did not use condoms consistently.<sup>24</sup> Social cohesion is also an influential factor in successful condom use, as high levels of social cohesion increase odds of condom use among MSM in sub-Saharan Africa.<sup>24</sup> Separately, perceived, anticipated, and enacted health care-related stigmas attributable to being MSM, including fear of seeking, avoidance, and denial of health care services, and also mistreatment in the health care setting, were associated with increased CAI among MSM in Lesotho.<sup>26</sup> In settings where same-sex practices are criminalized, condom use has been shown to be negatively associated with fear of seeking health services and with discrimination because of same sex sexual behavior.<sup>24</sup> In addition, a recent systematic review suggested that the cost of condoms may be a structural barrier for condom use among MSM, as condoms provided at reduced or no cost increased condom utilization.<sup>23</sup> Finally, not knowing one's HIV-positive status and limited exposure to HIV prevention services were associated with lower CCU among MSM in Cameroon.<sup>25</sup>

Togo is a low-income country in West Africa with a population of 6.8 million people, 22% of whom live in the capital city of Lomé.<sup>27</sup> Togo has a generalized HIV epidemic with an estimated HIV prevalence of 2.3% (1.4%–4.1%) among adults aged 15–49 years, with most cases reported in urban settings.<sup>28</sup> In contrast, the prevalence of HIV among MSM in Togo has been estimated to be as high as 20%.<sup>4,29</sup> Same-sex practices in Togo are currently criminalized, with sentences of up to 3 years of imprisonment and up to 500,000 Communauté Financière Africaine (CFA) francs (800 USD approx.) as fine.<sup>30</sup> Identifying and understanding the characteristics of MSM who engage in CCU can support the development of interventions specifically addressing determinants of condom use. Thus, these analyses aim to examine the socioeconomic, biological, and behavioral factors that are associated with CCU among MSM in the cities of Lomé and Kara, Togo.

## Materials and Methods

### Study population

This was a cross-sectional study conducted between December 2012 and June 2013 in the cities of Lomé and Kara,

Togo. Lomé is the capital of Togo and Kara is a major city in the north of the country, with HIV prevalence estimates among MSM of 17% and 10%, respectively.<sup>14</sup> The study was implemented by the local nongovernmental organizations (NGO) Espoir Vie Togo (EVT) in collaboration with Arc-en-Ciel and Force en Action pour la Mieux être de la Mère et de l'Enfant (FAMME). Eligibility was assessed by applying an eligibility screener included in the questionnaire that had five questions. Eligible participants reported to be assigned the male sex at birth,  $\geq 18$  years of age, reported having anal sex with a male partner in the past 12 months (MSM definition for the study), had lived in Togo for at least the past 3 months, have a valid study coupon, and provide informed consent for a questionnaire and for syphilis and HIV testing.

Respondent-driven sampling (RDS), a peer-recruitment sampling method designed to sample hard-to-reach populations was used to recruit MSM.<sup>31</sup> These methods have been well described, but briefly, initial community engagement was conducted with MSM groups to inform recruitment and study implementation. Four heterogeneous seeds were provided guidance about the study and its aim. A maximum of three RDS coupons to recruit other MSM in their network were given to each seed, thus, limiting the number of MSM that could be recruited by one participant and beginning a series of referral sampling chains. Characteristics of those who were offered but did not accept a coupon were tracked using a postrecruitment questionnaire. Participants were reimbursed based on the cost of return transport and the equivalent of a meal, free condoms, condom-compatible lubricants, and HIV information materials. Participants were further reimbursed for each eligible MSM they recruited to cover transportation and phone credit needed to make contact and distribute the coupon. During the study, no recruitment challenges were reported.

For secondary data analyses, the combined total sample size of 683 was sufficient to detect the reported prevalence (54.8%) of condom use at last anal sex. The minimum required sample size to detect the observed prevalence assuming design effect of 2, was 550 participants.<sup>32</sup>

The study received ethical approval from the Johns Hopkins Bloomberg School of Public Health Institutional Review Board and the National Ethics Committee of Togo.

### Data collection

After providing oral informed consent, participants completed an interviewer-administered questionnaire in a private room in one of the two languages spoken (French and Ewe). The questionnaire was designed to explore the multiple dimensions of HIV risk outlined in the Modified Socio-Ecological Model.<sup>33</sup> Participants were first asked socio-demographics questions followed by a series of questions related to human rights violations, including indicators focused on community, social, and health system-related stigma and discrimination; sexual behavior risk factors (Table 2), history of STI symptoms, and testing in the past 12 months, and for those who knew that they were living with HIV, antiretroviral therapy status. Survey questions were pilot tested with members of the MSM community in both languages to ensure they were understood and reflected the original intent of the English and French questionnaires developed by the study team.

### Laboratory testing

Trained technicians collected blood samples and administered all biological testing. HIV and syphilis testing were conducted according to Togolese National guidelines.<sup>34</sup> HIV testing included voluntary counseling, HIV screening, and confirmatory testing using rapid kits. The HIV testing algorithm was sequential, with the first test being Determine HIV 1/2 Ag/Ab Combo Rapid Test (Watham, MA). All positive tests were confirmed using First Response HIV test 1–20 cards (PMC Medical, Nani Damam, India). Western blot was used for discrepant results. Syphilis testing was conducted using treponema pallidum hemagglutination assay (TPHA) and Venereal Disease Research Laboratory (VDRL) test. Participants who tested positive for syphilis were provided with free treatment onsite, and those who tested positive for HIV were referred to a health care center that was known to be capable of addressing the particular needs of MSM.

### Statistical analyses

Indicators for each city were analyzed and reported as crude numbers and proportions, and RDS-adjusted (RDSa) estimates. Crude estimates represent the numbers and proportions reported from the study sample, and RDSa proportions are estimates of the broader MSM population of each city, with each variable's proportion based on the number of participants who answered each question. RDSa proportion estimates were calculated from these weights, which attempt to address homophily, the tendency of participants to recruit others like them, and for the variation in network size, two potential biases of RDS.<sup>31</sup> Volz-Heckathorn was used as an estimator to account for differences in social network sizes of participants. The variable "In the last month, how often were condoms used when you had anal sex with male partners" was utilized to generate individual weights for bivariate analysis. All seeds were included in the analysis. Network size was assessed by asking: "How many people do you know personally who are men who have sex with men?" RDSa proportions and 95% confidence intervals (CIs) were estimated using a bootstrap method with 1,000 repetitions for all variables explored.<sup>35</sup> Gender identity was determined based on a two-step gender assessment, asking first to the participant if their sex at birth was male, followed by the question about gender with the options of man, woman, or intersex. Transgender woman was defined as someone with a female gender identity and a male sex assigned at birth<sup>36</sup> and intersex was defined as someone assigned male sex at birth and identifying as intersex gender.

Logistic regression models were used to estimate the association between condom use during insertive/receptive anal sex in the last month with any male partner (CCU) (outcome) and variables selected based on our knowledge and published literature.<sup>29</sup> Multivariable logistic regression models were built to estimate the adjusted odds ratio (aOR). Pooled, crude estimates were used in the multivariable logistic regression model. For regression analysis, quantitative variables such as age (18–24/>24 years) and income [ $\leq$ 2,000 CFA (~4 USD), 2,001–12,000 CFA (~4–24 USD), >12,000 CFA (~24 USD)] were categorized. The final model included age income, gender (male, female, and intersex), and condom access (very difficult, somewhat difficult/easy, and very easy). It also included dichotomous variables with yes/no responses:

ever been forced to have sex, HIV status, health service access, and history of being blackmailed (Table 4). Pearson's chi square and Fisher's exact tests were used to explore associations of binary variables, and statistical significance was set at  $p < .05$ .<sup>37,38</sup> Akaike information criteria (AIC) and Bayesian information criteria (BIC) were used to identify more parsimonious models and to determine the final model.<sup>37,39</sup> Crude, instead of RDSa estimates were used for the final multivariable model given that the data for Kara and Lomé are not linked, and as a standard for the use of RDSa estimates in these models is not yet established.<sup>37</sup> Therefore, pooled estimates from both cities were provided without weights for consistency with the logistic regression models. All data were analyzed using Stata 12.1 (Stata/IC, College Station, TX).

### Results

In Lomé, a total of 439 coupons were distributed, and 354 (80%) were returned to the site. All the 354 MSM with coupons were eligible for the survey. Seed one generated 97 (27.4%) recruits, seed two 71 (20.6%) recruits, seed three 135 (38.1%) recruits, and seed four 51 (14.4%) recruits. Eight RDS recruitment waves were sufficient to enroll the *a priori* determined sample size. Homophily for HIV status was  $-0.49$  among HIV-negative MSM and  $0.2$  for those living with HIV. In Kara, 468 coupons were distributed, and 329 (70.3%) were returned to the site. All the participants who returned the coupon were eligible. Seed 1 generated 101 (30.7%) recruits, seed 2 generated 226 (68.7%) recruits, and seeds 3 and 4 generated 1 recruit each (0.3, respectively). Eight recruitment waves were needed to reach the predetermined sample size.

Table 1 presents the demographic and biological characteristics for each study site, and also pooled data from both cities. A total of 683 MSM were surveyed, 354 (51.8%) in the capital city of Lomé and 329 (48.2%) in the northern city of Kara. Overall, 62.8% (429/683) of the participants were between 18 and 24 years of age, with a median age of 23.9 years, almost 70% (476/683) had secondary school or more, and >90% (640/683) were single or had never been married. Median income was 5,000 CFA/week (~8.1 USD/week). Over 2/3 of the sample self-identified as gay/homosexual and >80% (556/683) self-identified as being male.

MSM living in Lomé were younger ( $p < .01$ ), had a higher income ( $p < .01$ ), were less frequently single/never married ( $p < .01$ ), less educated ( $p < .01$ ), and employment was more prevalent ( $p = .03$ ) compared with MSM surveyed in Kara. In total, 9.2% (62/683) of the participants were living with HIV, 17.5% (61/354) in Lomé and 0.3% (1/329) in Kara ( $p < .01$ ). No individuals were found to be coinfecting with syphilis and HIV. In addition, ever feeling discriminatory remarks from family members was reported by 17.3% (118/683), difficulties accessing health services by 12.3% (84/683), ever being verbally harassed by 18.6% (127/683), or blackmailed by 19.0% (129/683) of the participants (Table 1).

Table 2 presents the crude and RDSa estimates of condom use and sexual behavior, and crude estimates for the pooled data. Overall, more than half [54.8% (374/683)] of MSM sampled reported always using condoms for anal sex with a male partner during the last month. In addition, in the past 12 months, participants reported having, on average, insertive anal sex with 1.2 male partners and receptive anal sex with 1 male partner (Table 2).

TABLE 1. SOCIODEMOGRAPHIC AND BIOLOGICAL CHARACTERISTICS OF MEN WHO HAVE SEX WITH MEN LIVING IN LOMÉ (N=354) AND KARA (N=329)

Characteristic	Lomé		Kara		Pooled		p
	n (%)	RDS-weighted, % (95% CI)	n (%)	RDS-weighted, % (95% CI)	n (%)	RDS-weighted, % (95% CI)	
Total	354 (100)		329 (100)		683 (100)		
Age, median (IQR) (years)	23.2 (18–40)		24.7 (18–35)		23.9 (18–45)		<.01
18–24	253 (71.5)	79.1 (73.6–84.7)	176 (53.5)	55.5 (49.0–62.0)	429 (62.8)	55.5 (49.0–62.0)	<.01
25 and older	101 (28.5)	20.9 (15.4–26.5)	153 (46.5)	44.5 (38.0–51.1)	254 (37.2)	44.5 (38.0–51.1)	<.01
Gender							
Male	255 (72.0)	67.9 (59.8–76.1)	301 (91.5)	91.2 (87.4–95.1)	556 (81.4)	91.2 (87.4–95.1)	<.01
Transgender woman	43 (12.2)	18.1 (10.1–26.2)	6 (1.8)	1.3 (0.0–2.7)	49 (7.2)	1.3 (0.0–2.7)	
Intersex	56 (15.8)	13.9 (8.7–19.2)	22 (6.7)	7.4 (3.8–11.0)	78 (11.4)	7.4 (3.8–11.0)	<.01
Marital status to a woman							
Single/never married	322 (91.0)	91.7 (88.0–95.5)	318 (96.7)	95.4 (92.3–98.6)	640 (93.7)	95.4 (92.3–98.6)	<.01
Married	9 (2.5)	1.6 (0.3–3.0)	3 (0.9)	1.3 (–0.0 to 3.0)	12 (1.8)	1.3 (–0.0 to 3.0)	
Other	21 (5.9)	6.6 (3.0–10.3)	7 (2.1)	3.3 (0.1–5.9)	31 (4.8)	3.3 (0.1–5.9)	<.01
Education							
Secondary or less	141 (39.8)	40.6 (32.7–48.5)	66 (20.1)	19.9 (14.7–25.1)	207 (30.3)	19.9 (14.7–25.1)	<.01
More than secondary	213 (60.2)	59.4 (51.5–67.3)	263 (79.9)	80.1 (74.9–85.3)	476 (69.7)	80.1 (74.9–85.3)	
Employment/occupation							
Student	129 (36.4)	38.2 (30.4–46.1)	113 (34.4)	37.0 (30.2–43.4)	242 (35.4)	37.0 (30.2–43.4)	.03
Employed or self-employed	197 (55.7)	55.9 (47.8–63.9)	169 (51.4)	49.0 (42.3–55.6)	366 (53.6)	49.0 (42.3–55.6)	
Unemployed	28 (7.9)	5.9 (2.5–9.3)	47 (14.3)	14.0 (9.5–18.6)	75 (11.0)	14.0 (9.5–18.6)	
Weekly income (CFA <sup>a</sup> ), median (IQR) (years)							
≤2,000 CFA	93 (26.3)	5,250 (2,000–12,000)	135 (41.0)	3,000 (1,500–7,000)	5,000 (2,000–10,000)	3,000 (1,500–7,000)	<.01
2,001–12,000 CFA	171 (48.3)	23.0 (17.0–29.0)	158 (48.0)	41.3 (34.9–47.7)	228 (33.4)	41.3 (34.9–47.7)	<.01
More than 12,000 CFA	90 (25.4)	46.5 (38.8–54.2)	36 (10.9)	48.7 (42.2–55.2)	329 (48.2)	48.7 (42.2–55.2)	
Sexual orientation							
Gay/homosexual	216 (61.0)	61.2 (53.2–69.2)	226 (68.7)	62.6 (56.2–69.1)	442 (64.7)	62.6 (56.2–69.1)	<.01
Bisexual	124 (35.0)	34.4 (26.9–41.9)	103 (31.1)	37.4 (30.9–43.8)	227 (33.2)	37.4 (30.9–43.8)	
Heterosexual	3 (0.9)	1.13 (–0.01 to 0.0)	0 (0.0)	0 (0.0)	3 (0.4)	0 (0.0)	
Transgender	11 (3.1)	0.03 (0.0–0.01)	0 (0.0)	0 (0.0)	11 (1.6)	0 (0.0)	<.01
No. of MSM <sup>b</sup> who you personally know, median (IQR)	44.1 (2–500)		10.3 (2–65)		27.8 (27.8)		<.01
Ever tested for HIV	247 (69.8)	66.7 (59.4–74.1)	236 (71.7)	71.5 (22.6–34.5)	483 (70.7)	71.5 (22.6–34.5)	.57
Living with HIV	61 (17.5)	10.4 (6.6–14.3)	1 (0.3)	0.2 (–0.2 to 1.0)	62 (9.2)	0.2 (–0.2 to 1.0)	<.01
Tested positive for syphilis	5 (1.4)	1.3 (97.6–2.5)	2 (1.6)	0.9 (–0.3 to 2.2)	7 (1.0)	0.9 (–0.3 to 2.2)	.29

Significant *p*-values are noted in *bold*.

<sup>a</sup>CFA exchange rate December 2013; 1 USD=476.2 CFA.

CFA, Communauté Financière Africaine; IQR, interquartile range; MSM, men who have sex with men.

TABLE 2. CONDOM USE, SEXUAL BEHAVIOR, STIGMA, AND DISCRIMINATION CHARACTERISTICS OF MEN WHO HAVE SEX WITH MEN LIVING IN LOMÉ (N=354) AND KARA (N=329)

Characteristic	Lomé		Kara		Pooled	
	n/N (%)	RDS-weighted % (95% CI)	n/N (%)	RDS-weighted % (95% CI)	n/N (%)	p
Total	354/354 (100)		329/329 (100)		683/683 (100)	
Condom used always in the last month when having anal sex with another male partner	224/354 (63.3)	56.2 (47.9–64.5)	150/329 (45.6)	44.0 (37.7–50.3)	374/683 (54.8)	<.01
Was a condom used last time you had sex with...						
Male						
Main male partner	280/354 (79.1)	76.4 (69.6–83.2)	244/329 (74.2)	70.3 (64.1–76.6)	524/683 (76.7)	.13
Casual male partner	212/286 (74.1)	68.9 (59.3–78.6)	231/321 (72.0)	69.5 (63.1–76.0)	443/607 (73.0)	.55
Female (anal/vaginal)	217/246 (88.2)	87.2 (79.7–94.7)	213/247 (86.2)	83.7 (77.0–90.6)	430/493 (87.2)	.51
Main female partner	120/179 (67.0)	58.6 (38.7–78.5)	72/115 (62.6)	NA	192/294 (65.3)	<.01
Casual female partner	79/124 (63.7)	76.7 (58.4–95.1)	55/77 (71.4)	82.1 (68.7–95.4)	134/201 (66.7)	.26
	64/83 (80.1)	82.1 (60.7–100)	57/68 (83.8)	83.9 (69.3–98.6)	121/151 (80.1)	.30
Condom access when needed						<.01
Very difficult	7/354 (2.0)	1.6 (–0.0 to 3.1)	28/329 (8.5)	10.0 (5.9–14.1)	35/683 (5.1)	
Sometimes	101/354 (28.5)	26.7 (19.3–34.1)	224/329 (68.1)	66.5 (60.0–73.1)	325/683 (47.6)	
Very easy	242/354 (68.4)	70.6 (63.1–78.2)	71/329 (21.6)	22.3 (16.5–28.0)	313/683 (45.8)	
Refused to answer/do not know	4/354 (1.1)	1.1 (–0.0 to 2.3)	6/329 (1.8)	1.2 (0.0–2.4)	10/683 (1.5)	
In the last 12 months..., mean (IQR)						
No. of men you have had anal sex with	3.7 (1–25)	NA	4.0 (1–28)	NA	3.9 (1–40)	.59
No. of men you have had insertive anal sex with	1.1 (0–20)	NA	1.2 (0–8)	NA	1.2 (0–20)	.95
No. of men you have had receptive anal sex with	1.4 (0–30)	NA	0.9 (0–9)	NA	1.0 (0–20)	.42
No. of main partners you have had anal sex <sup>a</sup>	1.1 (0–5)	NA	1.5 (0–7)	NA	1.3 (0–9)	<.01
No. of casual partners you have had anal sex <sup>a</sup>	2.9 (0–19)	NA	2.3 (0–13)	NA	2.6 (0–25)	.17
No. of partners anal sex with last month <sup>a</sup>	3.4 (0–15)	NA	3.4 (0–18)	NA	3.4 (0–20)	.96
Ever felt that family members have made discriminatory remarks <sup>b</sup>	54/354 (15.3)	10.3 (6.2–14.4)	64/329 (19.5)	16.8 (12.0–21.7)	118/683 (17.3)	.15
Ever had difficulties accessing health services <sup>b</sup>	60/354 (17.0)	22.2 (15.4–29.0)	24/329 (7.3)	78.0 (3.5–12.5)	84/683 (12.3)	<.01
Ever avoided health services <sup>b</sup>	25/354 (7.1)	7.6 (3.7–11.6)	30/329 (9.1)	13.0 (7.8–18.3)	55/683 (8.1)	.32
Ever been verbally harassed <sup>b</sup>	67/354 (18.9)	12.9 (8.3–17.6)	60/329 (18.2)	15.1 (10.8–19.3)	127/683 (18.6)	.82
Ever been blackmailed <sup>b</sup>	57/354 (16.1)	11.2 (7.0–15.3)	72/329 (21.9)	19.3 (14.4–24.3)	129/683 (19.0)	.05
Ever been forced to have sex	25/354 (7.1)	6.7 (2.8–10.6)	27/329 (8.2)	8.8 (5.1–12.5)	52/683 (7.6)	.57

Significant *p*-values are noted in *bold*.

<sup>a</sup>Insertive or receptive anal sex.

<sup>b</sup>Because of having sex with other men.

MSM living in Kara had decreased odds of reporting CCU in the last month during anal sex with another male partner compared with those living in Lomé (OR=0.49, 95% CI=0.36–0.66). In addition, men who had an income between 2,001 and 12,000 CFA had lower odds of CCU with a male partner during the last month compared with the lowest income group (OR=0.58, 95% CI=0.41–0.82). When compared with men, MSM self-identifying their gender as intersex (OR=0.45, 95% CI=0.28–0.74), and those who had ever been forced to have sex (OR=0.31, 95% CI=0.17–0.57) had lower odds of CCU (Table 3).

After adjusting for potential confounders, MSM living in Kara (aOR=0.29, 95% CI=0.19–0.44), and men reporting a higher income [2,001 and 12,000 CFA aOR=0.53, 95% CI=0.36–0.77 and >12,000 CFA (~24 USD) aOR=0.34, 95% CI=0.20–0.57] had lower odds of CCU. In addition, transgender woman (aOR=0.47, 95% CI=0.25–0.92) and intersex (aOR=0.42, 95% CI=0.24–0.73) had lower odds of CCU. Lifetime history of forced sex was also associated with inconsistent condom use (aOR=0.42, 95% CI=0.21–0.82). Older MSM (aOR=1.49, 95% CI=1.04–2.14) and those with more access to condoms (aOR=2.73, 95% CI=1.20–6.16) had increased odds of CCU (Table 3).

## Discussion

These analyses described the socioeconomic, demographic, and biological determinants that influence the use of condoms for anal sex among MSM living in Togo. Our sample was composed mainly of young, medium income, educated, and cis-MSM. Approximately 1 of every 10 reported some form of stigma and/or discrimination. The average size of an individual's network was four times larger in Lomé than in Kara. Overall, MSM in Lomé reported using condom more consistently during anal sex with another male partner in the past month. CCU was highest in Lomé when having anal sex with a casual male partner. The prevalence of CCU by MSM in Togo was comparable with reports of limited condom use in other West African countries.<sup>22,25,40,41</sup> Finally, the adjusted models show that the odds of CCU were higher among older MSM, and among those who had easier access to condoms. Taken together, these results highlight the importance of understanding the social, cultural, educational, and behavioral characteristics that might be conditioning condom use among MSM in these settings, information that would be fundamental toward the development of effective interventions.

Although we report on the positive association between CCU and older age among MSM, regional results on this factor have been inconsistent. Studies from Nigeria, Swaziland, and Cameroon found no association between age and CAI among MSM.<sup>24,25,40</sup> In contrast, Lane *et al.* reported that MSM 25 years of age and older were more likely to have CAI.<sup>42</sup> CCU among older MSM could be explained by greater negotiating skills and/or increased access to counseling services that educate and promote the importance of CCU as a preventive tool against HIV infection. Results support the development of behavioral interventions that address the needs and risk behaviors of young MSM in Togo. In addition, studies from high-income countries have reported links between both having casual partners and alcohol/drug consumption with decreased CCU among young

MSM.<sup>43,44</sup> Based on our findings, young MSM should be further engaged in future HIV/STI services that provide access to condoms in Togo. It is important for programs to consider structural factors that can hamper program success, such as stigma, discrimination, culture, and government policy toward same sex behavior. Young MSM represent a population that is very difficult to reach and, when underage, are not likely to be characterized in behavioral and biological surveys. The latter should be taken into account to improve and/or develop better and more effective preventive services.

The role that personal income has on condom use among MSM in low-income countries is complex and understudied. This association can be mediated by other socioeconomic factors, such as education, marital status, and biological determinants, such as HIV status.<sup>45,46</sup> In Lomé and Kara, MSM with higher income were less likely to report CCU contrasting with findings reported among MSM in South Africa, China, and the United States, where no association has been observed between economic status and CCU.<sup>47–49</sup> In contrast with our results, Bakai *et al.* reported, using data from a cross-sectional survey that recruited MSM using snowball sampling, that MSM in Togo with a higher educational level and who had participated in HIV and STI prevention activities were more likely to have used a condom during the last anal intercourse.<sup>50</sup> In our study, there was no association between educational level and CCU among MSM living in Lomé and Kara during the last month. Independent of their educational level, the underlying reasons for condom use may be far more complex, starting with HIV serostatus knowledge, having access to condoms when needed, and stigma. In addition, network dynamics may also shape access to services and decision-making among MSM regardless of their educational level. Finally, limited research and contrasting results on the relationship between income and CCU among MSM make interpretation of these data challenging and highlight the need for additional research.<sup>25,41,51,52</sup>

The relationship between gender identity and sexual behavior is poorly understood in much of sub-Saharan Africa.<sup>53</sup> In this study, after adjusting for potential confounders, transgender women were shown to have decreased odds of CCU. Research in multiple high and middle-income countries suggest that transgender women are at higher risk of stigma, discrimination, marginalization, and HIV infection by differing levels of risk<sup>33,54,55</sup> even when compared with other key populations. However, data on CCU for transgender women are limited. Studies have highlighted that cis-MSM living with HIV are more likely to use condoms during anal sex, aiming to reduce the risk of transmitting the infection to others.<sup>56,57</sup> Transgender women have been reported to be less likely to use condoms and to have difficulties negotiating condom use with their primary sexual partner and other sexual partners.<sup>58,59</sup> The association found in Togo may be partially explained by the high access to HIV preventive services regardless of gender identity. These findings provide important information to guide prevention programs to specify messages based on an individuals' gender identity aiming to enhance CCU.

There is limited information on MSM's population size, social isolation, conservative attitudes, and restricted access to health services and how these factors guide behavior related to condom use.<sup>60–62</sup> In these analyses, a higher proportion of MSM in the urban city of Lomé, compared with

TABLE 3. FACTORS ASSOCIATED WITH ALWAYS USING A CONDOM DURING ANAL SEX IN THE LAST MONTH AMONG MEN WHO HAVE SEX WITH MEN LIVING IN LOMÉ AND KARA, TOGO

	<i>Always used condom anal sex last month, n (%)</i>	<i>OR (95% CI)</i>	<i>p</i>	<i>aOR (95% CI)</i>	<i>p</i>
City					
Lomé	224/354 (63.3)	1.0		1.0	
Kara	150/329 (45.6)	<b>0.49 (0.36–0.66)</b>	<b>&lt;.01</b>	<b>0.29 (0.19–0.44)</b>	<b>&lt;.01</b>
Age (years)					
18–24	234/429 (54.6)	1.0		1.0	
25 and older	140/254 (55.1)	1.02 (0.75–1.40)	.88	<b>1.49 (1.04–2.14)</b>	<b>.03</b>
Income (CFA)					
≤2,000	146/228 (64.0)	1.0		1.0	
2,001–12,000	167/329 (50.8)	<b>0.58 (0.41–0.82)</b>	<b>&lt;.01</b>	<b>0.53 (0.36–0.77)</b>	<b>&lt;.01</b>
More than 12,000	61/126 (48.4)	<b>0.53 (0.34–0.82)</b>	<b>&lt;.01</b>	<b>0.34 (0.20–0.57)</b>	<b>&lt;.01</b>
Gender					
Male	322/556 (57.9)	1.0		1.0	
Transgender woman	22/49 (44.9)	0.59 (0.33–1.07)	.80	<b>0.47 (0.25–0.92)</b>	<b>&lt;.03</b>
Intersex	30/78 (38.5)	<b>0.45 (0.28–0.74)</b>	<b>&lt;.01</b>	<b>0.42 (0.24–0.73)</b>	<b>&lt;.01</b>
Condom access					
Very difficult	11/35 (31.4)	1.0		1.0	
Somewhat difficult/easy	171/325 (52.6)	2.4 (1.15–5.11)	.02	<b>2.70 (1.23–5.94)</b>	<b>.01</b>
Very easy	1,192/313 (61.3)	<b>3.46 (1.64–7.32)</b>	<b>&lt;.01</b>	<b>2.73 (1.20–6.16)</b>	<b>.02</b>
Ever been forced to have sex	15/52 (28.9)	<b>0.31 (0.17–0.57)</b>	<b>&lt;.01</b>	<b>0.42 (0.21–0.82)</b>	<b>.01</b>
Living with HIV	31/62 (50)	0.81 (0.48–1.37)	.44	0.69 (0.38–1.26)	.23

Significant *p*-values are noted in *bold*.  
aOR, adjusted odds ratio; OR, odds ratio.

those living in Kara, reported CCU. This finding is inconsistent with results from a study conducted in Nigeria, reporting that MSM living in urban areas are less likely to report CCU.<sup>40</sup> Other factors explored in these analyses might explain the reported differences. First, sexual behaviors within MSM networks, social norms, and conventions might differ between Lomé and Kara, allowing MSM to have more access to preventive services or other types of social support such as friends or families.<sup>33,63</sup> Second, in Kara, behaviors associated with stigma and discrimination, such as difficulties accessing health services and being blackmailed were significantly higher compared with Lomé. These factors may partially explain the lower prevalence of CCU in the city of Kara. Finally, the number of NGOs providing services and their capacity to reach MSM can also impact CCU and linkage to the continuum of HIV care.<sup>12,64</sup> Collectively, our findings suggest that successful interventions might differ in relation to the characteristics of the city, and should be taken into consideration as they are developed, aiming to increase CCU among MSM. In addition, social capital was higher for MSM living in Kara. When information on social capital is available and reliable, it should be considered as programs are developed and implemented, given its inherent potential for understanding the population, resulting in improved access to HIV treatment, care, and preventive services. Finally, given the high variability that exists when reporting implementation studies, it would be useful for NGOs and other agencies, to report their findings using guidelines specifically developed to capture the diversity that is inherent to the context and the population of an intervention.<sup>65</sup>

Results should be viewed in light of a few limitations. The cross-sectional design of the study limits causal inference. The generalizability of these findings should be made with

caution given the significant variability regarding different behavioral, social, and biological factors that affect CCU that has been reported in different countries across sub-Saharan Africa.<sup>12,21,25,40,63</sup> In addition, social desirability bias could be present when self-reporting sensitive sexual behavior including condom use during anal sex. RDS was used to account for the limited access to the population; however, the results may not represent the individuals less connected to larger networks. In addition, a high number of participants reported being “intersex,” which was defined as people who did not have sexual/reproductive anatomy conforming to biological norms. The high prevalence could be a result of participants misunderstanding being intersex as falling within the transfeminine spectrum. Finally, adjusted analyses of RDS could not be conducted for the bivariate and multivariate analysis for Kara and Lomé combined given that the networks in the two cities were unrelated. Consequently, multivariate analysis was conducted with unadjusted pooled data and estimation may not be generalizable to the population.

CCU is an important and effective strategy to prevent HIV acquisition and transmission during anal sex among MSM.<sup>66,67</sup> Several factors associated with CCU were identified in this study including older age and access to condoms. Considering the low condom use reported, and multiple barriers to preventive services experienced by this population, alternative prevention strategies should be considered as options for individual MSM such as preexposure prophylaxis, lubricants, and condoms that aim to increase usage (e.g., flavors, size, shape, color, and lubricants). Structural level barriers such as decriminalization and protective legislation of same sex behavior in Togo should also be targeted to improve training of health care providers and law enforcement

agencies using stigma mitigating intervention and rights-based approach.<sup>68,69</sup> CCU remains essential toward HIV/STI prevention in this group. These data provide insight into determinants that can be leveraged to increase condom use among MSM in these settings.

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### Author Disclosure Statement

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