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Correlates of Forced Sex Among Young Men Who Have Sex With Men in Yangon and Monywa, Myanmar

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Abstract Forced sex at an early age is associated with a variety of negative factors including increased illness, high-risk sexual and substance-use behaviors, and mental and psychological stress. These sequelae may be compounded for men who have sex with men (MSM), especially young MSM and those with feminine gender identity and expression. This survey examined the prevalence and associations of forced sex among young MSM in two cities in Myanmar. In 2013–2014, surveys using respondent-driven sampling collected data on 200 young MSM in Yangon and 200 in Monywa. One quarter of young MSM in Yangon and 21 % in Monywa reported ever experiencing forced sex. In a multivariable model, having problems with family members and having any MSM friends with many partners had higher odds of experiencing forced sex. Having maternal acceptance of same-sex attraction (compared to acceptance by both parents) and becoming aware of their same-sex attraction at or above the age of 16 had lower odds of experiencing forced sex. Focused research is needed to understand the family and other social dynamics affecting vulnerability to forced sex, as well as specific sexual risks associated with forced sex among young MSM, including HIV acquisition and transmission risks.

Keywords Myanmar · Forced sex · Men who have sex with men · Transgender · Sexual orientation

Introduction

Sexual violence broadly refers to acts ranging from sexual harassment to rape. The relationship between sexual violence and adverse mental health outcomes has been investigated in different geographical and cultural settings (Chiu et al., 2013; Dilorio, Hartwell, & Hansen, 2002; Li, Ahmed, & Zabin, 2012), especially among women (Devries et al., 2011; Gruskin et al., 2002; Jina & Thomas, 2013; Rees et al., 2011; Zinzow et al., 2011). Sexual violence, specifically coerced or forced sex, and associated health risks among men who have sex with men (MSM) have become a recent focus of interest. The prevalence of forced sex among MSM is estimated to range from 9 % in Japan (Hidaka et al., 2014) to 26 % in the Côte d'Ivoire and Thailand (Hakim et al., 2015; van Griensven et al., 2004). Cross-sectional surveys of young and adult MSM have found forced sex at an early age to be associated with HIV and sexually transmitted infection risk and high-risk sexual behaviors, including unprotected anal sex, multiple sex partners, and sex work (Bartholow et al., 1994; Boroughs et al., 2015; Defechereux et al., 2015; Lloyd & Operario, 2012; Sabidó et al., 2015; van Griensven et al., 2004). In addition, MSM reporting a history of forced sex have been found to suffer from substance abuse and mental and psychological disorders (Bartholow et al., 1994; Boroughs et al., 2015; Defechereux et al., 2015; Lloyd & Operario, 2012; Sabidó et al., 2015; van Griensven et al., 2004).

MSM in Myanmar, as in many countries, face social stigma and various forms of discrimination, including limitations in economic prospects, engagement in social and governmental participation, and in full participation and acceptance in public

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activities (Lin & Van der Putten, 2012). Furthermore, discrimination of sexual and gender minorities is exacerbated by reported abusive police practices and ongoing corruption in the legal system (Chua & Gilbert, 2015). Although such laws are rarely enforced, consensual sex between adult men is punishable by a prison sentence of up to 10 years (Godwin, 2010). MSM in Myanmar, who often feel the need to hide their same-sex attraction and are fearful of engaging with the police or other legal entities, are less likely to seek redress for violations against their human rights, including crimes committed against them (Chua, 2015). Being a youth, defined as those between the ages of 15 and 24 years, may further reduce the efficacy to seek redress for sexual violence directed at them. In addition, youth experience a wide range of significant physical, psychological, and social changes, usually coinciding with the discovery of sexual attraction and identity and initiation of sex. It is during this time that youth are more likely to be inexperienced to make healthy sexual behavioral decisions and unable to seek out qualified assistance and information when needed (USAID, 2010).

Young MSM (YMSM) may be especially vulnerable because of added stigma and discrimination and increased risk disparities, including higher rates of violence directed toward them, compared to non-MSM youth and adult MSM (Guadamuz et al., 2011; Mustanski, Garofalo, Herrick, & Donenberg, 2007; Newcomb & Mustanski, 2014; Saewyc, 2011). YMSM may not feel comfortable disclosing their sexual identity and risky sexual behaviors because of their dependence on family for economic support and educational pursuits or reliance on support from teachers, law enforcement, health care providers, and others (USAID, 2010). YMSM, as well as other vulnerable populations, are more likely to require sexual assault services including access to post-exposure prophylaxis (Delany-Moretlwe et al., 2015); however, concerns about having to reveal their same-sex attraction result in barriers to accessing the needed services.

Prevalence of forced sex may differ based on MSMs' sexual identities or classifications (Guadamuz et al., 2011). Myanmar culture uses local terms to denote sexual attractions, behaviors, gender expressions, and identities. MSM in Myanmar are typically classified into three groups: Apone ("hider"), Apwint ("open"), and Tha Nge ("guy"), reflecting distinctions made based on varying degrees of masculinity and femininity in gender expression (Chua & Gilbert, 2015; Population Services International, 2007; Three Diseases Fund, 2011). Apone are biological males whose identity may be either masculine or feminine, but maintain masculine presentation in their outward dress and behavior and tend to not be open about their same-sex attractions. They are more likely to also have relationships with females and to have nuclear families, and, in some cases, maintain these relationships to hide their same-sex attractions. Apwint are biological males whose identity and expression are feminine, and include persons who may have transitioned and undergone sex-reassignment surgery; however this number is estimated to be low in Myanmar (Burnet Institute, 2015). Tha Nge present as masculine in their outward dress and behavior and may have sex with both males and females. Their male sex partners are often Apwint or Apone, and they are believed to primarily play an insertive role in anal sex. Apwint and Apone are generally understood as transgender categories, although they are presently considered as part of a larger MSM group in the Myanmar context.

Although forced sex has been found to cause adverse health and mental health outcomes, including increased risk of HIV infection (Bartholow et al., 1994; Lloyd & Operario, 2012), the prevalence and associations of forced sex among YMSM in Myanmar have not been investigated. This paper presents findings from a sexual risk behavior survey of YMSM conducted in Yangon and Monywa, Myanmar. Yangon, the largest and most populous city located in the lower part of Myanmar, and Monywa, located in the central part, both have increasing HIV prevalence among MSM (Aung, Paw, Aye, & McFarland, 2014; Ministry of Health Myanmar, 2012) and known active MSM networks (Aung, McFarland, Paw, & Hetherington, 2013). Findings from this research will assist in the development of youth-centered HIV prevention and intervention programs, including those targeting MSM and transgender people in Myanmar.

Method

Participants

Between 2013 and 2014, surveys were conducted among 200 YMSM in Yangon and 200 in Monywa using respondent-driven sampling (RDS) (Heckathorn, 1997; Johnston, 2013). A conservative estimate of 50 % condom use at last sex, a confidence level of 95 %, a precision of 0.1 and a design effect of 2 were used to calculate a sample size of 192 for each city (rounded up to 200). Eligible participants were between the ages of 15 and 24 years, who had same-sex attraction and/or sexual behaviors and/or practices which fall under one of the three classifications identified in Myanmar culture: Apone, Apwint or Tha Nge. The age range of 15–24 years is that defined as youth by the United Nations (United Nations Department of Economic and Social Affairs, 2011).

Recruitment for each survey began with a small number of purposefully selected eligible members of the target population, referred to as "seeds." Seeds, selected through nongovernmental organizations, were selected based on having diverse characteristics and large social networks. Upon completing the screening for group membership and eligibility, informed consent, and a face-to-face interviewer-administered questionnaire with trained staff in Myanmar language, seeds received up to three coupons to use in recruiting eligible YMSM peers. This process continued until the sample size was attained. Participants were provided an incentive of 2000 Ks (US $2) for participation and 1500 Ks (US $1.50) for each peer who enrolled in the survey. Data collection took place at youth-focused drop-in centers, namely

the "Blue Star" center run by Marie Stopes International in Yangon and "Top Center" run by Population Services International in Monywa. Interviews were conducted in private rooms, or within a large hall at a distance from other individuals. These interview sites, open between 9:00 am to 4:30 pm on two weekdays and one weekend day, were selected because of their experience with and ability to provide services and referrals to MSM in Myanmar.

The survey protocols were reviewed and approved by the Ethical Review Committee of the Department of Medical Research (Lower Myanmar), Yangon. As part of the consent process, all participants were provided a thorough explanation of the study objectives and process, informed that the survey was voluntary, confidential, and anonymous, and that they were free to withdraw at any time without any penalties during the survey. No personal identifying information was collected in order to ensure confidentiality for this highly stigmatized population.

Measures

Most surveys of MSM measure sexual violence as nonconsensual sexual intercourse or forced sex; many surveys are not specific and describe sexual violence as unwanted sexual experiences or activity (Arreola, Neilands, Pollack, Paul, & Catania, 2008; Brennan, Hellerstedt, Ross, & Welles, 2007; Mimiaga et al., 2009; O'Leary, Purcell, Remien, & Gomez, 2003), which could potentially include nonconsensual fondling or kissing. We specifically sought self-reported prevalence of forced sex, which was measured by asking, "Have you ever been forced to have sex against your will?" (Epstein, Peake, & Medeiros, 2014). To measure social network sizes (used for weighting data), each respondent was asked to provide a number of "MSM friends" they had. The variable for employment was coded to represent regular employment, defined as having a formal arrangement with an employer which could be either part or full-time, and non-regular employment, defined as having informal and inconsistent employment.

Data Analysis

Population estimates and 95 % confidence intervals (CI) were derived using the successive sampling estimator (Gile & Handcock, 2010) in RDS Analyst (www.hpmrg.org) and adjusted for the probability of selection based on participants' self-reported social network sizes. RDS weighted estimates of both cities were aggregated and weighted by population size. Bivariate and multivariable analyses were performed on pooled data from Yangon and Monywa using individual weights from the successive sampling estimator. Variables from the bivariate analysis with $p < 0.2$ or known correlates of past experience of forced sex were candidates for entry in the final multivariable model; the final model retained only those variables significant at the $p < 0.05$ level after stepwise backward selection.

Results

Each city began with four seeds and sampled up to 200 participants. Although the eligibility included males 15–24 years, the upper age limit was increased to 28 years in order to boost recruitment. Three seeds were added to the Yangon survey in order to increase recruitment. There was a maximum of eight recruitment waves in Yangon and five recruitment waves in Monywa (Fig. 1). Self-reported mean network sizes in Yangon was 31 and in Monywa was 25. The mean age of YMSM was 23 years in Yangon and 21 years in Monywa; a higher percentage of YMSM in Yangon were between 16 and 20 years, compared to Monywa ($p < 0.01$) (Table 1). Forty-three percent in Yangon self-identified as Apwint (feminine) whereas 32 % in Monywa self-identified as Apwint (ns). Yangon had a higher percentage of YMSM who reported having a high school education or more compared to Monywa ($p < 0.01$). Most YMSM in both cities reported having a regular employment (57 %, ns), having nuclear families (68.3 % in Yangon; 86.5 % in Monywa; $p = 0.05$), and currently living with one or both parents (53 %, ns). Just over 40 % of in both cities reported having problems with family members and 41 % in Yangon and 51 % in Monywa reported that both parents accept their sexual identity or orientation (ns).

One quarter of YMSM in Yangon and 20.7 % in Monywa reported ever experiencing forced sex (ns). The mean age at which YMSM reported experiencing forced sex in both cities was 17 years (median: 18 in Yangon; 16 in Monywa; range: 5–26 years). Pre-survey qualitative data gained through informal discussions with YMSM in Yangon and Monywa indicate that perpetrators of forced sex include older male acquaintances, friends, or senior colleagues at work (personal communication, 2nd author).

Close to 30 % of YMSM in both cities reported never using alcohol, and approximately 32 % reported currently participating in either a youth organization or in a religious organization (ns). Most in both cities reported having a role model (70.6 %) and having MSM friends with many sexual partners (81.4 %, ns). Forty-three percent in both cities reported having more than one partner in the past one month. A higher percentage of YMSM in Yangon (14.2 %) compared to Monywa (4.2 %) were aware of their sexual attraction to males at the age of ten or below ($p = 0.03$). Over 80 % of YMSM in both cities reported their first sexual partner to be male, and just over 55 % reported having more than one sexual partner in the previous month.

Bivariate and multivariable odds ratios for the outcome of ever experiencing forced sex are presented in Table 2. When tested individually (bivariate), YMSM type, having a problem with family members, parental acceptance, having an MSM friend with many partners, having more than one partner in the past one month, age of awareness of same-sex attraction, and type of partner at first sex were all statistically significantly associated with experiencing forced sex at the $p < 0.05$ or below

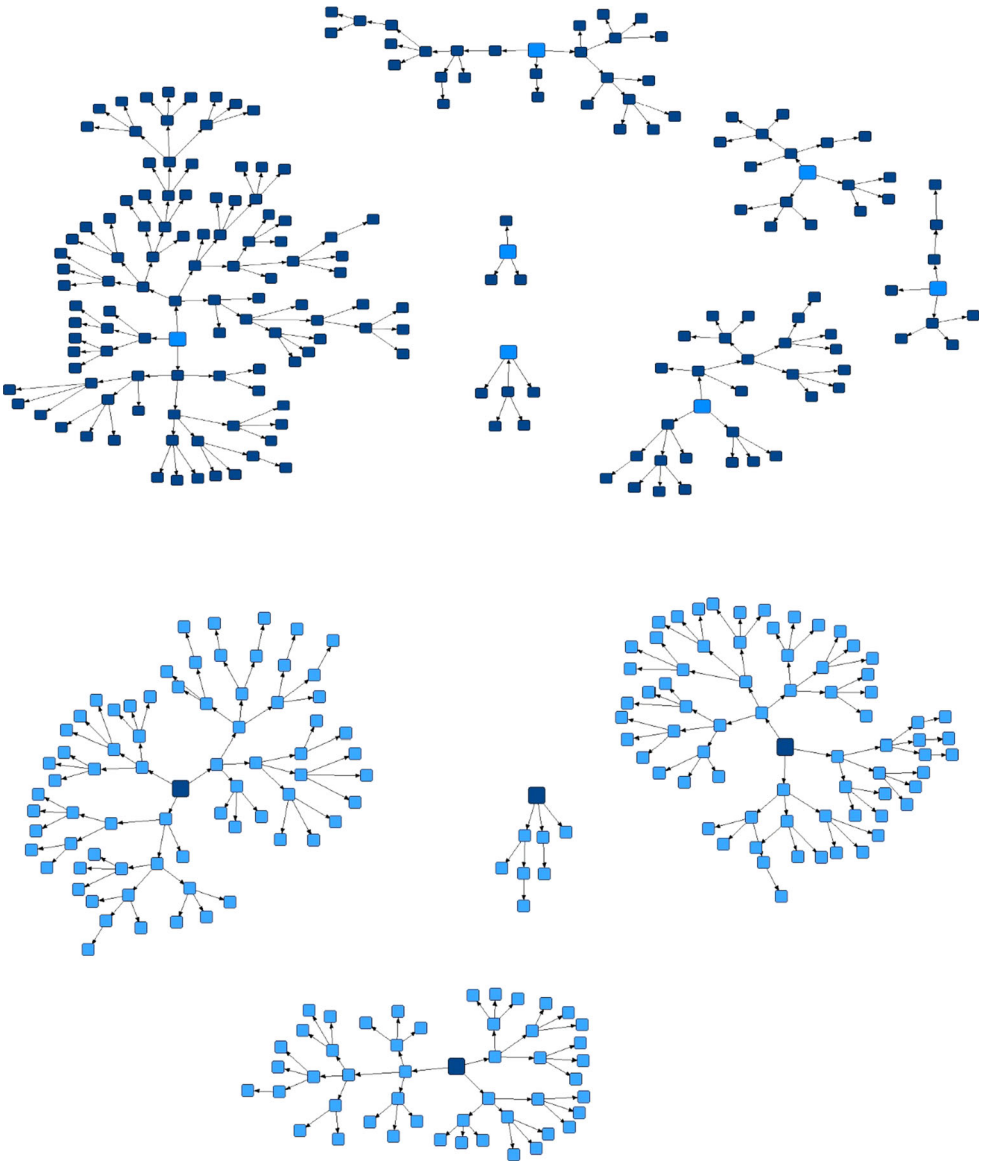

Fig. 1 Recruitment graphics of Yangon (*above*) and Monywa (*below*) with seeds in larger node sizes and recruits in smaller node sizes

level. Compared to Apone, Tha Nge (masculine MSM type) had 84 % lower odds of experiencing forced sex ($p < 0.01$). YMSM who reported problems with family members had over twice the odds of experiencing forced sex than those who reported no problems ($p < 0.05$). Trends in the association between parental acceptance and experiences of forced sex changed when adjusted by other variables, but alone, youth who were rejected for being attracted to the same sex by either parent had 65 % lower odds of experiencing forced sex compared to those who were accepted by both parents, while YMSM who did not know whether their parents accepted or rejected them had over ten times higher odds of experiencing forced sex ($p < 0.05$). YMSM who had MSM friends with many partners had 31 times higher odds ($p < 0.001$) and those who had more than one partner in the past month had 2.5 higher odds ($p < 0.01$) of experiencing forced sex than those who did not. YMSM who had become aware of their same-sex attraction at or above the age of 16 had 89 % lower odds of experiencing forced sex compared to those who became aware at or below the age of ten ($p < 0.001$). Finally, YMSM who had a female partner at their first sex had 83 % lower odds of experiencing forced sex compared to youth who had a male partner at first sex ($p < 0.01$).

When all variables that were significant at the $p < 0.2$ level were combined into a multiple logistic regression, having problems with family members, parental acceptance, having an MSM friend with many partners, and age of awareness of same-sex attraction remained significant in the adjusted model at the $p < 0.05$ or below level. YMSM who had problems with family members had over twice the adjusted odds of experiencing forced sex compared to those with no family problems ($p < 0.05$). YMSM who were accepted for their sexual attraction only by their mother (compared to those accepted by both parents) had

Table 1 Population estimates and 95 % confidence intervals of demographic, risk, and protective behavior variables among YMSM in Yangon and Monywa, Myanmar, 2013–2014

	Yangon $N = 200$		Monywa $N = 200$		Aggregated estimates	p value
	n	% (95% CI)	n	% (95% CI)	%	p
Age (years)						
Median	200	21 (range: 16–26)		23 (range: 16–28)	–	–
16–20	59	44.9 (34.3, 55.5)		26.4 (18.8, 33.9)	43.05	0.01
21–24	83	41.2 (31.2, 51.2)		47.0 (37.0, 57.0)	41.78	ns
25–28	58	13.9 (8.8, 19.0)		26.6 (18.0, 35.3)	15.17	0.06
Self-identity						
Apone	53	24.0 (14.1, 33.8)	54	30.0 (19.7, 40.3)	24.6	ns
Apwint	116	42.9 (27.0, 58.8)	96	31.9 (23.5, 40.3)	41.8	ns
Tha Nge	31	33.1 (14.0, 52.3)	50	38.1 (27.6, 48.7)	33.6	ns
Education level						
≤Middle school	66	31.8 (22.0, 41.6)	116	63.4 (54.0, 72.8)	35.0	0.01
≥ High school	134	68.2 (58.4, 78.0)	84	36.6 (27.2, 45.0)	65.0	0.01
Employment status						
Regular	126	55.8 (43.3, 68.3)	131	69.6 (61.2, 77.1)	57.2	ns
Nonregular	46	17.8 (11.1, 24.5)	51	19.5 (13.5, 25.4)	18.0	ns
No employment	28	26.4 (14.0, 38.8)	18	10.9 (4.2, 17.6)	24.9	ns
Type of family						
Nuclear	157	68.3 (58.2, 78.3)	173	86.5 (79.9, 92.3)	70.1	0.05
Extended	43	31.7 (21.7, 41.8)	27	13.5 (7.7, 19.3)	29.9	0.05
Any problem with family members						
Yes	89	42.4 (30.8, 54.1)	101	43.3 (33.7, 52.9)	42.5	ns
No	111	57.6 (45.9, 69.3)	99	56.7 (47.1, 66.3)	57.5	ns
Current living situation						
Live with one/both parents	97	52.5 (41.2, 63.8)	119	57.5 (47.6, 67.4)	53.0	ns
Stay at hostel/with friends/at work	51	19.0 (11.3, 26.7)	34	16.0 (10.0, 21.4)	18.7	ns
Live w/wife/partners/others	52	28.5 (18.4, 38.7)	47	26.6 (16.8, 36.3)	28.3	ns
Parents' acceptance of sexual identity/orientation						
Both accept	69	41.4 (28.7, 54.0)	71	50.6 (38.7, 62.6)	42.3	0.08
Father accepts	5	5.5 (0.0, 12.1)	6	4.9 (0.3–9.4)	5.4	ns
Mother accepts	56	34.9 (24.1, 45.8)	47	36.0 (24.3, 47.6)	35.0	ns
Neither accept	20	11.9 (5.5, 18.4)	10	6.7 (2.8, 10.6)	11.4	ns
Don't know	3	6.3 (0.0, 14.2)	3	1.8 (0.0, 3.4)	5.9	ns
Frequency of drinking alcohol						
Daily drinker	3	1.2 (0.0, 2.6)	6	2.9 (0.0, 5.8)	1.4	ns
Frequent drinker	5	2.9 (0.0, 6.5)	16	13.8 (3.9, 23.7)	4.0	ns
Occasional/social drinker	130	66.2 (56.8, 75.6)	114	55.3 (45.4, 65.1)	65.1	ns
Never	62	29.8 (20.8, 38.8)	64	28.0 (19.6, 36.5)	29.6	ns
Ever joined any youth organization						
Yes, current	52	32.2 (21.8, 42.6)	48	27.0 (16.7, 37.2)	31.7	ns
Already quit	45	17.7 (9.7, 25.7)	51	21.8 (14.9, 29.1)	18.1	ns
Never	103	50.1 (40.4, 59.8)	101	51.2 (41.3, 61.1)	50.2	ns
Ever joined any religious organization						
Yes, current	30	23.5 (14.1, 32.8)	44	27.1 (18.1, 35.9)	32.0	ns
Already quit	58	16.6 (10.6, 22.6)	48	18.9 (12.5, 25.2)	16.8	ns
Never	112	59.9 (49.6, 70.3)	108	54.1 (44.7, 63.4)	23.3	ns

Table 1 continued

	Yangon $N=200$		Monywa $N=200$		Aggregated estimates	p value
	n	% (95% CI)	n	% (95% CI)	%	p
Has a role model						
Yes	166	70.7 (59.9, 81.5)	159	69.9 (59.3, 79.7)	70.6	ns
No	34	29.3 (18.5, 40.1)	41	30.1 (19.4, 40.7)	29.4	ns
Have MSM friends with many partners						
Yes	183	83.0 (74.2, 91.7)	169	67.3 (56.4, 78.5)	81.4	0.08
No	17	17.0 (8.3, 25.8)	31	32.7 (21.5, 44.0)	18.6	0.08
Age of awareness of same sex attraction (years)						
≤ 10	35	14.2 (7.1, 21.3)	17	4.2 (2.1, 6.3)	13.2	0.03
11–15	79	32.6 (22.8, 42.3)	83	37.6 (28.6, 46.1)	33.1	ns
≥ 16	86	53.3 (42.5, 64.0)	100	58.2 (48.3, 67.6)	53.8	ns
Sex of partner at first sex						
Male	187	86.5 (75.6, 97.4)	181	82.7 (72.7, 92.8)	86.1	ns
Female	10	13.5 (2.6, 24.4)	19	17.3 (7.1, 27.3)	13.9	ns
Number of sexual partners in past month						
One	67	42.4 (31.0, 53.8)	79	44.1 (33.8, 54.5)	42.6	ns
More than one	100	57.6 (46.2, 69.0)	88	55.9 (45.5, 66.2)	57.4	ns
Ever experienced forced sex						
Yes	57	24.5 (15.8, 33.2)	52	20.7 (12.0, 28.1)	24.1	ns
No	140	75.5 (66.8, 84.2)	148	79.4 (60.7, 86.8)	75.9	ns

63 % lower adjusted odds of experiencing forced sex ($p<0.05$). YMSM who had any MSM friends with many partners had 19 times higher adjusted odds of experiencing forced sex than those who did not ($p<0.001$). Finally, YMSM who became aware of their same-sex attraction at or above the age of 16 had 85 % lower odds of experiencing forced sex compared to those who became aware at or below the age of ten ($p<0.001$).

Discussion

This is the first study identifying the prevalence and correlates of forced sex among YMSM in Myanmar. Our estimate that 24 % of YMSM had ever experienced forced sex was consistent with regional results, including a 2002 survey of vocational school students in the Northern area of Thailand, which found that 25.9 % (van Griensven et al., 2004) of YMSM had experienced forced sex, as well as another study conducted in 2005 in multiple cities in Thailand, which found that 18 % of MSM had experienced forced sex (Guadamuz et al., 2011). Given the high prevalence of forced sex, there is an urgent need for further research of, as well as intervention for, young populations of MSM.

Odds of experiencing forced sex varied by type of YMSM, with Tha Nge youth having significantly lower odds of experiencing forced sex in comparison to Apone youth. While this study did not specifically assess gender nonconforming behavior, it may be that Tha Nge adhere more to the male heterosexual role in terms of sexual role expectations and relationship power, and are therefore less subject to sexual pressure (Todd & Gregory, 2005). Although speculative, this could also explain why Apwint, who conform least to gender norms of masculinity, were most likely to report having ever experienced forced sex. Other research in Myanmar suggests that Apone are typically not open about their same-sex attraction, which has been shown to increase the frequency and riskiness of sexual encounters including unprotected, receptive anal sex (Population Services International, 2007). Other research in the United States found gender-role nonconforming behavior to be significantly associated with being subjected to bullying and other physical victimization from peers (Friedman, Koeske, Silvestre, Korr, & Sites, 2006). To assess further associations, we regressed forced sex using Apwint as the dependent variable but found no significant associations compared to Apone or Tha Nge. More research on the cultural meanings of these identities, gender norms around masculinity, and the links with sexual violence and sexual risk would be useful.

We found that odds of experiencing forced sex decreased if the individual became aware of their same-sex attraction at or above the age of 16 years. Although we did not ask participants whether their first sexual encounters were consensual, large proportions of YMSM in other countries report sexual violence as part of their first sexual encounter (Guadamuz et al., 2011; Nasrullah, Oraka, Chavez, Valverde, & DiNenno, 2015). The finding that YMSM who had a female partner at their first

Table 2 Bivariate and multivariable odds ratios (OR) and 95 % confidence intervals (95 % CI) of experiencing forced sex among YMSM who have ever had sex, pooled from Yangon and Monywa, Myanmar, 2013–2014

	Odds of experiencing forced sex $N = 397$	
	Unadjusted OR (95 % CI)	Adjusted OR (95 % CI)
Self-identity (ref. Apone)		
Apwint	1.41 (0.61, 3.25)	
Tha Nge	0.16 (0.05, 0.49)**	
Age (ref. ≤ 20)		
21 to 24	1.19 (0.50, 2.82)	
≥ 25	1.11 (0.45, 2.77)	
Education level (ref. ≤ Middle school)		
≥ High school	0.70 (0.35, 1.40)	
Employment status (ref. Regular employment)		
Nonregular	1.38 (0.69, 2.78)	
No employment	0.68 (0.20, 2.92)	
Type of family (ref. Nuclear)		
Extended	1.32 (0.58, 3.04)	
Problem with family members (ref. No)		
Yes	2.35 (1.17, 4.74)*	2.10 (1.06, 4.18)*
Current living situation (ref. Live with one/both parents)		
Stay at friends/hostel/work	2.27 (0.98, 5.25)	
Live with stable partner/wife	0.68 (0.30, 1.53)	
Parental acceptance of same sex attraction^ (ref. both accept)		
Father accepts	0.73 (0.13, 3.96)	1.02 (0.21, 4.93)
Mother accepts	0.56 (0.24, 1.31)	0.37 (0.15, 0.93)*
Neither accept	0.35 (0.16, 0.78)*	0.51 (0.22, 1.19)
Don't know	10.51 (1.25, 88.11)*	5.10 (0.65, 40.06)
Ever drink alcohol (ref. No)		
Yes	0.93 (0.45, 1.90)	
Involvement in youth or religious organization (ref. Never)		
Previously	1.03 (0.44, 2.39)	
Currently	0.99 (0.44, 2.23)	
Have role model (ref. No)		
Yes	2.92 (0.86, 9.89)	
Have MSM friends with many partners (ref. No)		
Yes	31.49 (6.52, 151.96)***	19.12 (3.82, 95.77)***
Age of awareness of same sex attraction (ref. ≤ 10)		
11–15	0.46 (0.17, 1.21)	0.49 (0.18, 1.32)
≥ 16	0.11 (0.04, 0.28)***	0.15 (0.06, 0.39)***
More than one partner in the past one month (ref. No)		
Yes	2.5 (1.3, 4.9)**	
Type of partner at first sex (ref. male)		
Female	0.17 (0.04, 0.63)**	

Variables in italics are significant at the $p < 0.2$ level in the bivariate model and were included in the initial adjusted model

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ^ Coded as "neither accept" if parents were unaware of status

sex had significantly lower odds of experiencing forced sex compared to youth who had a male partner at first sex could indicate that forced sex by males occurs during initial sexual encounters. For instance, in surveys conducted in four cities in the Philippines nearly half of all MSM said their first encounter with a man had been forced (Pedroso, Sasota, & Tacardon, 2010). Further research is needed to determine if a similar dynamic exists in Myanmar. Globally, as in Myanmar, many school-based

programs do not acknowledge or address issues of same-sex attraction or behaviors (USAID, 2010). These findings highlight the need for developmentally appropriate information and education to be provided from an early age, focusing on skills-based risk reduction for all forms of sexual behaviors including anal sex. Teachers, health providers, mentors, and others who work with youth, must be sensitized to the realities of forced sex among young boys and instrumental in developing and referring victims to appropriate health and protection services. Healthcare workers also need operational guidance and training to meet the psychosocial and physical needs of those affected, and to encourage safe sexual practices for future encounters. Venue-based sexual violence prevention interventions could also be integrated into venue-based HIV prevention programs, as has been recommended in other studies (Peitzmeier et al., 2015).

We found that parents played a significant role in the risk and prevention of forced sex among YMSM in Myanmar, though the nature of this role is unclear. YMSM who had problems with family members had over twice the adjusted odds of experiencing forced sex compared to those with no family problems, indicating that family problems may increase vulnerability to forced sex. For YMSM in particular, this could mean that they have been rejected from their families on account of their same-sex attraction. Similarly, in the bivariate analysis, YMSM who did not know if their parents accepted their same sex attraction had higher odds of experiencing forced sex compared to those why were accepted by both parents. YMSM who did not know if parents accept their same sex attraction may not be receiving family support and guidance about making safe decisions about sex and other potentially risky behaviors. Studies in western countries have found increased risk behaviors, depression, and stress among YMSM as a result of not disclosing their same sex attraction to parents (Corrigan & Matthews, 2009; Rothman, Sullivan, Keyes, & Boehmer, 2012) and that family support and acceptance of same sex attraction are important to the psychological development of YMSM (Elizur & Ziv, 2001). However, at the same time our findings indicated that parental acceptance was not protective. One explanation is that those YMSM who are accepted by their parents may be more open about their same-sex attraction at a younger age, thereby increasing their vulnerability. Given that connectedness with parents is a protective factor affecting the reproductive health of young persons, and is supported in the WHO risk and protective framework (WHO, 2004), the lack of clarity on this point should be resolved through further research of which types of family dynamics affect YMSMs' vulnerability to forced sex and other risk behaviors.

Having MSM friends with many sexual partners was shown to increase odds of forced sex among YMSM in Myanmar in the multivariable regression. It may be that MSM with friends with many sexual partners have many sex partners themselves, thereby introducing additional exposure to the possibility of forced sex. This survey also found in the bivariate regression that YMSM with more than one sexual partner in the past month had higher odds of forced sex. This was also found in a survey conducted among Thai MSM (Guadamuz et al., 2011). Unfortunately, our survey neither defined "many" nor specified whether the number of sexual partners in the past month were female or male. In addition, given that almost half of YMSM in Myanmar reported multiple (>1) sexual partners in the last month, it would have been useful to know whether these YMSM were exchanging sex for money which has also been found to be a risk factor for forced sex (Guadamuz et al., 2011) and child sexual violence (Kalichman, Gore-Felton, Benotsch, Cage, & Rompa, 2004). Focused research among YMSM in Myanmar is needed to assess specific sexual risks associated with forced sex.

This survey had several limitations. The first is the categorization of YMSM. Although the three classifications for types of MSM are well-known among MSM populations in Myanmar, it is not clear whether all YMSM would classify themselves as belonging to one of the groups. In addition, it is not known whether each of these groups is mutually exclusive; some YMSM may not perceive themselves as fitting in one specific group. The second limitation of this study was the lack of geographic restrictions within the eligibility criteria. This means that people from outside these major cities or those that had recently moved may have been included, even though their experiences would not be reflective of that city. Furthermore, this impacted the accuracy of the social network size data, which relies on specific eligibility criteria. The social network size data (used to weight the data) should include all elements of the eligibility (Johnston, 2013). However, in this survey, it did not. Nevertheless, we assume that the network size data, although not precise, are proportional between subjects and sufficiently identifies those with large vs. those with small social networks. In addition, some important terms and variables were not clearly defined including the meaning and type of forced sex, a clear definition of sex (e.g., penetrative, oral), and the meaning of "many." In addition, RDS relies on long recruitment chains to minimize the bias from the nonrandomly selected seeds, and the small number of waves in the Monywa sample may have been insufficient to eliminate this bias. Self-reported identification of behaviors with possible recall bias may also limit the study findings. Finally, these studies did not include tests to identify the presence of HIV or other sexually transmitted infections. These could be incorporated into future studies to link risk factors directly to disease outcomes rather than using proxy indicators such as forced sex.

Our research is the first systematic estimate of forced sex among populations of YMSM in Myanmar, and one of the first such studies in the region. Based on 2014 HIV Sentinel Sero-Surveillance in Myanmar, HIV prevalence among YMSM is 4 %, and among MSM of all ages is almost 7 % (National AIDS Control Programme, 2015). Understanding the social and sexual

risk and protective factors among MSM is critical to informing HIV prevention and sexual health programs. Myanmar would benefit from adopting some existing approaches used in other settings to strengthen legal and social responses to prevent sexual violence among MSM. However, given the current level of stigma toward MSM and low funding for MSM-targeted services and intervention, progress may be slow. As shown to be helpful in other settings, expansion of education through MSM peer networks with linkages to social and health services and targeted multimedia campaigns would reduce stigma as well as improve the lives of YMSM in Myanmar (USAID, 2010).

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Compliance with Ethical Standards

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