Male clients of male sex workers in West Africa: A neglected high risk population

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CL and BDK designed and led CohMSM. AAK, SABY, ChC and SA performed data collection under the supervision of CA, ETTD, EM and BDK. GM, MM, MB, and ClC managed the study implementation and field teams. AB trained and supported peer educators.

CHK designed and led the present study under supervision of LST and BS. CHK analysed the data and wrote the first draft of the manuscript. PJC, LST and BS contributed to data analysis, interpretation of the results and correction of the manuscript. All authors critically reviewed and approved the final manuscript.

Male clients of male sex workers in West Africa

Abstract

Research on male clients of male sex workers (MCMSW) has been neglected for a long time globally. We aimed to characterize MCMSW and to identify factors associated with their sexual practices using data from the prospective cohort study CohMSM conducted in Burkina Faso, Côte d'Ivoire, Mali and Togo. Our study focused on HIV-negative men who have sex with other men (MSM) recruited between 06/2015 and 01/2018 by a team of trained peer educators. Scheduled study visits at 6, 12 and 18 months included medical examinations, HIV screening, risk-reduction counselling and face-to-face interviews to collect information on their sociodemographic characteristics, sexual behaviours, and HIV risk-reduction strategies (HIV-RRS). Three stigmatization sub-scores were constructed (experienced, perceived and internalized). Mixed-effects logistic regression was used for data analysis. Of the 280 participants recruited at baseline, 238, 211 and 118, respectively, had a follow-up visit at 6, 12 and 18 months. Over a total of 847 visits, 47 transactional sex (TS) encounters were reported by 38 MCMSW (13.6%). Of the latter, only one participant reported systematic TS (2.6%), 18 (47.4 %) stopped reporting TS after baseline, and 6 (15.8%) reported TS after baseline. Thirteen participants (34.2 %) reported occasional TS. After adjusting for country of study and age, the following self-reported factors were associated with a greater likelihood of being MCMSW: protected anal sex, exclusively insertive anal sex with male sexual partners, avoidance of sex after consuming psychoactive products and experiencing stigmatization (all during the previous 6 months). The majority of MCMSW in this study employed HIV-RRS with male sexual partners, including engaging in protected anal sex, avoidance of sex when consuming psychoactive products, and practising exclusively insertive anal sex.

Keywords: Transactional sex, Male Clients, Male sex workers, HIV, West Africa.

Introduction

Men who have sex with other men (MSM), including male sex workers (MSW), are at a much greater risk of acquiring and transmitting sexually transmitted infections (STI), including human immunodeficiency virus (HIV). This is particularly true in Sub-Saharan Africa, where the prevalence of HIV infection is estimated at 36.3% in MSW compared with 17% in the general MSM population (1–7). Despite the vast literature on sex work, most studies to date have focused exclusively on female sex workers (8–12). Although a few studies have focused on MSW and the risk of HIV/STI transmission (13,14,2,15,16), research on male clients of MSW is very scarce (17–20).

Male clients of MSW (MCMSW) are a key group given their potential role as a bridge for HIV transmission to the general population (17,18,21,22). In Africa, a substantial proportion of MCMSW marry women to avoid experiencing the ongoing hostile anti-MSM social environment. In this way, they can continue to have sexual relations (commercial or not) outside of marriage with male partners. Their non-commercial partners (wife and/or steady male partners) are often unaware of their spouse's/partner's commercial sex activities, and the fact that they are being put at a higher risk of exposure to HIV (23,24). A few studies have highlighted that a substantial proportion of MSM who pay for sex and/or have been paid for sex (19,25,26) have risky sexual behaviours, especially condomless insertive or receptive anal sex (27,18,17).

In this study, our main hypothesis was that MCMSW have risk factors for HIV infection which are associated with their sexual practices. Characterizing MCMSW is crucial in order to investigate not only whether a particular profile exists or not for this sub-population, but also to have a better understanding about their psychosocial characteristics and their sexual behaviours. This study had two objectives: first, to

compare MCMSW with the general MSM population in terms of their sociodemographic and economic characteristics (e.g., age, educational level, employment status, income) and psychosocial characteristics (e.g. self-defined sexual and gender identities, sudden sexual violence by male partners); second, to identify factors associating MCMSW with TS. The study's findings will be useful for healthcare providers and researchers because they offer the first comprehensive insight into both MCMSW and the HIV and STI exposure factors associated with this sub-population's sexual practices.

Materials and Methods

CohMSM study procedures

In June 2015, a prospective cohort study of MSM was initiated at the premises of four local community-based organisations providing HIV services to MSM in four West African cities: Abidjan (Côte d'Ivoire), Bamako (Mali), Lomé (Togo) and Ouagadougou (Burkina Faso). Its main objectives were to assess both the feasibility and value of providing novel three-monthly preventive global care for MSM in West Africa, in order to help reduce the incidence of HIV in this key population, in their female partners and in the general population. The study did not compare a control group with an exposed group, nor was it based on a clinical trial. Participants were identified and recruited by a team of trained peer educators from these local organisations who approached individuals through a specific MSM network. Eligibility criteria included being at least 18 years old, and reporting at least one anal sexual intercourse (insertive or receptive) with another man in the 3 months preceding study enrolment. Eligible individuals were offered a quarterly preventive global care package including: i) collection of information on health status, STI symptoms and sexual behaviours of individuals, ii) clinical

115 examination, iii) diagnosis of STI and if necessary their treatment, iv) prevention
116 tips tailored to MSM based on risk-reduction counselling, and v) provision of
117 condoms and lubricants. In addition, vaccination against hepatitis B and annual
118 tests for syphilis were proposed. HIV-negative MSM were also offered an HIV
119 test at each quarterly visit. MSM found to be HIV-positive were offered
120 immediate care for their infection, including ARV treatment. Before starting the
121 interview, participants systematically received detailed information about the
122 survey's objectives and their right to interrupt the interview without justification.
123 At enrolment and follow-up visits, participants completed face-to-face interviews
124 with a research assistant who collected information on their sociodemographic
125 and economic characteristics, HIV risk-reduction strategies, alcohol consumption,
126 drug use and stigmatization. Participants had to provide written informed consent.
127 The study team was very attentive to ensuring anonymity and confidentiality.
128 Ethics approval was obtained from the National Ethics Committees of Mali
129 (N°2015/32/CE/FMPOS), Burkina Faso (N°2015-3-037), Côte d'Ivoire
130 (N°021/MSLS/CNER-dkn) and Togo
131 (N°008/2016/MSPSCAB/SG/DPML/CBRS). The study protocol was designed in
132 accordance with the ethical charter for research in developing countries of French
133 National Agency for Research on AIDS and Viral Hepatitis (ANRS) in France.
134 The ClinicalTrials.gov Identifier is NCT02626286.
135
136 ***Current study population***
137 Between 06/2015 and 01/2018, 778 participants were enrolled in CohMSM. All HIV-
138 positive participants (n=154), participants receiving benefits for sex (i.e. money,
139 accommodation or gifts) at least once during the follow-up (n=294) and those who did

not complete a sociodemographic questionnaire at baseline (n=50) were excluded from the present analysis (Appendix 1). The present analysis therefore focused on the remaining 280 HIV-negative MSM of whom 238, 211 and 118, respectively, had a follow-up visit at 6- and 12- and 18-months.

Variables

Outcome: The outcome of this study was constructed on the basis of the following question: "During the last 6 months, have you been in a situation where you gave money, accommodation or any other benefit in exchange for sex with a man?". Participants who responded "always" or "sometimes", in contrast to those who responded "never", were categorized as MCMSW. This question was asked at all follow-up visits.

Explanatory variables

a) Socio-demographic and economic characteristics: age was specified as a continuous variable. Dichotomous variables were constructed to indicate whether participants had at least a high-school level of education (=1 vs. < high-school=0), were married or cohabitating (=1 vs. single, divorced or widowed=0), and whether they had a stable housing status (=1 vs. unstable housing status=0). Socio-economic characteristics included employment status (employed=1 vs. unemployed=0), monthly income dichotomised at the median (50 000 Francs de la Communauté Financière en Afrique, approximately US$89.28 in 2017), source of income (work=1 or aid=0) and self-perceived financial situation (comfortable=1 vs. difficult=0).

b) *Sexual characteristics*: a dichotomous variable indicated self-defined gender identity (both a man and a woman=0 vs. man exclusively=1), and a self-defined sexual orientation identity variable indicated whether participants perceived themselves to be bisexual (=0 vs. not bisexual including homosexual, heterosexual=1). A dichotomous avoidance variable was constructed (no=0 vs. yes=1) to indicate whether participants practiced HIV risk-reduction strategies (e.g., avoiding sexual relations when drunk or when consuming other psychoactive products; using antiretroviral drugs to reduce the risk of HIV infection; avoiding anal penetration by seropositive partners or partners of unknown serostatus, etc.) (Appendix 2). Sexual behaviour was recorded using various variables: i) sexual position taken with male partners (exclusively insertive=0 vs. receptive or versatile=1 and not documented=2); ii) condom use with male partners during anal sex (no=0 vs. yes=1), iii) condom use with male partners during oral sex (no=0 vs. yes=1), iv) number of male sexual partners (more than one=1 vs. one=0), v) disagreement about condom use with male partners (no=0 vs. yes=1), vi) group sex with men (no=0 vs. yes=1). The information provided by all these variables concerned the 6 months before the survey. Another variable, entitled "searching for male sexual partners on the internet" (no=0 vs. yes=1), concerned the previous 4 weeks.

c) *Stigmatization during the previous 6 months*: three sub-scores were constructed ranging from 0 to 10. They were based on items taken from previous study (Appendix 3) (28): 1) "experienced stigmatization" (based on 5 items, Cronbach's alpha=0.58); 2) "perceived stigmatization" (based on 11 items, Cronbach's alpha=0.70); and 3) "internalized stigmatization" (based on 8 items, Cronbach's alpha=0.80).

188 Socio-demographic and economic characteristics were measured at baseline only and
189 were specified in the model as time-fixed variables. In contrast, sexual characteristics
190 and stigmatization variables were measured at each time-point in the follow-up and
191 consequently were specified as time-varying.
192
193 ***Statistical analysis***

194 Descriptive analysis was conducted to compare baseline socio-demographic and
195 economic characteristics, and sexual behaviours between MSM practising TS (i.e.
196 MCMSW) and those not practising it. Categorical variables were compared between
197 these two groups using Pearson's chi-squared test ($\chi 2$). Continuous variables were
198 compared using Student's t-test.

199 Univariate and multivariate analyses were then performed using mixed-effects logistic
200 regression to account for the correlation of repeated data over time. All explanatory
201 variables were first tested in univariate mixed-effects logistic regression. Potential
202 variables for the multivariate model were then selected with a p-value<0.2. The final
203 multivariate model was estimated using a forward procedure, which consisted in placing
204 all candidate variables into the multivariate model for testing one by one, and then
205 retaining those with a p-value < 0.05. Fixed effects for each study country were
206 specified in order to avoid bias arising from differences in sample sizes. All statistical
207 analyses were performed using Stata version 13.0 (Stata Corp, College Station, Texas,
208 USA).
209

Results

Overall sample description

Of the 280 HIV-negative participants in this analysis, 238, 211 and 118 had a follow-up visit at 6- and 12- and 18-months, respectively. Over a total of 847 visits, 47 TS encounters were reported by 38 MCMSW (13.6%). Of the latter, only one participant reported systematic TS (2.6%), 18 (47.4 %) stopped reporting TS after baseline, and 6 (15.8%) reported TS after baseline. Thirteen participants (34.2 %) reported occasional TS.

Table 1 shows the comparative analysis of baseline individual characteristics between MCMSW and non-MCMSW. The former were significantly older (average age of 28.5 years vs. 25.4 years, $p<0.0017$). Furthermore, 68.4% (vs. 51.2%) of them were significantly more likely to have an educational level < high-school diploma. A majority of MCMSW (84.2% vs. 76.9 %) were unmarried (single, divorced or widowed) and although 47.4% had an income generating activity, 71.1% reported their financial situation as difficult. Fifty-four percent (52.6%) had a monthly income above the median (50 000 FCFA). Furthermore, MCMSW were significantly more likely (73.7% increased probability) to report work (as opposed to financial aid) as the main source of their income ($p=0.015$). Despite having work, they were significantly more likely (50% increased probability, $p=0.004$) to have unstable housing. Almost half of the MCMSW (47.4%) defined themselves as bisexual while 71.1% identified themselves as being men or boys. MCMSW were also significantly more likely to have exclusively insertive anal sex with male partners.

234 **Table 1: Comparative analysis of the baseline characteristics of the study sample (n=280)**

Sociodemographic and economic characteristics	Male Clients n=38 (13.6 %) n (%)	No Male Clients n=242 (86.4 %) n (%)	[a]p Value
Study countries (n=280)			
Mali	15 (39.5)	62 (25.6)	**0.006**
Cote d'Ivoire	4 (10.5)	65 (26.9)	
Burkina	5 (13.2)	66 (27.3)	
Togo	14 (36.8)	49 (20.3)	
Age (n=280)			
Age [mean ± standard deviation]	[28.5±7.7]	[25.4±5.2]	**0.0017**
Education level (n=280)			
≥ high-school diploma	12 (31.6)	118 (48.8)	**0.048**
< high-school diploma	26 (68.4)	124 (51.2)	
Marital status (n=280)			
Married or living in a couple	6 (15.8)	56 (23.1)	0.310
Single, Divorced, Widowed	32 (84.2)	186 (76.9)	
Had an income generating activity (n=280)			
No	20 (52.6)	153 (63.2)	0.212
Yes	18 (47.4)	89 (36.8)	
Monthly income relative to the median (n=275)			
≤median (50 000 Fcfa)	18 (47.4)	141 (59.5)	0.160
>median (50 000 Fcfa)	20 (52.6)	96 (40.5)	
Sources of income (n=280)			
Aid	10 (26.3)	115 (47.5)	**0.015**
Work	28 (73.7)	127 (52.5)	
Financial perception (n=280)			
Comfortable	11 (28.9)	87 (35.9)	0.400
Difficult	27 (71.1)	155 (64.1)	
Stable housing (n=280)			
Yes	19 (50.0)	177 (73.1)	**0.004**
No	19 (50.0)	65 (26.9)	
Self-defined sexual identity (n=280)			
Bisexual	18 (47.4)	129 (53.3)	0.496
Not bisexual	20 (52.6)	113 (46.7)	
Self-defined gender identity (n=276)			
Both a man and woman	11 (28.9)	89 (37.4)	0.314
Man or Boy	27 (71.1)	149 (62.6)	
Sexual position with male partners in the previous 6 months			
Receptive or versatile	15 (39.5)	140 (57.9)	**0.043**
Exclusively insertive	23 (60.5)	96 (39.7)	
ND[f]	0 (0.0)	6 (2.5)	

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236 [a]p Calculated with Pearson's chi-squared test ($\chi 2$) for categorical variables, Student's t-test for

237 continuous variables.

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Factors associating MCMSW with Transactional Sex

Results from the multivariate analysis (**Table 2**) - after adjusting for the four study countries - showed that the probability of being an MCMSW increased by 4.8% per 1-year increase in age [adjusted odds ratio (aOR) and 95% confidence interval (95% CI):1.048 (1.00-1.10)]. Furthermore, the more participants experienced stigmatization, the higher the probability was that they were MCMSW (this increase reaching 92.0%) (aOR [95%CI]:1.920[1.31-2.81]) during the previous 6-months. In terms of HIV-RRS, participants who self-reported that they practised protected anal sex with male partners were twice as likely to be MCMSW (aOR [95%CI]:2.211[1.15-4.24]) than those who did not report HIV-RRS. Participants who self-reported avoiding sex when drunk or when consuming psychoactive products were 8 times more likely to be MCMSW (aOR [95%CI]:8.789[1.15-67.20]). Finally, participants who self-reported that they exclusively practised insertive anal sex with male sexual partners in the previous 6 months were more than twice as likely to be MCMSW (aOR [95%CI]:2.257[1.12-4.53]).

Table 2: Factors associated with male clients of male sex workers in West Africa: univariate and multivariate analyses with mixed effect logistic regression (n=280, 847 follow-up visits)

Background characteristics	Follow up visits		Univariate analysis[a]		Multivariate analysis[b]	
	Client n= 47 (100%)	No Client n= 800 (100%)	OR [95% CI][c]	p[e]	aOR [95% CI][d]	p[e]
Follow-up time (N=847)						
At baseline	24 (51.1)	256 (32.0)				
At 6 months	8 (17.0)	230 (28.8)				
At 12 months	7 (14.9)	204 (25.5)				
At 18 months	8 (17.0)	110 (13.8)				
Study countries						

Mali	19 (40.4)	240 (30.0)	Ref		Ref	
Cote d'Ivoire	4 (8.5)	196 (24.5)	0.251 [0.08-0.75]	**0.014**	0.209 [0.07-0.66]	**0.007**
Burkina	9 (19.2)	203 (25.4)	0.568 [0.25-1.29]	0.177	0.571 [0.23-1.40]	0.219
Togo	15 (31.9)	161 (20.1)	1.252 [0.60-2.60]	0.547	0.960 [0.45-2.06]	0.916
Age						
Age	47 (100)	800 (100)	1.049 [1.01-1.09]	**0.021**	1.048 [1.00-1.10]	**0.054**
Education level						
≥ high-school diploma	17 (36.2)	371 (46.4)	Ref			
< high-school diploma	30 (63.8)	429 (53.6)	1.546 [0.84-2.86]	0.164		
Monthly income relative to the median						
≤median (50 000 Fcfa)	22 (46.8)	444 (56.9)	Ref			
>median (50 000 Fcfa)	25 (53.2)	337 (43.1)	1.495 [0.83-2.71]	0.184		
Sources of income						
Aid	13 (27.7)	355 (44.4)	Ref			
Work	34 (72.3)	445 (55.6)	2.092 [1.08-4.03]	**0.028**		
Stable housing						
Yes	28 (59.6)	570 (71.2)	Ref			
No	19 (40.4)	230 (28.8)	1.698 [0.93-3.11]	0.087		
Self-defined gender identity						
Both a man and woman	9 (19.1)	281 (35.3)	Ref			
Man or boy	38 (80.9)	515 (64.7)	2.332 [1.11-4.91]	**0.026**		
Sexual position with male partners in the previous 6 months						
Receptive or versatile	16 (34.1)	397 (49.6)	Ref		Ref	
Exclusively insertive	30 (63.8)	324 (40.6)	2.344 [1.25-4.39]	**0.008**	2.257 [1.12-4.53]	**0.022**
ND[f]	1 (2.1)	79 (9.8)	0.341 [0.04-2.65]	0.304	0.665 [0.08-5.52]	0.705
Condom use with male partners during anal sex during the previous 6 months						
No	19 (40.4)	458 (57.2)	Ref		Ref	
Yes	28 (59.6)	342 (42.8)	1.887 [1.03-3.46]	**0.040**	2.211 [1.15-4.24]	**0.017**
Condom use with male partners during oral sex during the previous 6 months						
No	33 (70.2)	455 (56.9)	Ref			
Yes	14 (29.8)	345 (43.1)	0.582 [0.31-1.11]	0.099		
Disagreement about condom use with male partners during the previous 6 months						
No	36 (76.6)	720 (90.0)	Ref			
Yes	11 (23.4)	80 (10.0)	2.518 [1.21-5.23]	**0.013**		
Number of male sexual partners during the previous 6 months						
One	11 (23.4)	331 (41.4)	Ref			
More than one	36 (76.6)	469 (58.6)	2.239 [1.12-4.48]	**0.023**		
Searched for male sexual partners on the internet during the previous 4 weeks						
No	25 (53.2)	528 (66.0)	Ref			
Yes	22 (46.8)	272 (34.0)	1.696 [0.94-3.07]	0.082		
Group sex with men						
No	38 (80.9)	731 (91.4)	Ref			
Yes	9 (19.1)	69 (8.6)	2.146 [0.90-5.12]	0.085		
HIV risk-reduction strategies practiced						
avoid anally penetrating seropositive partners or partners whose serostatus was unknown						
No	5 (10.6)	191 (23.9)	Ref			
Yes	42 (89.4)	609 (76.1)	2.792 [1.08-7.19]	**0.033**		
avoid being anally penetrated by seropositive partners or partners whose serostatus was unknown						
No	4 (8.5)	190 (23.8)	Ref			
Yes	43 (91.5)	610 (76.2)	3.551 [1.25-10.06]	**0.017**		
avoid having sexual relations when drunk or when consuming other psychoactive products, in order to reduce the risk of HIV infection						

No	1 (2.1)	131 (16.4)	Ref		Ref	
Yes	46 (97.9)	669 (83.6)	10.024 [1.36-73.74]	0.024	8.789 [1.15-67.20]	0.036
Stigmatization Scores						
Experienced stigmatization during the previous 6 months	47 (100)	800 (100)	1.477 [1.05-2.08]	0.025	1.920 [1.31-2.81]	0.001

[a]Univariate analysis using a mixed-effect logistic regression model.

[b]Multivariate analysis using a multivariate stepwise mixed effect logistic regression.

[c]OR = odds ratio; CI = confidence interval.

[d]aOR = adjusted odds ratio; CI = confidence interval.

[e]p Calculated with Wald chi2 test.

[f]ND = not documented. Includes missing data, "does not know" and "no response" terms.

Discussion

Despite the several studies conducted to date on male clients of Female Sex Workers (29–32), and the growing amount of literature exploring the experiences and practices of male sex workers (MSW) (14,24,33,34), few studies have focused on male clients of male sex workers (MCMSW). To our knowledge, our study is the first to investigate the issue of transactional sex (TS) in MCMSW in West Africa. Our findings add to the literature by providing information regarding sociodemographic and economic characteristics of this population in four West African countries. About 14 % of our study population were MCMSW (n=38). This percentage is much higher than that found in China (5%) (17). Furthermore, the majority of the MCMSW in our study reported employing risk reduction strategies with male sexual partners, including engaging in protected anal sex, and avoidance of sex when consuming psychoactive products. Similar results for the use of risk reduction strategies among MCMSW were documented in a study in Vietnam in 2013, which first evaluated participants' perception of risk and then the risk-reduction measures they implemented before sexual intercourse (35). Future intervention efforts should encourage existing HIV risk-reduction practices among MCMSW. Although the subject of a 'causal relationship' between homosexuality, unsafe sex and HIV infection

has dominated HIV and AIDS discourse in the West (36,37), our findings suggest that pressures, roles and power related to TS may influence the ability of men to behave in ways that reflect their risk perceptions. Accordingly, our results for MCMSW provide some support for health behaviour models which posit that greater perceived risk is associated with fewer risky sexual behaviours. HIV/AIDS education and prevention programs should investigate in greater detail how TS in key populations such as MSM may influence risk perceptions and risk behaviours. Successful HIV prevention strategies for hard-to-reach MCMSW populations require effective integration of evidence-based biomedical, behavioural, and structural interventions, especially in the African context where HIV prevention is centred more on heterosexual contact and vaginal intercourse. As well as social norms, erroneous representations of HIV risks and taboos, HIV prevention programs should also take into account all forms of sexuality and social status (35,38,39). We found that participants who self-reported that they exclusively had insertive anal sex with male sexual partners in the previous 6 months, were more likely to be MCMSW. Previous research showed that insertive anal sex is less risky for HIV contamination than receptive or versatile anal sex (40,41). In our study, the practice of insertive anal sex reported by MCMSW might well contribute to reduce the spread of HIV within and by this population, given that TS is a known factor for increased likelihood of HIV transmission (13). Globally, safer TS plays an important role in risk reduction of HIV and other STI not only for men but also for women (42). This was further indicated by our findings that the probability of being MCMSW tended to increase for each 1-year increase in age. This result contrasts with prior research in the US, China and Australia (19,17,22). The older age of MCMSW might be a barrier to finding younger regular sex partners, which in turn may push them to engage more in transactional sex (43). Finally, our findings also indicated that the more participants experienced

310 stigmatization, the higher the probability was that they were MCMSW. West Africa is
311 hostile in general to homosexuality, but our results do not provide information as to why
312 MCMSW seem to experience more stigmatization than other MSM (24,44–47).
313 The primary strengths of our study come from the fact that the CohMSM study was
314 performed in four West African countries, was longitudinal in nature, and had four
315 scheduled visits. Some study limitations should be taken into account when interpreting
316 our results. First, the CohMSM study was designed to examine the feasibility of
317 introducing a preventive intervention among MSM, and not specifically to explore the
318 issue of MCMSW. Second, given the declarative nature of the data and the fact that
319 respondents participated in face-to-face interviews, social desirability bias is possible.
320 Accordingly, sexual risk behaviours may have been underreported. However, this bias
321 was perhaps minimized by the fact that the research assistants involved all worked close
322 to the ground, came from recognized non-governmental organizations, and were directly
323 involved with the MSM population. It is likely therefore that a trustful relationship
324 emerged over time with the research assistants, and consequently, that they were able to
325 accurately identify MCMSW.

326 Despite the study's limitations, our results suggest that MCMSW should be provided with
327 long-term HIV prevention interventions which: (1) focus on individual behaviour change
328 (addressing barriers to condom use with other alternative means of prevention such as
329 pre-exposure prophylaxis (PrEP), enhancing current risk reduction practices); (2)
330 incorporate interpersonal contexts (simultaneously engaging MCMSW and their peers,
331 targeting interpersonal skills, accounting for partner type and intimacy dynamics for
332 regular sexual partners); and (3) take into account their exogenous environments (stigma
333 of being MCMSW in West Africa).
334

Conclusions

Little is known about male clients of male sex workers (MCMSW) in West Africa. Our results highlighted a low proportion of MSM who reported gave somethings in exchange for sex (13.6 %) and they were characterized by older age, a lower educational level, an unstable housing and exclusively insertive anal sex. The majority of them employed HIV risk-reduction strategies with male sexual partners, including engaging in protected anal sex, avoidance of sex when consuming psychoactive products, and practising exclusively insertive anal sex.

Despite these positive findings, our study also highlights the need for further research in West Africa targeting MCMSW and their practices, something that has been almost completely neglected to date. A better understanding of this sub-population could help reduce HIV transmission in West Africa.

Acknowledgements

The study team would like to thank the participants for their valuable contributions to this study. Our thanks also to Jude Sweeney for the English revision and editing of the manuscript.

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