

ORIGINAL RESEARCH

Health information-seeking behaviour, intimate partner violence, and sexual risk-taking among MSM in Bali, Indonesia

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Abstract

“Men who have sex with men” (MSM) had predominantly driven the Human Immunodeficiency Virus (HIV) transmission in Indonesia. This study was aimed to investigate the health information-seeking behaviours, intimate partner violence, and sexual risk-taking among MSM in Bali, Indonesia. Total of 165 eligible responses were enrolled through an online survey. The descriptive and cross-tabulation statistical analyses were conducted. More than half of MSM never accessed information pertaining to HIV and sexually transmitted infections (STIs). Furthermore, MSM faced various types of violence from partners: 24.24% psychological, 37.58% verbal, 20.61% physical, and 16.97% sexual. The unprotected sex prevalence among MSM was 23.03% and varied for those experiencing verbal and physical violences, having transactional sex, and number of sexual partners. Health promotions for MSM population included an increase in awareness of HIV and STIs risks, condom negotiation capacity, and condom use practices.

Keywords

MSM; Sexual risk-taking; Health information-seeking behaviour; Intimate partner violence; Indonesia

1. Introduction

HIV had been a widespread health burden globally. The Joint United Nations Programme on HIV/AIDS (UNAIDS) data had estimated 39 million people living with HIV (PLHIV) in 2022 globally, wherein 1.3 million were newly diagnosed, and 0.63 million died from Acquired Immune Deficiency Syndrome (AIDS)-related illnesses in the same year [1]. The number of PLHIV in Asia and the Pacific region was 6.5 million, *i.e.*, 16.6% of the global burden, of whom ~0.3 million were newly diagnosed and 0.15 million died in 2022 [2]. Key population groups (sex workers and their clients, MSM, people injecting drugs and transgenders) accounted for over 90% of new HIV infections in Asia and the Pacific region.

Indonesia had growing HIV epidemic with ~377,650 PLHIV till March 2023 [3]. The annual number of newly diagnosed HIV people had increased in the past decade from 21,511 in 2012 to 50,282 in 2019, and declined to 13,279 in March 2023 [3]. In 2023 alone, 29% of the total HIV cases in country were diagnosed in MSM population compared to 26.6% in 2021 [3]. Engagement in high-risk sexual behaviours including multiple sexual partners and taking alcohol or drugs before sex were the major contributing factors towards unprotected receptive and insertive anal intercourse for HIV transmission in them [4]. MSM and homosexuality had not been widely accepted in communities and regarded as the violation of

socio-cultural and religious values in Indonesia [5]. This situation got complex when Indonesian parliament enacted a new criminal code on 06 December 2022, that included the provisions contradicting international human rights, laws, and standards. The provisions undermined fundamental rights pertaining to freedom of speech and association for individuals identified as lesbian, gay, bisexual, and transgender (LGBT) [6]. The prohibitive socio-cultural and religious values and norms against same-sex relations had thus been supportive of the factors for concealing sexual orientation, and engaging in unprotected sex because of the reluctance in accessing condoms to avoid negative judgement or labelling [7]. Factors such as subjective norms of MSM peers and perceived behavioural control had also influenced their intention and willingness in using condoms [8]. Other studies also reported that intimate partner violence had a strong negative impact on MSM's condom usage [9, 10]. The MSM sex workers experiencing violence from partners were likely to engage in unprotected sex, and thus susceptible to HIV transmission [11, 12].

It had been suggested that interventions regarding health promotion would improve the knowledge and awareness about condom usage because the risky sexual behaviours had mainly contributed in HIV transmission among MSM populations. However, the findings of a study in Bali had demonstrated

that good level HIV knowledge was not always translated into protected sex, positive health information-seeking behaviour, and HIV treatment compliance among MSM [13]. Understanding of their health information-seeking behaviours regarding HIV/AIDS was thus essential. A study in Vietnam had reported that MSM would seek information of HIV/AIDS and STIs, and search for sex partners *via* mobile apps, websites or dating apps [14]. Similarly, a study in Indonesia had found that MSM used mobile or dating apps to find sex partners and build MSM specific social networks [7]. The online platforms could thus be benefitted for health promotion and intervention in HIV transmission to target MSM populations in the Indonesian context.

The existing literature provided limited evidence on (i) HIV and STIs related health information-seeking behaviours; and (ii) the link between intimate partner violence and condom usage, among MSM in Indonesia. This study was thus aimed to fill these gaps by exploring health information-seeking behaviours, intimate partner violence, and sexual risk-taking among MSM in Bali, Indonesia. Understanding these aspects would be beneficial for improving HIV services to MSM populations, developing HIV policy and interventions to address their needs, and support their access to condoms, and HIV care and treatment.

2. Materials and methods

2.1 Methods

This was a cross-sectional study based on the dataset from project entitled “Kita Banget App: Mobile Apps Development to Improve HIV Services”, conducted from September to November 2020 by the Faculty of Medicine, Udayana University, Indonesia. The data were collected using Google Forms as the exact number of MSM population was not available and MSM was difficult to reach at the time of study because of COVID-19. The data validation procedure was employed using Google Form features. Prospective participants from MSM-related communities were invited to improve the data quality. Filter questions were used to ensure the respondents being MSM, *i.e.*, (1. Assigned sex at birth? a. Male; b. Female; and 2. Ever had sex with? a. Male; b. Female). Informants answering “Male” for both questions were classified as MSM. Five seed samples from the local non-government organization in Bali were recruited for the data collection procedure. These seed samples spread the online questionnaires link to their communities *via* social media (Facebook, Instagram, WhatsApp, *etc.*). The questionnaires were anonymous and took 15–20 min for completion. Each respondent completing the survey received phone credit (Rp. 25.000 = USD 1.75) to reimburse for their time. OpenEpi Version 3 (<https://www.openepi.com>) was employed to calculate the sample by assuming following parameters: MSM population size of 3539 based on Ministry of Health Indonesia (MOH) data in 2019, 62.3% of MSM experiencing violence [11], 10% margin of error, and 80% confidence interval. Finally, the minimum sample consisted of 89 respondents. Total of 182 responses were collected with 17 duplicates (duplicate phone numbers), which led to 165 eligible responses included in the

analysis.

2.2 Variables

This study had the dependent variable of unprotected sex defined *via* self-reporting as “inconsistent” or “not every time” or “not always” regarding the use of condoms while having sex with the partner in previous six months. The independent variables were personal attributes, health information-seeking behavior, intimate partner violence experience, and sexual behavior. Personal factors included age, place of residence, employment status, sexual orientation, and HIV and STIs infection. Health information-seeking behavior defined as, whether MSM ever searched for information of STIs and HIV prevention and treatment services. Four types of intimate partner violence (IPV) were measured in this study, *i.e.*, psychological (*e.g.*, manipulation, exploitation, abuse, humiliation, *etc.*), verbal (*e.g.*, yelling, scolding, shouting, *etc.*), physical (*e.g.*, hitting, slapping, grabbing, kicking, stabbing, burning, slashing, *etc.*), and sexual (*e.g.*, rape, sexual intimidation including threats or attempted rape, *etc.*). The factors of sexual behavior consisted of transactional sex (receiving money, gifts, or other items in exchange for or paid for sexual intercourse), number of sexual partners, and sex under alcohol and drugs usage. The detailed questions for measuring these factors had been given in **Supplementary Table 1**.

2.3 Statistical analysis

Descriptive analysis was employed to assess the prevalence of unprotected sex, and intimate partner violence, and illustrate other characteristics. The Chi-square and Fisher’s Exact tests were conducted to assess the differences for prevalence of unprotected sex in MSM. All statistical analyses were performed *via* the statistical program Stata (Version 12.0, StataCorp, College Station, TX, USA).

3. Results

The characteristics of study participants regarding personal factors, health information-seeking behaviour, intimate partner violence, and sexual behaviour are given in Table 1. More than one-quarter of MSM were 26–30 years old (30.30%). About 70.30% MSM lived in Denpasar. More than three-quarters of MSM were employed (78.79%). More than three-quarters of MSM identified themselves as homosexual (89.09%). Almost all MSM (97.58%) never sought STIs information as per the health information-seeking behaviour. More than three-quarters had never pursued for information about HIV prevention (80.00%). More than one-half of MSM never inquired about HIV treatment (60.61%), HIV test service (58.79%) and antiretroviral therapy (ART) service (66.67%).

MSM also experienced violence from their partner. About 24.24% MSM faced psychological violence, 37.58% verbal violence, 20.61% physical violence, and 16.97% sexual violence from the partner. More than two-thirds (67.88%) of MSM were engaged in transactional sex, while more than three-quarters (78.79%) had sex under the influence of drugs or alcohol in the last six months. Only 28.48% MSM had multiple (more than one) sex partners. There were 21.79% MSM infected

TABLE 1. Personal, health information-seeking behaviour, types of intimate partner violence, and sexual behaviour characteristics of MSM (n = 165).

Variables	Frequency (%)
Age	
≤20 yr	5 (3.03)
21–25 yr	42 (25.45)
26–30 yr	50 (30.30)
31–35 yr	39 (23.64)
36–40 yr	20 (12.12)
>40 yr	9 (5.45)
Place of residence	
Outside Denpasar	49 (29.70)
Denpasar	116 (70.30)
Employment status	
Employed	130 (78.79)
Unemployed	35 (21.21)
Sexual orientation	
Bisexual	18 (10.91)
Homosexual	147 (89.09)
Information about STIs prevention	
No	161 (97.58)
Yes	4 (2.42)
Information about HIV prevention	
No	33 (20.00)
Yes	132 (80.00)
Information about HIV treatment	
No	100 (60.61)
Yes	65 (39.39)
Information about HIV test services	
No	97 (58.79)
Yes	68 (41.21)
Information about ART service	
No	110 (66.67)
Yes	55 (33.33)
Psychological violence	
No	125 (75.76)
Yes	40 (24.24)
Verbal violence	
No	103 (62.42)
Yes	62 (37.58)
Physical violence	
No	131 (79.39)
Yes	34 (20.61)

TABLE 1. Continued.

Variables	Frequency (%)
Sexual violence	
No	137 (83.03)
Yes	28 (16.97)
Transactional sex	
No	53 (32.12)
Yes	112 (67.88)
Number of sexual partner	
Single	118 (71.52)
Multiple	47 (28.48)
Sex under the influence of drugs or alcohol	
No	35 (21.21)
Yes	130 (78.79)
STIs infection	
No	129 (78.18)
Yes	36 (21.82)
HIV status	
Negative	84 (50.91)
Never tested/do not know	54 (32.73)
Positive	27 (16.36)
Condom usage	
Inconsistent	38 (23.03)
Consistent (every time)	127 (76.97)

STIs: sexually transmitted infections; HIV: Human Immunodeficiency Virus; ART: antiretroviral therapy.

by STIs in the last six months wherein 16.36% were HIV positive. About 32.73% MSM were never tested or did not know their HIV status. About 23.03% MSM had inconsistently used condoms.

Fig. 1 exhibits the percentage of MSM experiencing any type of IPV like single and multiple. Among single type of IPV, 4.1% MSM experienced psychological violence, 18.9% verbal, 4.1% physical, and 5.4% sexual. Furthermore, 16.2% MSM suffered all types of violence. The detailed MSM proportions experiencing multiple types of IPV could be seen in the Venn diagram (Fig. 1).

The prevalence of unprotected sex among MSM by characteristics such as intimate partner violence, and health information-seeking behaviour (Table 2). The unprotected sex prevalence was higher ($p = 0.029$) in those experiencing verbal violence (32.26%) compared to who never experienced it (17.48%). The unprotected sex prevalence was higher ($p = 0.018$) in those with physical violence (38.24%) compared to who never experienced it from their partner (19.08%). Regarding sexual behaviour, the unprotected sex prevalence was higher ($p = 0.014$) in those involved in transactional sex (28.57%) compared to who never engaged in this (11.32%). The unprotected sex prevalence was higher ($p = 0.017$) in MSM having one sexual partner (27.97%) compared to with multiple sexual partners (10.64%).

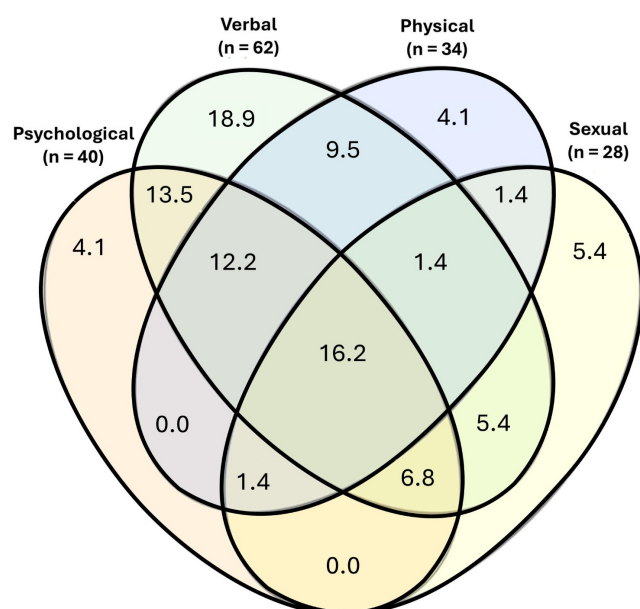


FIGURE 1. Types of intimate partner violence experienced by MSM (n = 165).

The prevalence of HIV and STIs cases by characteristic like types of intimate partner violence, and health information-seeking behaviour in MSM (Table 3). The HIV-positive prevalence was higher ($p < 0.001$) in MSM who searched for information about HIV treatment (32.31%) compared to who did not (6.00%). HIV-positive prevalence was higher ($p = 0.011$) in MSM searching for information about ART services (23.64%) compared to who did not (12.73%). STI-positive prevalence was higher ($p = 0.048$) in MSM searching for information about HIV services (29.41%) compared to who did not (16.49%). STI-positive prevalence was higher ($p = 0.016$) in MSM searching for information about ART services (32.73%) compared to who did not (16.36%). STI-positive prevalence was higher ($p = 0.033$) in MSM experiencing verbal violence (30.65%) compared to who did not (16.50%). STI-positive prevalence was higher ($p = 0.028$) in MSM never involved in transactional sex (32.08%) compared to who were involved (16.94%). STI-positive prevalence was higher ($p = 0.047$) in MSM with multiple sexual partners (31.91%) compared to with single sexual partner (17.80%).

4. Discussion

This study finding would improve the HIV and STI programs for reducing their transmission among the MSM population in Bali, Indonesia. It was found herein that transactional sex was associated with unprotected sex. MSM engaged in transactional sex to attain particularly the socioeconomic benefits from partners [15]. Transactional sex might create imbalance in power relations to lead into intimate partner violence among MSM [16]. The sexual partner type was also linked with transactional sex wherein romantic MSM partners were engaged in unprotected sex as an expression of love to the partner [17], which in turn increased the HIV and STIs transmission risk [18].

A study in United States had highlighted that MSM considering the relationship as serious tended to perform unprotected sex with partner [19]. MSM with single sexual partner faced difficulties in negotiating for condom usage, especially if they considered the partner as romantic [20]. The same had been reflected in this study where MSM with only one sexual partner had higher prevalence of unprotected sex compared to with multiple partners. Contrarily, MSM with multiple sexual partners had higher STI prevalence compared to with single partner. The findings indicated that condom negotiation and condom usage in MSM population was crucial issue to be addressed *via* HIV and STI interventions to prevent their transmission among them. Furthermore, limited HIV and STI programs on transmission prevention in MSM population were found in the study setting and Bali, Indonesia in general.

This study found that the unprotected sex prevalence in MSM experiencing verbal and physical violence was higher compared to who did not experience them. A higher STI prevalence was also found in MSM experiencing verbal violence. This might imply that IPV could increase the HIV transmission risk and cause mental health problems in MSM [21]. This could worsen the overall health condition of MSM because they already had suffered from social pressure, multiple layers of stigma, and discrimination [22]. A comprehensive meta-analysis involving 13,797 participants depicted that IPV not only increased the likelihood of substance usage but also led to the higher prevalence of depressive symptoms, HIV positivity, and engagement in unprotected anal sex in MSM [23].

Some studies depicted that IPV had detrimental impact on MSM mental health. Studies conducted in Guatemala and China revealed that experiencing IPV raised the anxiety and depression in MSM individuals [21, 24]. Serious mental health problems could reduce ART retention and adherence in MSM [25]. MSM experiencing IPV had been reported to less likely access the HIV testing [26]. Thus, HIV-related health outcomes could be enhanced in MSM with IPV history by prioritizing mental health as a focal point for intervention [27]. A strategy could involve the integration of HIV services, mental health services, and IPV prevention. Providing mental health services could also increase the uptake of HIV testing and PrEP in MSM [28]. A study in Japan found that the integration of HIV and mental health services increased the treatment retention in PLHIV [29]. IPV screening was imperative in providing mental health services to MSM experiencing violence [29]. Implementing a community-based intervention in MSM communities could improve the access to IPV screening and mental health services for MSM individuals [30]. It was thus crucial for the governments' and non-governmental organisations' HIV programs to provide mental health services and IPV prevention.

This study found that above three-quarters of MSM had searched for information about HIV prevention. In contrast, less than one-half of MSM had searched for information about STI prevention, HIV test service, and ART service. MSM in this study lacked information on STIs, HIV tests, and treatments which could lower the uptake of HIV and STIs tests, and non-engagement in treatment programs [31]. Several factors could contribute to persistent problems regarding HIV-related knowledge and limited access to information on HIV and STI

TABLE 2. Prevalence of unprotected sex by characteristics such as types of intimate partner violence, and health information-seeking behaviour (n = 165).

Variables	Consistent condom usage		<i>p</i> -value
	Consistent n (%)	Inconsistent n (%)	
Age			
≤20 yr	5 (100.00)	0 (0.00)	0.746 ^b
21–25 yr	30 (71.43)	12 (28.57)	
26–30 yr	41 (82.00)	9 (18.00)	
31–35 yr	29 (74.36)	5 (25.64)	
36–40 yr	15 (75.00)	5 (25.00)	
>40 yr	7 (77.78)	2 (22.22)	
Domicile			
Outside Denpasar	38 (77.55)	11 (22.45)	0.908 ^a
Denpasar	89 (76.72)	27 (23.28)	
Employment status			
Employed	97 (74.62)	33 (25.38)	0.166 ^a
Unemployed	30 (85.71)	5 (14.29)	
Sexual orientation			
Bisexual	15 (83.33)	3 (16.67)	0.767 ^b
Homosexual	112 (76.19)	35 (23.81)	
Information about STIs prevention			
No	123 (76.40)	38 (23.60)	0.575 ^b
Yes	4 (100.00)	0 (0.00)	
Information about HIV prevention			
No	25 (75.76)	8 (24.24)	0.853 ^a
Yes	102 (77.27)	30 (22.73)	
Information about HIV treatment			
No	76 (76.00)	24 (24.00)	0.714 ^a
Yes	51 (78.46)	14 (21.54)	
Information about HIV test services			
No	72 (74.23)	25 (25.77)	0.318 ^a
Yes	55 (80.88)	13 (19.12)	
Information about ART service			
No	83 (75.45)	27 (24.55)	0.513 ^a
Yes	44 (80.00)	11 (20.00)	
Physiological violence			
No	98 (78.40)	27 (21.60)	0.440 ^a
Yes	29 (72.50)	11 (27.50)	
Verbal violence			
No	85 (82.52)	18 (17.48)	0.029 ^{*a}
Yes	42 (67.74)	20 (32.26)	
Physical violence			
No	106 (80.92)	25 (19.08)	0.018 ^{*a}
Yes	21 (61.76)	13 (38.24)	

TABLE 2. Continued.

Variables	Consistent condom usage		<i>p</i> -value
	Consistent n (%)	Inconsistent n (%)	
Sexual violence			
No	108 (78.83)	29 (21.17)	0.209 ^a
Yes	19 (67.86)	9 (32.14)	
Transactional sex			
No	47 (88.68)	6 (11.32)	0.014* ^a
Yes	80 (71.43)	32 (28.57)	
Number of sexual partners			
Single	85 (72.03)	33 (27.97)	0.017* ^a
Multiple	42 (89.36)	5 (10.64)	
Having sex under the influence of drugs or alcohol			
No	26 (74.29)	9 (25.71)	0.671 ^a
Yes	101 (77.69)	29 (22.31)	
STIs infection			
No	99 (76.74)	30 (23.26)	0.896 ^a
Yes	28 (77.78)	8 (22.22)	
HIV status			
Negative	67 (79.76)	17 (20.24)	0.367 ^a
Never tested/do not know	42 (77.78)	12 (22.22)	
Positive	18 (66.67)	9 (33.33)	

Note: ^aChi-square test; ^bFisher's exact test; **p*-value < 0.05.

STIs: sexually transmitted infections; HIV: Human Immunodeficiency Virus; ART: antiretroviral therapy.

prevention in MSM. MSM in Indonesia were often compelled to conceal identities out of societal stigma, fear thereof, and potential criminalization [32]. Conducting HIV programs regarding outreach and health promotion to reach MSM population became difficult in such situation [33]. Conversely, MSM in Indonesia mostly employed secretive platforms such as mobile and web applications to meet other men for sex [34]. Health promotion targeting the MSM population through these platforms could thus be a strategy to improve the MSM knowledge related to HIV and STI [35].

HIV programs could employ a collaborative approach in delivering health promotion, especially by empowering the social network and digital platform used by MSM as communication media [36, 37]. Studies in China and the United States found that providing information and HIV-related services through digital platforms (*e.g.*, mobile health and websites) had increased the engagement of MSM population in accessing HIV-related services [38, 39]. MSM preferred to communicate *via* digital platform as it provided exclusive and safe environment to interact with others. Providing health information through digital platform was thus a good strategy to access comprehensive information about HIV and STIs in MSM population.

The present study had certain limitations. It was unable

to establish causality or draw inferences because of a cross-sectional approach with convenient sampling. Furthermore, the online survey relied on self-reporting which introduced the possibility of recall bias, self-bias, and a tendency to provide socially desirable responses. The duplicate phone numbers were removed during the data validation process of this study. However, it was possible for the multiple families to share the same number. This exclusionary practice could result in systematic bias. Despite these constraints, the study provided valuable insights into the health information-seeking behaviour, intimate partner violence, and sexual risk-taking in the MSM community of Bali, Indonesia. The outcomes of this online survey could be a foundational reference for conducting qualitative studies in future.

5. Conclusions

Most participants of this study consisted of MSM aged 26–30 years, residing in Denpasar, employed, identified as homosexual, not infected by recent STIs, and HIV negative. Pertaining to the trends in health information-seeking behaviour, over one-third of MSM searched for information on HIV prevention, while less than half sought information on STI prevention, HIV treatment, HIV testing services and ART services. The

TABLE 3. Prevalence of HIV and STIs cases by characteristics such as types of intimate partner violence, and health information-seeking behaviour (n = 165).

Variables	HIV Status			p-value	STI Status		p-value
	Negative n (%)	Do not know n (%)	Positive n (%)		Negative n (%)	Positive n (%)	
Age							
≤20 yr	2 (40.00)	3 (60.00)	0 (0.00)	0.890 ^b	4 (80.00)	1 (20.00)	0.469 ^b
21–25 yr	23 (54.76)	12 (28.57)	7 (16.67)		35 (83.33)	7 (16.67)	
26–30 yr	27 (54.00)	15 (30.00)	8 (16.00)		37 (74.00)	13 (26.00)	
31–35 yr	19 (48.72)	15 (38.46)	5 (12.82)		30 (76.92)	9 (23.08)	
36–40 yr	9 (45.00)	7 (35.00)	4 (20.00)		14 (70.00)	6 (30.00)	
>40 yr	4 (44.44)	2 (22.22)	3 (33.33)		9 (100.00)	0 (0.00)	
Domicile							
Outside Denpasar	23 (46.94)	37 (31.90)	9 (18.37)	0.791 ^a	39 (79.59)	10 (20.41)	0.776 ^a
Denpasar	61 (52.59)	37 (31.90)	18 (15.52)		90 (77.59)	26 (22.41)	
Employment status							
Employed	60 (46.15)	46 (35.38)	24 (18.46)	0.058 ^a	100 (76.92)	30 (23.08)	0.451 ^a
Unemployed	24 (68.57)	8 (22.86)	3 (8.57)		29 (82.86)	6 (17.14)	
Sexual orientation							
Bisexual	10 (55.56)	4 (22.22)	4 (22.22)	0.556 ^b	16 (88.89)	2 (11.11)	0.367 ^b
Homosexual	74 (50.34)	50 (34.01)	23 (15.65)		113 (76.87)	34 (23.13)	
Information about STIs prevention							
No	81 (50.31)	53 (32.92)	27 (16.77)	1.000 ^b	125 (77.64)	36 (22.36)	0.577 ^b
Yes	3 (75.00)	1 (25.00)	0 (0.00)		4 (100.00)	0 (0.00)	
Information about HIV prevention							
No	14 (42.42)	11 (33.33)	8 (24.24)	0.341 ^a	28 (84.85)	5 (15.15)	0.300 ^a
Yes	70 (53.03)	43 (32.58)	19 (14.39)		101 (76.52)	31 (23.48)	
Information about HIV treatment							
No	59 (59.00)	35 (35.00)	6 (6.00)	<0.001 ^{*a}	82 (82.00)	18 (18.00)	0.141 ^a
Yes	25 (38.46)	19 (29.23)	21 (32.31)		47 (72.31)	18 (27.69)	
Information about HIV test services							
No	51 (52.58)	31 (31.96)	15 (15.46)	0.866 ^a	81 (83.51)	16 (16.49)	0.048 ^{*a}
Yes	33 (48.53)	23 (33.82)	12 (17.65)		48 (70.59)	20 (29.41)	
Information about ART service							
No	65 (59.09)	31 (28.18)	14 (12.73)	0.011 ^{*a}	92 (83.64)	18 (16.36)	0.016 ^{*a}
Yes	19 (34.55)	23 (41.82)	13 (23.64)		37 (67.27)	18 (32.73)	
Physiological violence							
No	62 (49.60)	40 (32.00)	23 (18.40)	0.456 ^a	100 (80.00)	25 (20.00)	0.317 ^a
Yes	22 (55.00)	14 (35.00)	4 (10.00)		29 (72.50)	11 (27.50)	
Verbal violence							
No	54 (52.43)	33 (32.04)	16 (15.53)	0.870 ^a	86 (83.50)	17 (16.50)	0.033 ^{*a}
Yes	30 (48.39)	21 (33.87)	11 (17.74)		43 (69.35)	19 (30.65)	
Physical violence							
No	67 (51.15)	42 (32.06)	22 (16.79)	0.921 ^a	106 (80.92)	25 (19.08)	0.095 ^a
Yes	17 (50.00)	12 (35.29)	5 (14.71)		23 (67.65)	11 (32.35)	

TABLE 3. Continued.

Variables	HIV Status			<i>p</i> -value	STI Status		<i>p</i> -value
	Negative n (%)	Do not know n (%)	Positive n (%)		Negative n (%)	Positive n (%)	
Sexual violence							
No	68 (49.64)	44 (32.12)	25 (18.25)	0.424 ^b	109 (79.59)	28 (20.44)	0.342 ^a
Yes	16 (57.14)	10 (35.71)	2 (7.14)		20 (71.43)	8 (28.57)	
Transactional sex							
No	28 (52.83)	20 (37.74)	5 (9.43)	0.229 ^a	36 (67.92)	17 (32.08)	0.028* ^a
Yes	56 (50.00)	34 (30.46)	22 (19.64)		93 (83.04)	19 (16.94)	
Number of sexual partners							
Single	63 (53.39)	34 (28.81)	21 (17.80)	0.228 ^a	97 (82.20)	21 (17.80)	0.047* ^a
Multiple	21 (44.68)	20 (42.55)	6 (12.77)		32 (68.09)	15 (31.91)	
Having sex under drug or alcohol influence							
No	18 (51.43)	14 (40.00)	3 (8.57)	0.306 ^a	26 (74.29)	9 (25.71)	0.530 ^a
Yes	66 (50.77)	40 (32.73)	27 (16.36)		103 (79.23)	27 (20.77)	
Condom usage							
Inconsistent	17 (44.74)	12 (31.58)	9 (23.68)	0.367 ^a	30 (78.95)	8 (21.05)	0.896 ^a
Consistent	67 (52.76)	42 (33.07)	18 (14.17)		99 (77.95)	28 (22.05)	

Note: ^aChi-square test; ^bFisher's exact test; **p*-value < 0.05.

STIs: sexually transmitted infections; HIV: Human Immunodeficiency Virus; ART: antiretroviral therapy.

unprotected sex prevalence varied and was associated with physical and verbal violence, transactional sex, and the number of sexual partners. Consequently, the health promotion efforts targeting the MSM community should prioritize STI prevention, HIV treatment, HIV testing services, ART services, and address the impact of intimate partner violence.

AVAILABILITY OF DATA AND MATERIALS

The data from this study can be made available upon reasonable request to the corresponding author.

AUTHOR CONTRIBUTIONS

NPAH—responsible for conceiving the idea; prepared the initial draft of the manuscript. NPAH and DSL—analyzed the data. PPJ—oversaw the English proofreading and managed the APC (Article Processing Charge) costs. NPAH, PPJ, DSL, HAG, NKF and PRW—critical review the manuscript and approval for its final version. All authors made significant contributions to the development of the article and have approved the version submitted for publication.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The studies involving human participants underwent a review and received approval from the Research Ethics Commission at

the Faculty of Medicine, Udayana University/Sanglah General Public Hospital, Bali Province, Indonesia (No. 1335/UN 14.2.2/V.I.I/4/T/2020). Informed consent was obtained from all subjects involved in the study. Written informed consent has been obtained from the participants to publish this paper.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at <https://oss.jomh.org/files/article/1806557885571710976/attachment/>

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