



Integrated
Biological

and

Behavioral Survey
of Male to Female
Transgender
Population in
Cambodia, 2012

Prepared by **fhi360**

Released 2014



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ACRONYMS

ACASI	Audio-Computer Assisted Survey Instrument
B-CoPCT	Boosted Continuum of Prevention, Care and Treatment
CSSD	Cooperation for Social Services and Development
CWPD	Cambodia Women for Peace and Development
DIC	Drop-in-Center
HIV	Human Immunodeficiency Virus
IBBSS	Integrated Biological Behavioral and Surveillance Study
MHSS	Men's Health Social Service
MHC	Men's Health Cambodia
MSM	Men who have Sex with Men
NECHR	National Ethics Committee for Health Research
NCHADS	National Center for HIV/AIDS Dermatology and STIs
NGO	Non-governmental Organization
PEPFAR	President's Emergency Plan for AIDS Relief
PHSC	Protection of Human Subjects Committee
RDS	Respondent Driven Sampling
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
TG	Transgender
USAID	United States Agency for International Development

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The study design and field research was led by Dr. Kai-Lih Liu (FHI 360) Cambodia and Dr. Neth Sansothy, (NCHADS). This report was written by Amy Weissman, Song Ngak, Surinda Kawichai, Chhim Srean, Neth Sansothy (NCHADS), and Laurent Ferradini, from FHI 360 unless otherwise noted. FHI 360 gratefully acknowledges the assistance of the field workers of MSM/TG outreach workers who were coordinated by the following organizations: Cooperation for Social Services and Development (CSSD), Cambodia Women for Peace and Development (CWPD), KHEMARA, Men's Health Cambodia (MHC), and Men's Health Social Service (MHSS).

The study team would like to extend their sincere appreciation to Tony Lisle and Savina Ammassari, formerly of UNAIDS/Cambodia and Dr. Stephen Mills, FHI 360 for their contributions to the study design/report, as well as to all the transgender participants who took part in this study. Without them this surveillance study would not have been possible.



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EXECUTIVE SUMMARY

Background

Recognizing transgender women have a high risk of HIV acquisition, in 2012, Cambodia included transgender individuals in its Standard Operating Procedure (SOP) for the Continuum of Prevention to Care and Treatment among key populations. To support this SOP and to determine HIV status and risk behaviors, with USAID support through PEPFAR, FHI 360-PRASIT conducted a sentinel surveillance study among Cambodian transgender women. The study was conducted in six major urban centers of Cambodia (Phnom Penh, Battambang, Banteay Mean Chhey, Kampong Cham, Siem Reap and Sihanoukville), considered priority sites for HIV programming.

Methods

The integrated biological behavioral surveillance study (IBBSS) was conducted from 12 August to 15 September 2012. The study entailed the collection both of quantitative data and biological samples. Quantitative data were gathered via self-administered interviews using an Audio-Computer Assisted Survey Instrument (ACASI) on a laptop or tablet. The questionnaire was divided into eight sections: socio-demographic characteristics; access to/participation in HIV prevention programs; transgender identity and experiences; STI and HIV testing; sexual partners and sexual history; alcohol and drug use; HIV Prevention knowledge; and stigma, violence, and social support. STATA (Version 11.0 for windows, Stata Corp, TX, U.S.) was used to conduct data analysis.

HIV screening was conducted prior to the interview using the national algorithm for HIV prevalence surveillance. Participants with a reactive test were given referrals for a confirmatory test at an HIV counseling and testing site. Post-test counseling and other referrals were provided to all participants after completion of the self-administered questionnaire.

Eligible study participants were ≥ 18 years, born as a male and self-identified and/or expressed as a different gender, and reported having sex with at least one male partner in past year.

Results

The majority of the 891 participants self-identified as third gender, were young (median age 23), educated, unmarried, and employed. The majority of participants had their first sex before 18 years, 37.9% having been paid or paying for this sex. Condom use with male and female paid and unpaid partners was inconsistent. Alcohol consumption in the past three months was common, though lifetime drug use was not.

More than half of participants reported feeling likely or very likely to be at risk of acquiring HIV. The majority also reported having experienced discrimination in their life-time, and approximately one-third of participants reported having been raped and/or physically assaulted in the past 12 months.

The majority of participants had previously tested for HIV, with nearly all having been tested for HIV in the past 12 months. Among study participants, 37 tested HIV positive, representing a 4.15% HIV prevalence rate among the study population. The highest prevalence was found in Siem Reap (8.77%), and then in Phnom Penh (5.75%).

Multivariate analysis for HIV prevalence revealed that older age (>35 years), lower education (up to primary school), having sex after drug use, and inconsistent condom use during last anal sex were independently associated with HIV infection.

Recommendations

Based on the study results, the following actions are recommended.

1. For case finding purposes, older transgender should be targeted with HIV testing and counseling services.
2. To reduce HIV among transgender, it is important to:
 - » Reach transgender individuals who have low levels of education
 - » Reach transgender <18 years with HIV-related information and services
 - » Ensure programs that encourage school completion also target transgender
 - » Link young transgender to vocational training and savings and loans programs
 - » Link transgender who are minors engaging in non-volitional sex to legal aid and anti-trafficking programs
3. For effective behavior change, programs should:
 - » Recognize that transgender may have male and female partners, practice different types of sex with these partners and adjust social and behavior change messaging accordingly
 - » Segment condom use messages and strategies by: partner type and sex act; and whether the sex is transactional, and within transactional if the individual is paying or being paid
4. Programs should include the following strategies in the package of services for transgender: reducing stigma and discrimination/creating an enabling environment; strengthening sexual decision-making power; ensuring access to quality gender-based violence services
5. Programming among transgender must recognize their multiple risks and address both their sexual risk and other health harms

Conclusions

Similar to other settings, this study confirms that transgender individuals in Cambodia are at an increased risk of HIV transmission and demonstrates the urgent need for HIV prevention and access to care and treatment services for transgender individuals in Cambodia. Results led to the developed of Srey Sros, a branded peer outreach and community-based HIV testing program for transgender women. This program delivers a comprehensive package of services that address key risk behaviors identified in this study that both directly and indirectly contribute to HIV transmission.

1

Background

The term gender identity refers to a person's basic sense of self, of identifying as male, female, or some other gender (e.g., transgender, bi-gender, intersex). Transgender refers to people whose gender identity does not conform to norms and expectations traditionally associated with a binary classification of gender based on external genitalia, or, more simply, their sex assigned at birth [4].

BACKGROUND

Transgender women (sometimes referred to as male-to-female transgender, and hereafter referred to as transgender) have a high risk of HIV transmission globally [1-3]. Research demonstrates that transgender (TG) – those who engage in transactional sex and those who do not – have higher HIV prevalence rates than male or female sex workers [3]. According to a recent systematic review and meta-analysis, transgender carry a very high burden of HIV with a pooled prevalence of 19.1% across 15 countries, five of which were in Asia [1]. Sites with the highest HIV prevalence were India, Argentina, Peru, and Indonesia, suggesting that transgender are a high priority population group for intensive combination prevention interventions and access to ARV treatment

Although transgender share similar risk factors with men who have sex with men (MSM) – unprotected receptive anal intercourse – this population faces additional and distinct risks and sexual health needs at multiple levels of the socio-ecological environment: 1) individual, including depression, substance use, illicit hormone and silicon injections, 2) community, such as lack of social support and social exclusion, and 3) structural and cultural, for example, limited economic opportunities, limited access to services, and stigma and discrimination [1, 2]. These risks and needs suggest that it is essential for transgender to be considered a distinct population, separate from MSM, as well as for the design and implementation of transgender-specific programs and services [5].

In Cambodia, historically little has been known about transgender. Transgender have primarily been included in HIV programs targeting MSM, which has meant that their needs had often gone unmet. Although gender norms and gender roles are strongly defined in Cambodia, sexual and gender identities are fluid and diverse and do not always reflect sexual practice [6, 7]. This situation can be at least partly attributable to the stigma and discrimination transgender and MSM face. According to a qualitative study conducted in 2003, transgender commonly reported experiencing verbal

and physical abuse and that their gender identity limited their employment opportunities ^[8]. These findings were again affirmed in a 2010 study that highlights the need to end discrimination ^[9].

Similar to the global situation, transgender in Cambodia have an elevated risk of HIV acquisition. According to a 2005 study of sexually transmitted infections (STIs), transgender had an HIV prevalence of 9.8% ^[10]. According to a 2010 study conducted among high risk men in seven provinces, transgender participants had a prevalence of 2.6% ^[11]. Transgender also had high rates of sexually transmitted infections (STIs) (27%), including rectal or urethral chlamydia, gonorrhea, or syphilis. ^[10].

Transgender also appear to have high risk practices. According to the 2007 Behavioral Sentinel Surveillance, 60% of transgender ever sold sex, and among all who had sold sex ^[12]. Further, the first sexual partner of transgender usually a man (93%), compared to, for instance, MSM, for whom it was more often a woman (56%). Transgender also reported inconsistent condom use with all sexual partners ^[12].

Recognizing the importance of reaching transgender with HIV services, in 2013, National Center for HIV/AIDS Dermatology and STIs (NCHADS) produced a Boosted Continuum of Prevention, Care and Treatment (B-CoPCT) Standard Operating Procedure (SOP) in which transgender were included as one of four key at-risk populations in country ^[13]. Building on this new SOP and to inform appropriate targeting and service delivery for transgender, FHI 360 through the PRASIT project, with support from the President's Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID), conducted this integrated biological behavioral and surveillance study (IBBS).

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*Population
Definition*

POPULATION DEFINITION

According to NCHADS, as defined in the B-CoPCT SOP, “transgender is an umbrella term for individuals whose gender identity and expression does not conform to norms and expectations traditionally associated with their sex assigned at birth. Transgender people may self-identify as transgender, female, male, trans-woman or trans-man, transsexual, or other culturally specific transgender identities, and may express their gender(s) in a variety of masculine, feminine and/or androgynous ways.”

Although this study was designed prior to the finalization of the Boosted CoPCT SOP, it utilized a similar definition: “a person who was born as a male and self-identifies and/or expresses themselves as a different gender identity.” Because the transgender population comprises diverse individuals who identify and express themselves in diverse ways, Table 1 presents the five categories of people considered to be transgender in this study (cells 1-5) and those who are not (cell 6).

Table 1. Categories of transgender included in the study

Self-identified gender			
Female	Third Gender	Male	
Yes ^[1]	Yes ^[2]	Yes ^[5]	Feminine appearance?* Yes (always/occasionally)
Yes ^[3]	Yes ^[4]	No ^[6]	Feminine appearance?* No

* refers to those who sometimes or always dressed as a female or displayed feminine characteristics

Key:

- [1] Self-identified as female with feminine appearance
- [2] Self-identified as third gender with feminine appearance
- [3] Self-identified as female without feminine appearance
- [4] Self-identified as third gender without feminine appearance
- [5] Self-identified as male with feminine appearance occasionally
- [6] Self-identified as male without feminine appearance

3

Methods

METHODS

Overview

The integrated biological behavioral surveillance study (IBBSS) was conducted from 12 August to 15 September 2012 in six cities across Cambodia—Phnom Penh, Battambang, Banteay Mean Chhey, Kampong Cham, Siem Reap and Sihanoukville—identified by the National Center for HIV/AIDS, Dermatology and STD (NCHADS) as priority sites for HIV.

The objectives of this IBBSS were to:

1. Determine the HIV status and HIV testing history in a sample of transgender people;
2. Examine the range of sexual risk behaviors in a sample of transgender people.

Eligible participants were ≥ 18 years, born as a male and self-identified and/or expressed themselves as a different gender (pre- and post-operative individuals included)¹, and reported having sex with at least one male partner in past year.

The study protocol was approved by the National Ethics Committee for Health Research (NECHR) in Cambodia and the FHI 360 Ethical Committee, called the Protection of Human Subjects Committee (PHSC).

Respondent Driven Sampling (RDS) and population studied

Study participants were recruited using Respondent Driven Sampling (RDS). In each study city, two to three 'seeds' meeting the study eligibility age (≥ 18 years) and known to have a strong social network, defined as those with 10 or more transgender friends, were selected. These first seeds were identified by NGO Community or Peer Facilitators who conduct HIV prevention outreach among transgender, and referred to the study team. Each seed was given two coupons and asked to refer two transgender individuals. Each seed was expected to expand to five to six recruitment waves in each city in order to reach saturation. Referred individuals were again screened by field interviewers, ensuring their eligibility and desire to participate in the study.

¹This is similar to the UNAIDS definition of transgender as: A transgender person has a gender identity that is different from his or her sex at birth. Transgender people may be male to female (female appearance) or female to male (male appearance). (UNAIDS, 2011. Terminology guidelines. Geneva: UNAIDS.) However, the IBBSS study in Cambodia only included male to female transgender.

HIV testing

HIV screening was conducted prior to the interview using the national algorithm for HIV prevalence surveillance (see below). The national guidelines for HIV testing in surveillance recommend a combination of two assays be used for all sentinel groups, regardless of HIV prevalence. Rapid testing was performed on site when the participants were interviewed. A parallel two-test algorithm of Determine™ and Stat-Pak™ assays was used, and all specimens were tested using both assays. Determine™ HIV-1/2, an immunochromatographic rapid assay, was used as the first test in the algorithm. The results for specimens reactive by Determine™ and non-reactive by Stat-Pak™ were considered HIV negative. If non-reactive by Determine™ and reactive by Stat-Pak™, both tests were repeated. Only if two or more results were reactive were the results considered positive. A tie-breaker test was not conducted as part of the study because such tests are only allowed to be done in VCT clinics. However, participants with a reactive test were given referrals for a confirmatory test at an HIV counseling and testing site. Post-test counseling and other referrals were provided to all participants after completion of the self-administered questionnaire.

For quality control, additional blood was collected on 5-spot DBS card from 20% of participants following enrollment order in each city. Quality control testing entailed testing with one enzymeimmunoassay (EIA), e.g., Vironostika™ HIV Uni-Form II Plus O® (Organon Teknika), and if positive, the sample was retested with Murex™ HIV-1.2.O EIA (Abbott Diagnostics). Quality control was conducted in the NCHADS laboratory and results were compared with those of the rapid HIV testing conducted in the field.

Data collection and management

Quantitative data and biological samples were gathered in existing drop-in-centers run by local non-governmental organizations. Quantitative data were gathered via self-administered interviews using an Audio-Computer Assisted Survey Instrument (ACASI) on a laptop or tablet. The questionnaire was divided into eight sections: socio-demographic characteristics; access to/participation in HIV prevention programs; transgender identity and experiences; STI and HIV testing; sexual partners and sexual history; alcohol and drug use; HIV Prevention knowledge; and stigma, violence, and social support. Questions were programmed into a tablet interface with an optional audio recording of all questions and corresponding choices for participants who had difficulty reading. As a self-administered questionnaire, participants selected their own answers, ensuring the anonymity of their responses.

Statistical analysis

STATA (Version 11.0 for windows, Stata Corp, TX, U.S.) was used to conduct data analysis. HIV prevalence was determined by dividing the number of participants who tested HIV positive by the total number of participants tested in this study and multiplied by 100. Descriptive statistics, percent distributions, the Chi-square test, odds ratios (ORs) and 95% confidence intervals (CIs), and logistic regression were used as data analysis techniques. Bivariate association between HIV prevalence and risk factors were evaluated using odds ratios (OR) and 95% confidence intervals (CI). Variables with $P \leq 0.05$ in bivariate analyses or substantive importance were further analyzed using multivariate logistic regression. Backward one by one elimination of the variable that has highest p-value and greater than 0.05 logistic regression was used to identify independent risk factors associated with HIV infection. Variables were considered significant at $P < 0.05$ (two-tailed).

4

Results

RESULTS

Overall, 891 participants fulfilled the eligibility criteria and were enrolled in the study to be tested for HIV and to answer to the self-administered questionnaire using ACASI.

Socio-demographic characteristics

Among the 891 participants, the majority self-identified as third gender (68%), followed by female (25.5%), and male (5.5%). Participants had a median age of 23 years (IQR: 20-27), with nearly two thirds below 25 years (59.1%). Approximately 80% completed lower secondary school or higher, 43.4% of study participants were neither married nor living with any male partner, although 40.4% were not married but living with a male lover. Further, 90% of participants were employed (the majority of whom—29.4%—were transport workers), yet 50% of participants reported that their income did not meet their monthly expenses (data not shown). Thus study participants were in general young, educated, unmarried, and employed. Among study participants, 42.2% reported using hormones or having had sex re-assignment surgery to change their physical appearance (Table 2).

Table 2. Socio-demographic Characteristics

Variable	n (%)
Age years, Median [IQR] (N=891)	23 [20-27]
<25	527 (59.1)
25 – 29	223 (25.0)
30 – 34	89 (10.0)
35 – 44	39 (4.4)
>= 45	13 (1.5)
Gender identity	
Third sex	606 (68.0)
Female	236 (26.5)
Male	49 (5.5)

Variable	n (%)
Education (n = 794)	23 [20-27]
University & higher	141 (17.7)
Secondary	276 (34.8)
Lower secondary	222 (28.0)
Primary level	126 (15.9)
Never attended school	29 (3.6)
Current Residence	
Phnom Penh	313 (35.1)
Battambang	145 (16.3)
Banteay Meanchey	118 (13.2)
Siem Reap	114 (12.8)
Kampong Cham	99 (11.1)
Preah Sihanouk	63 (7.1)
Other	39 (4.4)
Marital status and relationship	
Not married and not living with any partner	387 (43.4)
Not married, but living with male lover	360 (40.4)
Not married, but living with female sweetheart	53 (5.9)
Married and living together	48 (5.4)
Married but not living together	22 (2.5)
Widowed, divorced or separated	21 (2.4)
Occupation	
Teacher, office worker, government, NGO staff, student	137 (15.4)
restaurant or café worker, street vendor, store seller	201 (22.6)
Transportation worker (tuk tuk, private driver)	262 (29.4)
Farmer/Fisherman	76 (8.5)
Factory worker	71 (8.0)
Other	57 (6.4)
Unemployed	87 (9.8)

Two-thirds (66%) of study participants reported drinking alcohol reported doing so in the past 3 months, 13.5% of participants reported drinking daily. Fewer participants reported ever having used drugs in their lifetime (n=188, 21.6%) and 43.1% of them had injected drugs in the past 12 months. The most commonly drugs used in the past 3 months were: Yama—an amphetamine-type stimulant (53.7), Heroin (49.5%), and ICE—another amphetamine-type stimulant (34%) (Table 3).

Table 3. Substance Use

Variable	n (%)
Alcohol use in the past 3 months (n=873)	23 [20-27]
Ever drink alcohol	588 (67.0)
Daily drink alcohol	118 (13.5)
Drug use (n=870)	
Ever used drugs	188 (21.6)
Injecting drugs in the past 12 months	81 (43.1)
Type of drug used in the past 3 months	
Used Heroin	93 (49.5)
Used Yama	101 (53.7)
Used ICE and/or Amphetamines	64 (34.0)
Did not use any drug	69 (36.7)

Sexual behavior and history

Nearly all participants (98%) reported having their first sexual experience before the age of 25, while 66.8% did so before or at 18 years of age, and 18.1% before 16 (Table 4). Participants reported that their first sexual partner was most commonly a friend/neighbor (38.8%), a sweetheart/boyfriend (35.6%), or a stranger (21.3%). The gender of this first sexual partner was most frequently male (79.9%), and then transgender (11.9%), and female (8.2%). More than one-third (37.9%) of participants were paid or paid for sex during their first sexual experience. Although more than half (58.9%) of

participants reported that they did not have sex during the 6 months prior to the study, 14.6% reported having more than 10 partners in this time period. Nearly one-third (30.5%) of participants reported having vaginal sex with a female in their lifetime and 63.2% had done so during the past 6 months, and among them, 50.3% reported having been paid for sex. The majority (85.6%) of participants reported having had anal sex with at least one male partner in their lifetime, and among them 98.1% reported having had anal sex in the past six months, nearly half of them (51.2%) having been paid for anal sex in the past 6 months.

Table 4. Sexual Behavior and History

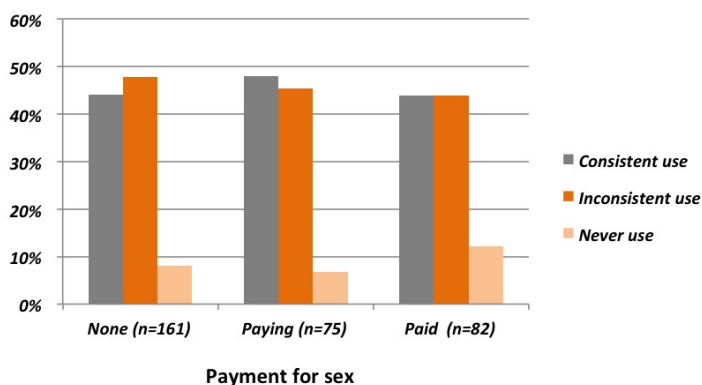
Variable	n (%)
Age at first sex (years) (n=891, median [IQR])	18 [16 – 19]
<16	161 (18.1)
16-18	434 (48.7)
19-20	181 (20.3)
21-25	98 (11.0)
> 25	17 (1.9)
Partner type at first sex (n=876)	
Friend/neighbor	340 (38.8)
Sweetheart/Boyfriend	312 (35.6)
Stranger	187(21.3)
Spouse	21 (2.4)
Family/relative	16 (1.8)
Gender of first sexual partner (n=886)	
Male	708 (79.9)
Female	73 (8.2)
Transgender	105 (11.9)

Variable	n (%)
Gender of first sexual partner (n=886)	18 [16 – 19]
Male	708 (79.9)
Female	73 (8.2)
Transgender	105 (11.9)
Payment at first sex (n=877)	
Ever had sex with women	261 (30.5)
Among them (n=261), had sex with any women during the past 6 months	165 (63.2)
Among them (n=165), got paid for sex	83 (50.3)
Sex with man (n=891)	
Ever had anal sex with man	763 (85.6)
Among them (n=763), had anal sex with any man during the past 6 months	680 (89.1)
Among them (n=680), got paid for sex in the past 6 months	348 (51.2)
Number of Commercial sexual partners during past 6 months (median [IQR])	7 [3 – 18]
None	525 (58.9)
1 --- 5	164 (18.4)
6 --- 9	72 (8.1)
>10	130 (14.6)
Condom use during the last anal sex with a man (n=763)	
Yes	640 (83.9)
No	123 (13.8)

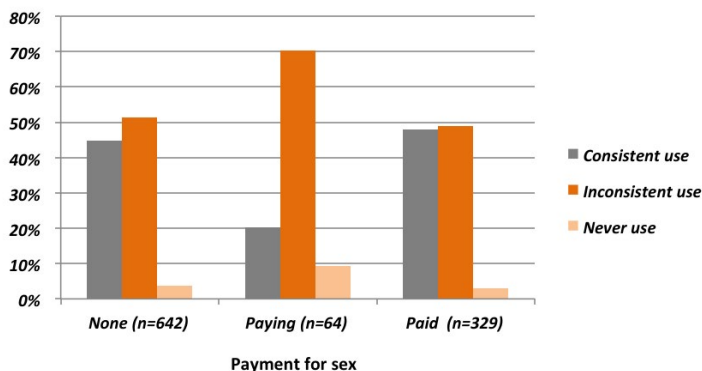
Consistent condom use with female partners was overall low, never reaching above 50% for unpaid or transactional sex (Figure 1). Overall condom use during last anal sex with a man was reportedly very high (83.9%) (Table 4). However, consistent condom use was only 20% when paying for sex, and less than 50% when paid for sex (Figure 1). Consistent condom use with female partners was higher than consistent use with male partners, regardless of transactional status (Figure 1).

Figure 1. Condom use with Partners during past 6 months by Transaction Type

A)
With female partners



B)
With male partners



More than half (55.8%) of participants who reported drinking alcohol also reported having had anal or vaginal sex after drinking (Table 5). Among those who had ever used drugs, 22.6% of Heroin users, 21.8% of Yama users, and 62.5% of ICE users reported having sex after using drugs during the past three months.

Table 5. Substance Use and Sexual Behavior

Variable	n (%)
Alcohol use and sexual activity in the past 3 months (n=561)	
Alcohol use and sexual activity in the past 3 months (n=561)	161 (18.1)
Drug use and sexual activity in the past 3 months	
Sex during/after using heroin (n=93)	21 (22.6)
Sex during/after using Yama (n=101)	22 (21.8)
Sex during/after using ICE and/or Amphetamine (n=64)	40 (62.5)
Sex during/after using any of the above drugs (n=188)	79 (42.0)

Risk Perception, Stigma and Discrimination, violence and HIV testing

More than half (55.7%) of participants reported feeling likely or very likely to be at risk of acquiring HIV (Table 6). The majority (54.8%) also reported having experienced discrimination in their life-time, and approximately 30% of participants reported having been raped and/or physically assaulted in the past 12 months. Although only 15.15% of participants reported having low self-esteem, 100% of participants answered yes to at least one question in the stigma and discrimination section of the survey (data not shown).

Table 6. HIV Risk Perception, Experience of Stigma and Discrimination and Violence

Variable	n (%)
Risk perception of acquiring HIV (n=785)	
Very likely/likely	437(55.7)
Unlikely/very unlikely	348 (44.3)
Experience of discrimination related to TG identity (n=891)	
Yes	488 (54.8)
No	403 (45.2)
Raped and/or physically assaulted in past 12 months (n=880)	
No	613 (69.7)
Yes	267 (30.3)

The majority of participants had previously tested for HIV (83.4%), with a higher majority (90.1%) having been tested for HIV in the past 12 months (Table 7). Among study participants, 37 tested HIV positive, representing a 4.15% HIV prevalence rate among the study population. The highest prevalence was found in Siem Reap (8.77%), and then in Phnom Penh (5.75%) (data not shown).

Table 7. HIV Testing History and Study HIV Prevalence

Variable	n (%)
HIV testing	
Ever tested for HIV (n=890)	742 (83.4)
Tested for HIV during the last 12 months (n=737)	664 (90.1)
Received HIV test results during the last 12 months (n=643)	613 (95.3)
Know HIV status before enrolment (n=890)	
HIV Positive	40 (4.5)
HIV negative	593 (66.6)
Don't know	100 (11.2)
Doesn't want to disclose	157 (17.6)
HIV results (n=891)	
HIV negative	854 (95.85)
HIV positive	37 (4.15)

Logistic Regression to analyze factors associated with HIV positivity among the TG participants

Univariate analysis found that age, education level, geographic location, occupation, receiving payment at first sex, number of sexual partners during the past 6 months, inconsistent condom use at last anal sex, ever using drugs or injecting drugs during the past 12 months, being assaulted in the past 12 months, risk-perception of acquiring HIV and a poor self-esteem were significantly associated with HIV infection among study participants (Table 8 and data not shown).

Multiple logistic regression analysis was performed to identify factors independently associated with HIV infection (n=645). Participants' risk-perception of acquiring HIV and their poor self-esteem were not included in the multivariate analysis as these variables represent participant's perceptions and not a behavior or an environmental factor. However, it is important to note that these factors were highly associated with HIV infection and strongly predicted the HIV status of the participants (p=0.001 and p=0.004, respectively). The final logistic regression model (Table 8) revealed that older age (adjusted OR=11.59 [3.42-38.24] for age 35-44), poor education level (adjusted OR=3.45 [1.50-7.93]), being a resident of Siem Reap (adjusted OR=4.61 [1.83-11.62]), having sex after using drug (adjusted OR=7.24 [2.30-22.81]) and inconsistent condom use during last anal sex (adjusted OR=2.78 [1.22-6.37]) were independently associated with HIV infection among study participants.

Table 8. Logistic Regression Analysis of factors associated with HIV infection among study participants (n=645)

Variables	Univariate analysis			Multivariate Model		
	#	# HIV+ (%)	Crude odds ratios (95% CIs)	p-value	Adjust odds ratios (95% CI)	p-value
Age at participation into this study						
<25	387	9 (2.33)	1		1	
25 – 29	163	10 (6.13)	2.74 (1.09, 6.89)	0.031	2.34 (0.89, 6.18)	0.084
30 – 34	65	10 (15.38)	7.64 (2.97, 19.62)	0.000	7.18 (2.63, 19.65)	0.000
35 – 44	30	6 (20.00)	10.5 (3.45, 31.94)	0.000	11.59 (3.42, 38.24)	0.000
Education						
Lower secondary – university & higher	460	14 (3.04)	1		1	
Primary & Never attending school	115	16 (13.91)	5.15 (2.43, 10.89)	0.000	3.45 (1.50, 7.93)	0.004
Missing information	70	5 (7.14)	2.45 (0.85, 7.03)	0.095	2.99 (0.94, 9.50)	0.063
Current residence						
Phnom Penh, Banteay Meanchey, Battambang, Kampong Cham, Preh Sihanoukville	556	26 (4.68)	1		1	
Siem Reap	89	9 (10.11)	2.29 (1.04, 5.07)	0.040	4.61 (1.83, 11.62)	0.001

Variables	Univariate analysis		Multivariate Model	
Occupation				
else	589	28 (4.75)	1	
Factory worker	56	7 (12.50)	2.86 (1.19, 6.89)	0.019
Drug use and sexual behavior in the past 12 months				
No drug & no injecting during & no sex after drug	548	23 (4.20)	1	1
No injecting drug and having sex after drug	30	4 (13.33)	3.51 (1.13, 10.90)	0.030
Injecting drug and no sex after drug	37	3 (8.11)	2.01 (0.58, 7.04)	0.273
Both injecting drug and having sex after/during drug use	30	5 (16.67)	4.56 (1.60, 13.01)	0.004
# of commercial sex partners (got paid and/or paid) during last 6 months				
None (0)	337	12 (3.56)	1	
1 – 5	141	9 (6.38)	1.85 (0.76, 4.49)	0.176
>5	167	14 (8.38)	2.48 (1.12, 5.48)	0.025
Condom use during the last anal sex with a man				
Yes	543	24 (4.42)	1	1
No	102	11 (10.78)	2.61 (1.24, 5.52)	0.012
Ever been physically assaulted in past 12 months				
No	495	22 (4.44)	1	
Yes	150	13 (8.67)	2.04 (1.00, 4.16)	0.050

5

Discussion and Recommendations

DISCUSSION AND RECOMMENDATIONS

Similar to other settings, this study confirms that transgender individuals in Cambodia are at an increased risk of HIV transmission. The prevalence rate among study participants (4.15%) was higher than the rate of HIV among the general population (0.7%) age 15-49 years ^[14], as well as higher than the 2010 rate among MSM: men who have sex with men and women—MSMW (2.2%), men who have sex with men only—MSMO (2.1%) and men who have sex with women only—MSW (1.6%) ^[11]. This, the first purposefully sampled transgender prevalence study, demonstrates the urgent need for HIV prevention and access to care and treatment services for transgender individuals in Cambodia ^[1, 5].

Age

Findings show older participants have higher HIV prevalence rates than younger participants. This is likely associated with a longer duration of exposure (cumulative risk over time).

Recommendation: For case finding purposes, older transgender should be targeted with HIV testing and counseling services.

Education

Findings show participants with low levels of education have higher HIV prevalence rates than more educated participants. According to a qualitative study conducted with transgender 18-29 years of age engaged in sex work in Cambodia, reasons for low levels of education included poor school performance, and stigma and discrimination faced due to gender identity ^[15].

Recommendation: To reduce HIV among transgender, it is important to:

- » Reach transgender individuals who have low levels of education
 - » Address stigma and discrimination
 - » Ensure programs that encourage school completion also target transgender.
-

Age at first sex, partners, and transaction

Participants initiated sex at a relatively young age—more than half had their first sex at or before 18 years of age, and nearly one fifth started before age 16. The majority of participants reported that their first sexual partner was a male friend/neighbor and then sweetheart/ boyfriend, that latter confirms the results of a qualitative study among transgender entertainment workers in Cambodia ^[15]. In the qualitative study, the majority of participants' first sex was consensual. Although this surveillance study did not examine the volition of participants' first sexual experience, more than one-third of participants reported that their first sex was transactional when they were not yet or just at the age of majority, with being paid for first sex independently associated with HIV infection.

Recommendation: To reduce HIV risk among transgender, programs need to:

- » Reach transgender who are below the age of 18 years with HIV-related information and services. This is ideally done through the national life skills curriculum in schools; however, community-based programs are also needed to account for school drop-out
- » Link young transgender to vocational training and savings and loans programs
- » Link transgender who are minors engaging in non-volitional sex to legal aid and anti-trafficking programs

Partner type

Also of note, approximately one third of participants reported having had sex with a female in their lifetime; however, the majority of sexual activity was with a male partner and involved anal sex, a factor found to be significantly associated with HIV infection among study participants.

Recommendation: Programs need to recognize that transgender may have male and female partners, and practice different types of sex with these partners and adjust social and behavior change messaging accordingly.

Condom use

Consistent condom use with both male and female partners was overall low among all sexually active participants; similarly low rates of condom use were reported when paid for sex with male and female partners. However, when paying for sex, consistent condom use was particularly low with male partners, while inconsistent condom use was higher than for any other category (unpaid, paid,) or partner type (male, female).

Recommendation: For effective behavior change, programs should segment condom use messages and strategies by:

- » Partner type and sex act (i.e. receptive or penetrative, although this study did not explore this practice);
 - » Whether the sex is transactional, and within transactional if the individual is paying or being paid.
-

Stigma, Discrimination and Violence

This study confirms other research, which found that Cambodian transgender individuals experience high rates of stigma and discrimination and violence ^[8, 9]. An examination of power dynamics in heterosexual relationships indicates that men tend to have greater power than women, and that these power dynamics lead to risky behaviors, such as inconsistent condom use ^[13-16]. In transgender relationships similar power dynamics exist, and a desire to be perceived as a “real woman”, and/or stigma and discrimination by the primary partner may increase transgender individuals’ risk of HIV and other health harms ^[16-19].

Recommendation: The following strategies are critical components of a package of services for transgender:

- » Reducing stigma and discrimination/creating an enabling environment
 - » Strengthening transgender individuals’ sexual decision-making power
 - » Ensuring access to quality gender-based violence services, including the Royal Government of Cambodia’s one-stop GBV service centers.
-

Multiple/Overlapping risks

Transgender in Cambodia face multiple risks—sexual, alcohol and drug use, and violence—along with persistent stigma and discrimination and high rates of poor self-esteem. These point to the existence of multiple epidemics (syndemics) among this population ^[20].

Recommendation: Programming among transgender must not only address their sexual risk, but also address these additional health harms ^[20].

6

Limitations

LIMITATIONS

Although this study makes significant contributions to understanding the HIV prevalence and risk behaviors of transgender individuals in Cambodia, there are a number of limitations.

To achieve a representative sample, RDS is dependent on the connectivity of networks, yet in Cambodia it is unknown if sub-networks are connected and therefore whether all segments of the transgender population were recruited for this study. Despite this, this study reached approximately one-third of the total number of transgender individuals identified during a 2012 size estimation study in these same provinces ^[21]. In addition, this study was conducted in six cities of Cambodia, and therefore is not representative of the entire country's transgender population.

Another limitation stems from two eligibility criteria. The first is that participants had to have had sex with a male partner in the past 12 months. This excludes not sexually active transgender and transgender who have had sex only with women. Because this was a study of HIV risk and prevalence, these limitations should not significantly affect the results. The second is that transgender less than 18 years of age were excluded due to ethical concerns, which means this study was unable to quantify the risks young transgender individuals face. This is unfortunate as the majority of participants reported having initiated sex before 18 years, suggesting that transgender less than 18 years are a priority population for HIV prevention.

7

Conclusion

CONCLUSION

This integrated biological and behavioral surveillance study among transgender in Cambodia makes important contributions, such as confirming that this population—as in other settings—has a high rate of HIV infection with unprotected anal intercourse the primary risk factor. As a result of this study and in keeping with research-to-practice principles and NCHADS' boosted CoPCT SOP, FHI 360, as part of the KHANA-led HIV Flagship project, developed a new branded peer outreach and community-based HIV testing program, Srey Sros, for transgender women. This program delivers a comprehensive package of services that address key risk behaviors identified in this study that both directly and indirectly contribute to HIV transmission.

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