Behavioural and Serological Surveillance on males having sex with males, male sex workers and hijra, 2015

TECHNICAL REPORT

Conducted by
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Directorate General of Health Services
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Foreword

Regular and updated information is essential to assess whether Bangladesh is moving in the right direction to prevent an HIV epidemic and to model the future course of the epidemic. Moreover, without these data, it has not been possible to measure the effect of the ongoing large-scale HIV prevention programs. With this background, from May to September 2015 a cross sectional survey was conducted to assess changes in risk behaviors and prevalence of HIV and active syphilis among MSM, MSW and hijra in selected sites in Bangladesh.

Male to male sexual behavior is highly stigmatized and hence hidden which is unlikely to change in the near future. For HIV prevention programmes to be able to reach more MSM, MSW and hijra alternative strategies need to be explored.

I am grateful to colleagues across government, INGO and UN for their support in putting this strategy together, special thanks to IEDCR and icddr,b for executing the behavior and serological survey. Far more importantly, however, we are all grateful to the implementing organizations and individuals who responded to the consultation which is the basis of the plan. In particular, I would like to thank the Global Fund for their financial support to conduct the survey. Finally, I am expressing my gratitude to the TC- NAC members who approved this survey report.

Hope, this survey findings will help to all concerns for developing the future program for the MSM/ MSW and Hijra population which will ultimately contribute to achieve the SDG "ending AIDS by 2030".

Dr. Md. Ehteshamul Huq Choudhury
Additional Director General (Admin)
&
Line Director, TB-L & ASP
DGHS, Mohakhali, Dhaka

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A large number of individuals participated in this survey by providing blood and giving their time in responding to questions and without their active participation this survey would not have been possible and they are therefore acknowledged gratefully.

The survey was led by a team of investigators from two research institutions. The key investigator from IEDCR was, Prof. Mahmudur Rahman. The key investigators from icddr,b were, Mr. Md. Masud Reza, Dr. Tasnim Azim, Dr. Md. Shah Alam, Dr. Sharful Islam Khan, Dr. AKM Masud Rana, Dr. Rasheda Khanam and Mr. Ahmed Shahriar.

The serological surveillance was coordinated by Dr. Md. Shah Alam. Blood specimens were tested at the Virology laboratory of icddr,b under direct supervision of Dr. Md. Safiullah Sarker and Ms. Mahmuda Khatun and the field activities of serological survey were coordinated by Mr. Ahmed Shahriar. The behavioural survey was coordinated by Mr. Masud Reza. Data have been entered by Ms. Nasima Akter, Mr. Md. Shahadat Hossain, Mr. Md. Farhad Hossain and Mr. Md. Shahaj Uddin. Data was analysed with help from Mr. Md. Sha Al Imran, Mr. Md. Aminul Islam and Mr. Md. Shahadat Hossain.

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ASP	AIDS/ STD Programme
BCC	Behaviour Change Communication
BSS	Behavioural Surveillance Surveys
BSWS	Bandhu Social Welfare Society
CBO	Community Based Organisation
DIC	Drop in Centre
ELISA	Enzyme Linked Immunosorbent Assay
Fhi360	Family Health International
FPC	Finite Population Correction
HIV	Human Immunodeficiency Virus
HPNSDP	Health, Population and Nutrition Sector Development Program
HTC	HIV Testing and Counselling
LIA	Line Immunoassay
MSM	Males Who Have Sex with Males
MSW	Male Sex Worker
NGO	Non-Government Organisation
NS	Not significant
PSU	Primary Sampling Unit
PWID	People Who Inject Drugs
RCC	Rolling Continuation Channel
RPR	Rapid Plasma Reagin
SPSS	Statistical Package of Social Sciences
STI	Sexually Transmitted Infection
TLS	Time Location Sampling
TPPA	Treponema Pallidum Particle Agglutination
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

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EXECUTIVE SUMMARY

Bangladesh has been collecting risk behaviour and HIV prevalence data on key population groups most at risk of HIV through a national surveillance system which was set up by the Govt. of Bangladesh in 1998. The design of the surveillance system in Bangladesh was based on the UNAIDS/WHO guidelines for 2nd generation HIV surveillance which aims at a flexible system so that it can be adapted to the state of the epidemic in a country and includes both serological surveillance and a behavioural surveillance surveys (BSS). The surveillance system has been crucial in providing key information that has helped Bangladesh to monitor changes in risk behaviours and infection prevalence over time, the data has been the backbone against which the national HIV strategic plans have been developed and global reports have been prepared. Regular and updated information is essential to assess whether Bangladesh is moving in the right direction to prevent an HIV epidemic and to model the future course of the epidemic. Moreover, without these data, it has not been possible to measure the effect of the ongoing large-scale HIV prevention programs.With this background, from May to September 2015 a cross sectional survey was conducted to assess changes in risk behaviours and prevalence of HIV and active syphilis among MSM, MSW and hijra in selected sites in Bangladesh.

The objectives of the survey were:

1. To determine the prevalence of HIV and active syphilis
2. To measure HIV risk behaviours
3. To determine changes in the prevalence of HIV, active syphilis and risk behaviours with the previous rounds national HIV surveillance

In Dhaka, both behavioural and serological surveillance was conducted among all groups but in Hili, only serological surveillance was conducted. Serological surveillance measured HIV prevalence among MSM, MSW and hijra at sentinel sites; syphilis was also measured as a surrogate marker to corroborate behavioural data regarding unprotected sex. Through the BSS, behaviours that carry a risk of HIV infection were evaluated. The serological surveillance and BSS were conducted in parallel in similar population groups but the individuals sampled were different, some of the inclusion criteria were different and the sampling methodologies for the two systems were also different. In this round of surveillance, the methods used for sampling in earlier rounds of serological surveillance and BSS conducted in 2013 were similar. In the serological system participants were sampled non-randomly through intervention programmes. Participants were asked to visit DICs where blood was drawn following informed consent. This was done because results of syphilis tests and free treatment for syphilis was provided in a clinical setting. Sampling for BSS, on the other hand, was random and individuals were interviewed in public venues where they gathered for soliciting sex. In total, 1,307 blood samples were collected and 1,458 risk behavioural interviews were conducted among MSM, MSW and hijra.

The data from the present surveillance among MSM, MSW and hijra showed that in Dhaka, 0.9% of the sampled hijra, 0.3% of the sampled MSM and 0.7% of the sampled MSW were HIV positive. In Hili, 4.3% of the sampled hijra were HIV positive although the number of sampled hijra was only 46 and no HIV was found among MSM and MSW. Active syphilis in all groups was below 5% in all sites. The overall prevalence of HIV from Dhaka and Hili for MSM was 0.2% (1/531), for MSW was 0.6% (3/497) and for hijra was 1.4% (4/279). The overall prevalence of active syphilis from Dhaka and Hili for MSM was 1.1% (6/531), for MSW was 1% (5/497) and for hijra was 1.8% (5/279).Of the six HIV positive cases identified in Dhaka, four were referred to care and support services, one was already receiving such services and one individual could not be traced. In Hili, two HIV positive cases were identified; one was referred to care and support services while the other could not be reached as she was travelling.
The data from the present surveillance among MSM, MSW and hijra showed that in Dhakafewer MSM, MSW and hijra reported receiving HIV prevention services in 2015 compared to 2013. HIV prevention services for MSW, hijra and their clients (male sex partners) was provided through the Global Fund project and fhi360

with USAID funds. However, the services provided by fhi360 was curtailed in July 2014 which was probably the reason for the decline in coverage in 2015. However, despite declining coverage, the percentage of MSM, MSW and hijra sex workers using condoms remained the same in 2015 compared to 2013.

An important component of the HIV prevention programmes is provision of HTC. The coverage of MSW and hijra (>30%) with HTC in the last year was better than for MSM (10.6%). Age at first sex was below 15 years on average for hijra and MSW and it was just over 15 years for MSM.

Many MSM and MSW were married to females. In addition to wives, married MSM had other female sex partners including girlfriends and female sex workers. The worrisome issue here is the vulnerability of the female sex partners who are often unaware of their male partners' male to male sexual behaviour as such behaviour is stigmatised and hidden. Thus, partner notification which is an important component of HIV and STI prevention is difficult which make women vulnerable to infections through such relationships.

Illicit drugs were used in the last year by approximately 12-17% of the MSM, MSW and hijra sampled in this survey in Dhaka. The drugs most commonly used were methamphetamine (Yaba) and the codeine containing cough syrup (Phensidyl) which were not injected. It is fortunate that very few of the MSM, MSW and hijra sampled in this survey said that they injected drugs.

Male to male sexual behaviour is highly stigmatised and hence hidden which is unlikely to change in the near future. For HIV prevention programmes to be able to reach more MSM, MSW and hijra alternative strategies need to be explored. The present survey showed that a substantial proportion of MSM (18%) contacted their sex partners through social media and 12.7% of MSW used social media to contact their clients. Use of social media was less common among hijra (3.7%).

Overall the data obtained in this surveillance round and the trends observed over the years show continued low prevalence of infections with a rising trend of condom use. However, condom use needs to be improved further and HTC coverage needs to be expanded. In addition, other issues such as those on violence, barriers to accessing services are still of concern and need attention. The information presented in this surveillance report is of relevance to HIV intervention programmes as well as policy makers as the data can be used to enhance ongoing programmes. Continuation of services for these hidden and stigmatised key populations is required to improve their lives but much still remains to be done to ensure healthy lives.

INTRODUCTION

Bangladesh has been collecting risk behaviour and HIV prevalence data on key population groups most at risk of HIV through a national surveillance system which was set up by the Govt. of Bangladesh in 1998 [1]. The design of the surveillance system in Bangladesh was based on the UNAIDS/WHO guidelines for 2nd generation HIV surveillance [2] which aims at a flexible system so that it can be adapted to the state of the epidemic in a country and includes both serological surveillance and a behavioural surveillance surveys (BSS). In Bangladesh, population groups considered to be most vulnerable to and at risk of HIV include female sex workers, people who inject drugs (PWID), males who have sex with males (MSM), male sex workers (MSW) and transgendered people or hijra. Serological surveillance measures HIV prevalence among the selected population groups at sentinel sites spread across the country; syphilis is also measured as a surrogate marker to corroborate behavioural data regarding unprotected sex. Through the BSS, behaviours that carry a risk of HIV infection are evaluated. The serological surveillance and BSS are run in parallel in similar population groups but the individuals sampled are different, some of the inclusion criteria are different and the sampling methodologies for the two systems are also different [3]. Initially, both BSS and serological surveillance was conducted regularly and till 2007 six rounds of BSS and eight rounds of serological surveillance were conducted. The 9th round of serological surveillance was conducted in 2011 but there has been no BSS since 2007. An exception has been MSM, MSW and hijra in whom in 2010, BSS was conducted in Dhaka and in 2013 both BSS and serological surveillance was conducted in Dhaka and Chittagong, while only serological surveillance and only BSS was conducted in Hili and Sylhet respectively. The surveillance system has been crucial in providing key information that has helped Bangladesh to monitor changes in risk behaviour and infection prevalence over time, the data has been the backbone against which the national HIV strategic plans have been developed [4] and global reports have been prepared [5]. Regular and updated information is essential to assess whether Bangladesh is moving in the right direction to prevent an HIV epidemic and to model the future course of the epidemic. Moreover, without these data, it has not been possible to measure the effect of the ongoing large scale HIV prevention programs.

As the surveillance system in Bangladesh dates back to the late 1990s, the country felt it was important to review the design in order to make it more practical and at the same time keeping it systematic by using epidemiologic criteria related to the potential of HIV spread. Hence a review of the surveillance system in Bangladesh was conducted in 2009 sponsored by WHO SEARO [6]and the recommendations of this review are in line with the newly developed WHO and UNAIDS guidelines for HIV surveillance [7].

The specific criteria recommended in the review for making decisions on the surveillance design were:

- If prevalence of HIV is >5% in a given population and geographical location, integrated bio-behavioural surveillance (IBBS) should be conducted
- If HIV prevalence is <5% and
- If estimated size of key populations is >1000, both BSS and serological surveillance should be conducted but this may be done separately and the latter may be conducted through intervention organisations
- If estimated size of key populations is between 500 and 1000, only serological surveillance should be conducted through intervention organisations
- If estimated size of key populations is <500 but they are present in geographically vulnerable areas such as border areas or drug trafficking routes, only serological surveillance through intervention organisations should be conducted

Using the above criteria, the Technical Working Group (TWG) for the National M&E and Strategic Information on HIV and AIDS, which is a subcommittee of the Technical Committee of the National AIDS

Committee (TC-NAC), in its meeting on 20th May 2013 selected five key populations to be included in the surveillance - PWID, female sex workers, MSWs, MSM and hijra. Agreement was also reached on the geographic sites for sampling and the sampling strategy to be used for each. However, it was accepted that although ideally a country should conduct surveillance in all sites that fulfil the accepted criteria, countries also need to consider the availability of resources, and the surveillance design has to accommodate that reality. As the numbers of sites identified in Bangladesh were numerous, further analysis was done to reduce the number of sites by determining the key locations where key populations were present in high enough numbers and also where HIV had been found. When the available data were triangulated it was clear that Dhaka and Hili were the most vulnerable sites based on the prevalence of HIV, the concentration of key population groups and/or cross border mobility. As the funding for the national HIV surveillance from HPNSDP and others was expected soon but it was understood that as the funding would be limited only female sex workers and PWID in Dhaka and Hili would be covered through those funds, and other key populations would need to be covered through other sources of funds if and when those funds became available. Based on this decision surveillance, both serological and BSS, was conducted among MSM, MSW and hijra in Dhaka and Hili through funds from the Global Fund to icddr,b as part of the national HIV surveillance.

It is well recognised that MSM are hidden, marginalized and stigmatized population groups not only in Bangladesh but also globally [8-12]. Hijra in Bangladesh are less hidden but are also subject to stigmatization and marginalization [13]. Considerable heterogeneity in the sexual behaviours of MSM has led MSM in the Indian subcontinent to be categorised into different sub-groups [10, 14]. These subgroups are: 'Kothi' who are feminized males; 'Panthi', is the name given by Kothi to their sex partners who are usually insertive partners; 'Parik' are the male lovers of kothi; 'Do-parata' are MSM who practice both insertive and receptive sex roles. There is often an overlap between kothi and hijra but hijra are distinguished from kothi in that they have a strict social hierarchy that forms an essential aspect of the hijra culture [8]. The hijra community is organized around a traditional occupation called 'badhai' which refers to collecting money from the markets, and blessing the new born. The community follows a strict hierarchical system with a 'guru'' (teacher) who has under her wing 'chela' (disciples). The guru-chela relationship is well defined and there is set of rules including that of initiation. The roles are also well defined so that all chela must be linked to a guru and a chela is identified by her link to her guru while a guru is recognized by the number of chela under her leadership. This relationship is the fundamental basis of the hijra community. Traditionally hijra did not sell sex but over time, with economic pressures, many hijra are selling sex although a few still do not do so. Similarly, among MSM, a certain proportion sells sex and may be categorised as male sex workers (MSW) but the larger MSM community do not sell sex.

Bangladesh has been providing HIV prevention services for MSM, MSW and hijra for more than a decade now. HIV prevention for MSM and MSW started in 1997 and has been implemented by a self-help group which subsequently registered as a non-governmental organisation (NGO). For hijra, activities were initiated in 2000 and in 2003-04 community based organisations (CBOs) for hijra were established and registered. These CBOs are now directly implementing HIV prevention programs for hijra. The programmes for these population groups have been funded by various donors at different times including the Government of Bangladesh's Health, Population and Nutrition Sector Development Program (HPNSDP), the Global Fund and fhi360. At present among the estimated 10,199 hijra and 131,472 MSM/MSW, 39.8% and 23.6% respectively are being covered by HIV prevention, care and treatment services (Ref-SE 2016 & MIS).

The package of HIV prevention services in Bangladesh for MSM, MSW and hijra is similar irrespective of the implementing organisation. Services are provided through static Drop in Centres (DICs) located in the vicinity of the community members and through outreach provided primarily through peer outreach workers to reach the target population at field sites. The services include delivering behaviour change communication (BCC) materials, raising awareness, distributing condoms and lubricants, managing and treating sexually transmitted infections (STIs) and general health complaints, referral for HIV testing and

counselling (HTC) to other organizations. Treatment and management for STIs and general health complaints are provided through clinical sessions held at the DICs at fixed times each week. Outreach workers contact the target populations at field sites, deliver prevention messages, distribute condoms and lubricants and refer them to DICs for attending group education sessions and the clinic.

The data from 2013 HIV surveillance showed that risk and vulnerability to HIV was still present (although to a lesser extent) and rates of infection were still low [15]. In Dhaka, the prevalence of HIV in MSM, MSW and hijra was less than 1% while in Hili, HIV was detected only among two hijra out of 28 (7.1%) and in this same group active syphilis was <1%. Over the years, in Dhaka, the prevalence of active syphilis declined significantly in hijra (from 10.4% in 2003 to 3% in 2013) and in MSW (from 7.7% in 2000 to 2.2% in 2013) ($p<0.05$ for all comparisons). The prevalence of active syphilis in MSM in Dhaka remained unchanged since 2000 and was <2%. Over time, from 2002 to 2013, remarkable improvements were observed in HIV risk behaviours among MSM, MSW and hijra in Dhaka with significant increases in condom use both in the last sex act and consistently with all types of sex partners either in last month or week prior to the survey [15].

The findings from the present surveillance on MSM, MSW and hijra conducted in 2015 along with trends over time are reported here.

METHODOLOGY

The methodologies followed in this round of BSS (including definitions, inclusion criteria, and sampling methods) were similar to those used previously for serological surveillance and BSS which allows comparability over the years [15]. However, since 2010 for conducting BSS in hijra in Dhaka, a newly developed birit based method was used [16, 17]. These are described in detail below.

Population groups

The population groups that were sampled in this round of surveillance were MSM, MSW and hijra. Definitions of the population groups that were used in the serological and behavioural surveillances are shown in Table 1; these definitions are similar to the definitions used in the previous rounds of surveillance.

Table 1: Definitions

Population groups	Serological surveillance	Behavioural surveillance
Males who have sex with males (MSM)	Males who have sex with males but did not sell sex in the last one year	Males who have sex with males but did not sell sex in the last one year
Male Sex Workers (MSW)	Male who sell sex in exchange of money or compulsory gift in the last one month	Male who sell sex in exchange of money or compulsory gift in the last one month
Hijra	Who identify themselves as belonging to a traditional hijra sub-culture	Who identify themselves as belonging to a traditional hijra sub-culture

In the BSS, hijra were further subdivided into two groups:

- Badhai or non-sex worker hijra- who did not sell sex but earned money through the traditional rituals of hijra
- Sex worker hijra- who identified themselves as sex workers

Inclusion criteria

The inclusion criteria for MSM, MSW and hijra were as follows:

- Definition – individuals were included if they met the definitions shown in Table 1.
- Age –18 years or older
- If they provided informed consent

Informed consent was obtained from all survey participants; for the serological survey, written consent was obtained while verbal informed consent was taken for the behaviour survey.

Sampling sites

The sites selected for serological surveillance and BSS are shown in Table 2.

Table 2: Sampling sites

Geographical location	Population Groups	Serological surveillance	BSS
Dhaka City Corporation	MSW	✓	✓
	MSM	✓	✓
	Hijra	✓	✓
Hili	MSM	✓	
	MSW	✓	
	Hijra	✓	

Sampling methods and procedures

The methods used for sampling in earlier rounds of serological surveillance and BSS were different. In the serological system participants were sampled non-randomly through intervention programmes. Participants were asked to visit DICs where blood was drawn following informed consent. This was done because results of syphilis tests and treatment for syphilis could only be provided in a clinical setting. Sampling for BSS, on the other hand, was random and individuals were interviewed in public venues where they gathered for soliciting sex. The rationale for keeping the two systems separate was that refusals were likely to be higher as many individuals do not want to give blood in public venues or be tested for HIV for fear of stigmatisation.

In addition to different sampling methodologies, the procedures involved were different for the two and therefore the serological and behavioural surveys are described separately.

a) SEROLOGICAL SURVEILLANCE

Field preparation and activities

MSM, MSW and hijra was accessed through DICs of NGOs providing HIV prevention services to those populations. For organizing sample collection at the DICs, meetings were held at DICs with DIC staff as well as peer educators/outreach workers to orient them about the activities related to the survey. Following this the peer educators/outreach workers contacted individuals in the field and encouraged them to attend the DICs for providing blood. In each city the target sample size for each population group was proportionately distributed among the DICs and the numbers that were being covered by all DICs was used to estimate the proportionate sample sizes for each DIC. Blood samples were collected on a first come first served basis.

During sampling, all facilities were available at the DIC which included trained medical personnel, equipment including refrigerator and centrifuge. If any of these were not available, the surveillance team provided those for the duration of the surveillance. During sampling, phlebotomists from the surveillance team drew blood, separated serum from blood, labelled tubes, stored and transported specimens to icddr,b. The team

also completed a short demographic questionnaire. For the border areas, as mobility enhances vulnerability [18] and as no risk behaviour survey was conducted in these individuals, few questions related to mobility were added. The same questionnaire was used in the previous serological surveillance rounds.

Laboratory methods

In this survey, the testing for HIV and syphilis was linked to the individuals.

Each blood sample was split into two: one sample for HIV and the other for syphilis so that individuals positive for syphilis could get treatment and individuals who were positive for HIV could be referred for care and support services.

i) Blood collection, separation, storage, labelling and transport

Blood was collected by venepuncture into sterile, plain Vacutainers (Becton Dickinson, Rutherford, NJ, USA). 0.5 ml of whole blood was transferred to an eppendorf tube containing EDTA for future use. From the remaining volume of blood, serum was separated by centrifugation. Whole blood and serum samples were transported to the Virology laboratory of icddr,b by maintaining a cold chain where they were stored at –20^{o}C.

ii) HIV testing

Samples were initially tested by a commercial enzyme linked Immunosorbent assay (ELISA) kit (Organon Teknika) and positive results were confirmed by a Line Immunoassay (LIA, Organon Teknika). An indeterminate result by LIA was considered as negative.

iii) Testing for syphilis:

Syphilis was tested by the Rapid Plasma Reagin (RPR) test (Nostion II, Biomerieux BV, Boxtel, The Netherlands)) and Treponema Pallidum Particle Agglutination (TPPA) test (Serodia TPPA, Fujirebio Inc., Japan). Tests were done for active syphilis only. Samples positive for TPPA with an RPR titre of $\geq$8 were considered to reflect active syphilis. TPPA test was carried out only when RPR is positive.

Testing was done as soon as possible so that results could be given to sentinel sites within two weeks of blood collection for treatment purposes.

b) BEHAVIOURAL SURVEILLANCE

For all groups a two-stage probability sampling method was used [19]. For MSM and MSW this was Time Location Sampling (TLS) and for hijra this was a modified TLS method which was used during the previous BSS in hijra in Dhaka [15] and was called the birit-based method [16, 17]. The two stages of the sampling process included mapping and interviewing. During mapping spots or primary sampling units (PSUs) from where individuals would be sampled were identified. The definitions of the PSUs are shown in Table 3.

Table 3: Definition of the spot/PSU from where individuals in each population group were sampled

Population groups	Definition of a spot/PSU
MSM	A place was considered as a spot/PSU if at least three MSM were found during a specific time frame
MSW	A place was considered as a spot/PSU if at least three MSW were found during a specific time frame
Hijra	A house where at least three hijra were living

The mapping procedure was the same for MSM and MSW but different for hijra.

For MSM and MSW mapping was conducted at specific time frames (7 PM to 11 PM) as it was known that those individuals were likely be present at those spots at those times. The surveillance team collected mapping information with the help of local guides, key informants and peers of the population groups and the information was recorded in a prescribed format. In addition, the members of the team also applied their own judgment to explore new spots. Efforts were taken to cover the entire Dhaka metropolitan area and to identify all spots irrespective of coverage by HIV prevention programs.

For hijra, the method employed for mapping essentially resulted in a census of hijra in Dhaka city. This method has been coined as the birit based method [16] and was used in the baseline survey of the Global Fund project [20] as well as the BSS conducted in 2013 [15]. As hijra gurus operate within a defined area called a birit, within the boundaries of which all activities of their chela are conducted, an initial list of gurus was prepared through a series of consultations with the hijra community in Dhaka city. Thereafter, the team members visited each of the guru's houses to identify all houses of chelas within the gurus' birit and counting the number of chelas within those households. This information was written in a prescribed format that constituted the sampling frame of hijra for each guru.

The second stage of the TLS was the interview and a 'fixed' or 'take all' approach was applied depending on the calculated sample size. Thus, a take all approach was applied for MSM and MSW when the total number of individuals counted during mapping was less than or equal to the desired sample size. To interview hijra, the total sample size was proportionately distributed according to the size of each birit but the location of interview was the house of the chela or the house of guru but in a private place.

Risk behaviour questionnaires

For each of the groups, interviews were conducted using semi-structured questionnaires which were similar to the previous BSS [15] and the duration of each interview was approximately 45 minutes. The questionnaires included information on socio-demographic characteristics, sexual history, sexual risk behaviours, mobility, knowledge on male condoms and lubricants, knowledge of HIV and STIs, healthcare seeking behaviour for STIs, violence, HIV risk assessment and involvement with NGO activities. All the questionnaires were translated to Bangla and interviewers were trained thoroughly. Questionnaires were pretested for each of the groups in some field sites on the basis of which questionnaires were fine tuned to strengthen the quality of data/data collection.

Sample size calculations

Separate indicators and methods were used in the calculation of sample sizes for serological and behavioural surveys as described below:

Serological surveillance

In order to calculate the sample size the following standard formula [21] was used.

$$n_1 = \frac{z^2_{1-\frac{\alpha}{2}}}{d^2} pq$$

In the above equation:

n_1=Calculated sample size

p= Estimated percentage points of the prevalence of HIV in the previous round of HIV serological survey conducted in 2013 [15]

q= 1-p

$Z_{1-\alpha/2}$=The Z-score corresponding to the desired level of significance=1.96 (95% confidence interval)

d=Desired level of precision

For Hili, in case of 0% prevalence of HIV among MSM and MSW in the previous round of HIV serological survey [15] 1% prevalence and 1% absolute precision was assumed and the sample size was calculated. The calculated sample size was further adjusted for the finite population correction (FPC) according to the following formula [22]:

$$n_2 = \frac{n_1}{1 + \frac{n_1}{N}}$$

In the above equation:

n_2=Calculated sample size after adjusting for refusals and FPC

N=Population size for each of the risk groups (Number being covered by the NGOs of icddr,b during Jul-Sept, 2014)

Based on the prevalence of HIV from the previous round and using the above mentioned formulas the calculated sample size is shown in Table-4.

Table 4: Calculated sample size for serological surveillance among MSM, MSW and hijra

Population Groups	Geographical Location/City	Prevalence of HIV in the previous round of HIV surveillance, 2013	Absolute precision (%)	Calculated sample size based on absolute precision & with 5% refusal (without FPC) n1	Number being covered (N)$^{\phi}$	Final sample size (with FPC) n2	Sample size achieved
MSW	Dhaka	0.6	0.6	636	1,135	408	412
MSM	Dhaka	0.7	0.7	545	1,348	388	388
MSW	Hili	0	x	380	109	85	85
MSM	Hili	0	x	380	229	143	143
Hijra	Dhaka	0.5	0.5	764	325	228	233
	Hili	7.1	2	633	53	49	46
Total						**1,301**	**1,307**

$^{\phi}$Coverage data of icddr,b

Behavioural surveillance

The sample size was calculated using a standard formula [19] that was used in the BSS and in the RCC baseline survey as follows.

$$n = D\frac{\left\{z_{1-\alpha}\sqrt{2\bar{p}(1-\bar{p})} + z_{1-\beta}\sqrt{p_1(1-p_1)+p_2(1-p_2)}\right\}^2}{(p_2-p_1)^2}$$

In the above formula:
D=Design effect
p_1= Estimated proportion of risk behaviour at the time of previous survey

p_2= The target proportion at some future date, so that (p2-p1) is the magnitude of change that we want to be able to detect

p (bar)=$(p_1+p_2)/2$

$Z_{1-\alpha}$=The Z-score corresponding to desired level of significance=1.645

$Z_{1-\beta}$= The Z-score corresponding to desired level of power=0.83

The calculation of the sample size for the groups was based on major risk behavioural indicators from the previous round of HIV behavioural survey conducted in 2013 in Dhaka [15]. For hijra, condom use in last anal sex act with males and condom use in last anal sex act with non-commercial sex partners and for MSW, estimates of condom use in last anal sex act with new clients, regular clients and condom use in the last sex

act with a male sex partner in the last 12 months were used. For MSM, estimates of condom use in last anal sex act while buying sex from males (not hijra), condom use in last anal sex act while having sex with non-commercial male/hijra sex partners and condom use in the last sex act with a male sex partner in the last six months were used.

The sample size was calculated in order to detect 7.5-12.5% changes (1-way change detectable) in the risk behaviour over time for the population groups with desired design effect, 95% confidence level and 80% power and separate sample sizes were calculated for each of the indicators in each group (Table 5). The largest sample size was selected for each group. Accordingly, the final sample sizes were 516 MSM, 513 MSW and 554 hijra.

Table-5: Proposed sample size for the HIV risk behaviour surveillance among MSM, MSW and hijra

Risk behaviours by population/Indicators used in the calculation of sample size	**Sample sizes in the previous round of risk behavioural survey, 2013**	**Estimates of the indicators in 2013**	**1-way change detect-able**	**Design effect¶**	**Required Sample Size**
MSM					
Last time condom use in last anal sex while buying sex from males (not Hijra) in last month (among those who bought sex from males in last month)	487	46.0%	12.5%	2.6	516
Last time condom use in last anal sex with non-transactional male/Hijra in last month (among those who had sex with non-transactional male/Hijra sex partners in last month)	487	47.4%	12.5%	1.8	356
Condom use in the last sex act with a male sex partner (among those who had sex in the last six months)	487	49.1%	12.5%	1.6	315
MSW					
Last time condom use in last anal sex with new clients in last week (among those who had new clients in last week)	498	56.2%	11.3%	1.6	368
Last time condom use in last anal sex with regular clients in last week (among those who had regular clients in last week)	498	52.7%	11.3%	1.6	379
Condom use in the last sex	498	54.7%	11.3%	2.2	513

Risk behaviours by population/Indicators used in the calculation of sample size	Sample sizes in the previous round of risk behavioural survey, 2013	Estimates of the indicators in 2013	1-way change detect-able	Design effect[¶]	Required Sample Size
act with a male sex partner (among those who had sex in the last 12 months)					
Hijra					
Last time condom use in last anal sex with a male sex partner in the last year (Denominator is who had anal sex with a male sex partner in the last 12 months)	533	45.3%	7.5%	1.0	554
Last time condom use in last anal sex with non-transactional male sex partners in the last month (among those who had sex with non-transactional male sex partners in the last one month)	533	42.9%	7.5%	1.0	552

[¶]For each risk behavioural indicator, the design effect was calculated from the corresponding survey data from the previous survey using Stata version 11

Data analysis

Serological surveillance

The demographic data was entered twice using Epi Info for Windows (version 3.5.1) and laboratory data was entered using Statistical Package for Social Sciences (SPSS, version 15.0 for Windows, SPSS Inc., Chicago, IL, USA). Data analysis was carried out using SPSS and Epi Info. To compare continuous non-parametric data between any two sites/groups the Mann-Whitney U test and to compare categorical data, chi-square statistics was employed. For comparison of data over time chi-square for trends was used.

Behavioural surveillance

For each population group, data was entered twice using Epi-Info for Windows (version 3.5.1); range and consistency checks were incorporated in the data entry screens. Thereafter, all data files were converted to Excel for further cleaning by filtering. Data were analysed using STATA Inter-Cooled Version 11.2 for Windows package for each risk group separately. Descriptive statistics such as proportions for categorical and means or medians with interquartile ranges for numerical variables were reported. Clustering of observations was incorporated in the calculation of 95% confidence interval and sampling weights were incorporated in the estimation of proportions/means/medians/inter quartile range to adjust for any bias that might have occurred as a result of the sampling design [19]. In addition, all major risk behavioural

variables were compared from 2002 to 2015 for BSS rounds.

Quality control and monitoring

For HIV testing, the Virology laboratory of icddr,b is under an external quality control scheme. In addition, internal quality control was also conducted during the surveillance period.

The serological surveillance team comprised of laboratory and field staff many of whom had previous experience in conducting similar surveys.

The BSS field team comprised of interviewers and supervisors for each population group. In total, 42 interviewers were recruited and half of them were selected from the MSM/MSW/hijra community to build mutual trust and empathy. In addition, prior experience of the interviewers in conducting HIV risk behavioural interviews was considered as an advantage in selecting the interviewers. Data collection in the field was supervised by five supervisors.

To ensure the quality of information, all collected data was checked and verified at the field sites both by the interviewers by checking one another's questionnaire and supervisors. The members of the data collection teams adopted a strategy of checking each other's data while at the field. Before data entry, the research supervisors at the icddr,b office regularly reviewed some completed questionnaires to identify inconsistencies in responses to indicators and provided feedback to the team members. To monitor field data collection, a team of researchers from the Dhaka icddr,b office visited sites regularly during mapping and data collection.

Personnel training

For serological surveillance, training was provided to field staff and to laboratory personnel for a week. Training was conducted on the basics of HIV, risk behaviours, sensitivity of the population groups, the procedures involved including maintaining Universal Precautions. In addition, hands on training for the staff was provided on Universal Precautions, serum separation, labelling, sample transportation and storage. Experienced team members from the Global Fund project and the Virology Laboratory of icddr,b conducted the training.

For BSS, the supervisors, interviewers and data management assistants received a comprehensive training for eleven days on issues related to HIV/AIDS, sexuality, vulnerable groups, mapping and interviewing techniques. Also, they received hands on training on the questionnaires. Most of the sessions of the training applied participatory learning methods.

In these training sessions, the importance of maintaining confidentiality and respect was stressed upon.

Ethical assurance for the protection of human rights

The surveillance was approved by the Research Review and Ethical Review Committees of icddr,b.

In the serological surveillance, written consent was taken in Bangla. In the BSS, verbal consent in Bangla was taken and this was read out as written in each questionnaire before the start of an interview. The main reason for taking verbal consent was to ensure anonymity, gaining trust and establish rapport between the respondent and the interviewer while collecting personal and sexual risk behavioural data.

Serum samples were divided into two – one for HIV and the other for syphilis. The tubes had all details of the study participant – name, age, DIC name and date of collection. This allowed results and treatment to the study participants who were positive for syphilis and referral to care and support services for those found positive for HIV.

All information such as socio-demographics and test results were linked to each study participant by a unique ID so that it was not possible to link to the individuals except by the key investigators of this study. In the behavioural survey, the questionnaires did not contain any identifiers; they were delinked by using a unique code for the PSU and unique ID of the study participant.

All files were kept in locked cabinets in the icddr,b Global Fund Project Office in Dhaka. The cabinets were only accessible to the key investigators of the study. All computers containing data were password protected.

RESULTS

FINDINGS FROM THE SEROLOGICAL SURVEY

The serological surveillance was conducted among 1,307 MSM, MSW and hijra in Dhaka and Hili from five DICs in Dhaka and one in Hili from 12 May to 11 June 2015. In Hili, MSM and MSW were combined as one group as non-sex worker and sex-workers could not be easily distinguished.

Socio-demographic characteristics(Table-6)

The median age ranged from 24 to 30 years. Amongst all, the lowest proportion who had ever attended a school was in hijra from Hili (when compared to the other groups in other sites; $p<0.05$ for all comparisons). Information on the duration of working as a sex worker was collected from MSW and hijra; the median duration as a sex worker was lowest among MSW in Hili compared to MSW and hijra in other sites ($p<0.05$ for all comparisons).

Table-6: Socio-demographic characteristics of MSM, MSW, combined MSM/MSW and hijra

Indicators	MSM, Dhaka N=388, unless otherwise stated	MSW, Dhaka N=412, unless otherwise stated	Hijra		MSM/MSW combined Hili N=228, unless otherwise stated
			Dhaka N=233, unless otherwise stated	Hili N=46, unless otherwise stated	
Age in years, n (%)					
18-24	148 (38.1)	127 (30.8)	81 (34.8)	11 (23.9)	116 (50.9)
>24	240 (61.9)	285 (69.2)	152 (65.2)	35 (76.1)	112 (49.1)
Age in years					
Mean	27.7	28.1	27.2	31.1	26.3
Median (IQR)	26.0 (23.0-30.0)	26.0 (24.0-31.0)	26.0 (23.0-30.0)	30.0 (24.8-37.0)	24.0 (20.0-29.0)
Ever attended school, n (%)	326 (84.0)	355 (86.2)	175 (75.1)	22 (47.8)	203 (89.0)
Education (years) (among those who attended school)	N=326	N=355	N=175	N=22	N=203
Mean	7.8	8.5	6.7	7.1	8.4
Median (IQR)	8.0 (5.0-10.0)	8.0 (6.0-11.0)	7.0 (4.0-9.0)	7.0 (4.0-9.0)	9.0 (6.0-11.0)
Duration of selling sex (months)			N=206	N=32	N=85
Mean	NA	126.8	120.6	122.6	95.2
Median (IQR)	NA	108.0 (60.0-180.0)	108.0 (60.0-171.0)	115.0 (63.0-180.0)	72.0 (36.0-120.0)
Duration as sex worker at the same site (months)			N=206	N=32	N=85
Mean	NA	106.5	99.7	116.8	84.6
Median (IQR)	NA	72.0 (36.0-144.0)	72.0 (48.0-144.0)	96.0 (60.0-180.0)	60.0 (36.0-108.0)

IQR refers to inter quartile range
NA refers to not applicable

Other Characteristics of Combined MSM/MSW and hijra in Hili (Table 7)

Table-2 shows the information on hijra and the combined MSM/MSW group from Hili who travelled abroad. More hijra compared to MSM/MSW travelled to India in the last one year ($p<0.05$). While abroad, 23.8% MSM bought sex from males/females/hijra, 32% MSW and 21.7% hijra sold sex to males in the last year. Of those who reported buying/selling sex, condom use in the last sex act was reported by more than 80% of the respondents.

Table-7: Cross border mobility in the last year of MSM, MSW and hijra from Hili

Indicators	MSM N=143, Unless otherwise stated n (%)	MSW N=85, Unless otherwise stated n (%)	Combined MSM and MSW N=228, Unless otherwise stated n (%)	Hijra N=46, Unless otherwise stated n (%)
Travelled to India in the last year	42 (29.4)	25 (29.4)	67 (29.4)	33 (71.7)
Sold sex while abroad in the last year* (Among those who went abroad in the last year)	N=42 10 (23.8)	N=25 8 (32.0)	N=67 18 (26.9)	N=23$^{\phi}$ 5 (21.7)
Used condom during last episode of selling sex while abroad in the last year (Among those who went abroad in the last year and sold sex)	N=10 9 (90.0)	N=8 8 (100.0)	N=18 17 (94.4)	N=5 4 (80.0)

*For MSM, commercial sex refers to buying sex from females/hijra/males; for MSW and hijra, commercial sex refers to selling sex to males

$^{\phi}$10 observations were missing

Prevalence of HIV and active syphilis(Table-8)

In Dhaka, one MSM (0.3%), three MSW (0.7%), two hijra (0.9%) and in Hili, two hijra (4.3%) tested positive for HIV; all MSM/MSW from Hili were HIV negative. The overall prevalence of HIV from Dhaka and Hili for MSM was 0.2% (1/531), for MSW was 0.6% (3/497) and for hijra was 1.4% (4/279). The overall prevalence of active syphilis from Dhaka and Hili for MSM was 1.1% (6/531), for MSW was 1% (5/497) and for hijra was 1.8% (5/279). Prevalence of active syphilis was also low among these groups (Table-8).

Of the six HIV positive cases identified in Dhaka, four were referred to care and support services, one was already receiving such services and one individual could not be traced. In Hili, two HIV positive cases were identified; one was referred to care and support services while the other could not be reached as she was travelling.

Table-1: Prevalence of HIV and active syphilis among MSM, MSW and hijra, 2015

Geographical location (Number sampled)	HIV n (%)	Active syphilis n (%)
Males who have sex with males (MSM)		
Dhaka (388)	1 (0.3)	6 (1.5)
Male sex workers (MSW)		
Dhaka (412)	3 (0.7)	5 (1.2)
Hijra		
Dhaka (233) Hili (46)	2 (0.9) 2 (4.3)	5 (2.1) 0
MSM/MSW combined		
Hili (228)	0	0

Notes:

Prevalence of HIV:

- <25 years: MSM 0% (0/233), MSW 0% (0/158), hijra 1.1% (1/92)
- ≥25 years: MSM 0.3% (1/298), MSW 0.9% (3/339), hijra 1.6% (3/187)

Prevalence of active syphilis:

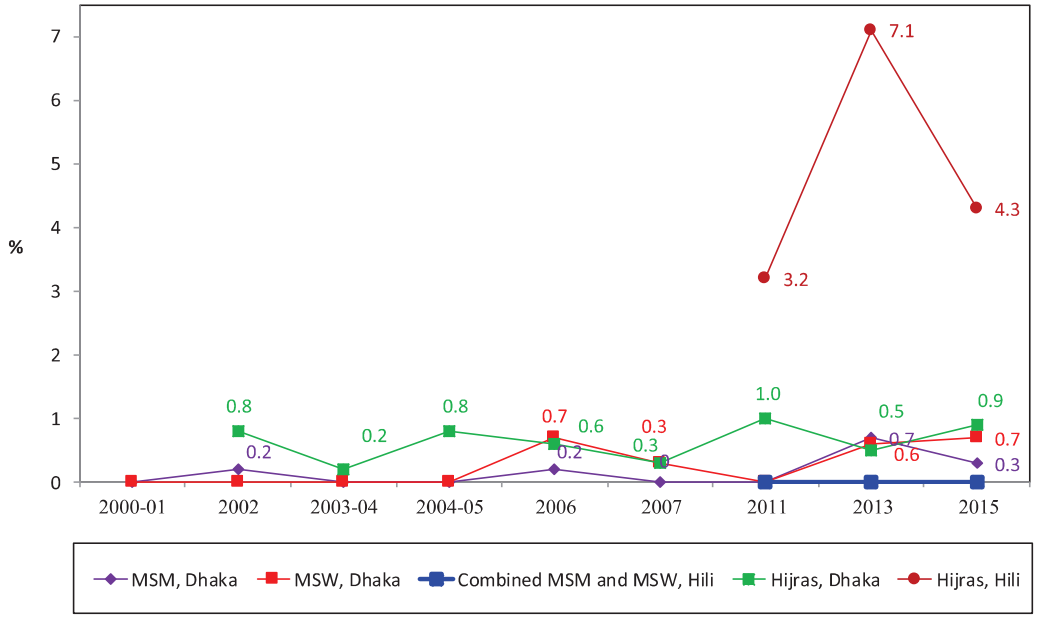
- <25 years: MSM 1.3% (3/233), MSW 0.6% (1/158), hijra 3.3% (3/92)
- ≥25 years: MSM 1.0% (3/298), MSW 1.2% (4/339), hijra 1.2% (2/187)

Changes in the Prevalence of HIV and Active Syphilis over the years

Prevalence of HIV

The prevalence of HIV in Dhaka among MSM, MSW and hijra, is still less than 1% and no changes were observed over the years from 2000 to 2015 (Figure-1). In 2011, 3.2% (1/31), in 2013, 7.1% (2/28) and in 2015, 4.3% (2/46) of hijra in Hili tested positive for HIV and statistically no trends were observed.

Figure-1: Prevalenceof HIV over time in Dhaka and Hili



Prevalence of Active Syphilis

The prevalence of active syphilis significantly declined in MSW and hijra in Dhaka (Figure-2, p<0.05 for both). No significant changes were observed among MSM/MSW and hijra in Hili (Figure-3) as the prevalence was low to start with.

Figure-2: Prevalenceof active syphilis over time in Dhaka and Hili

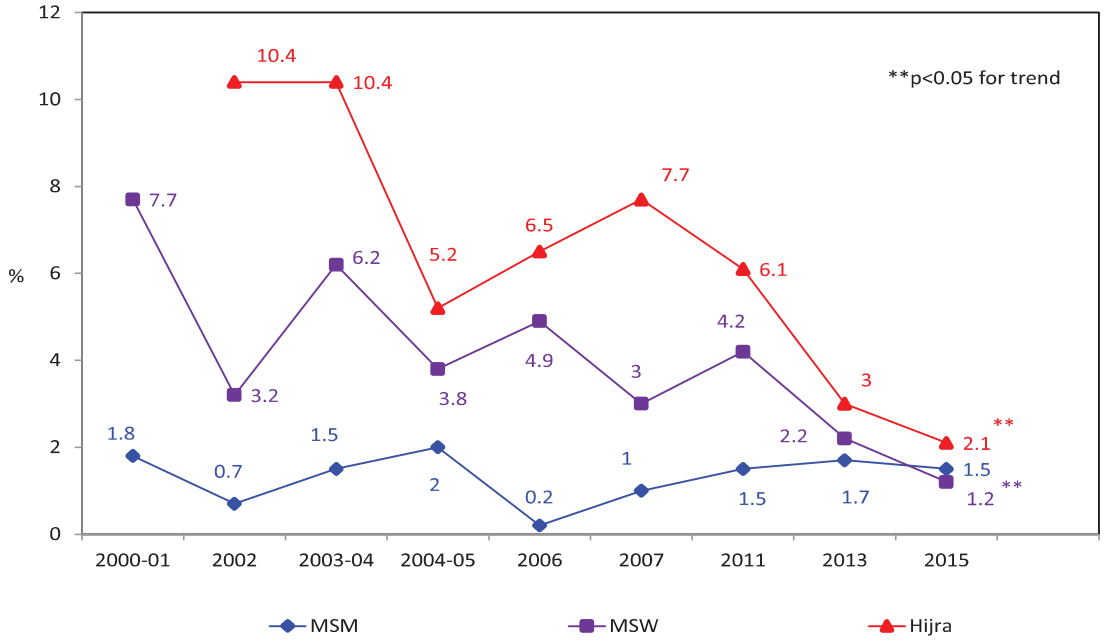
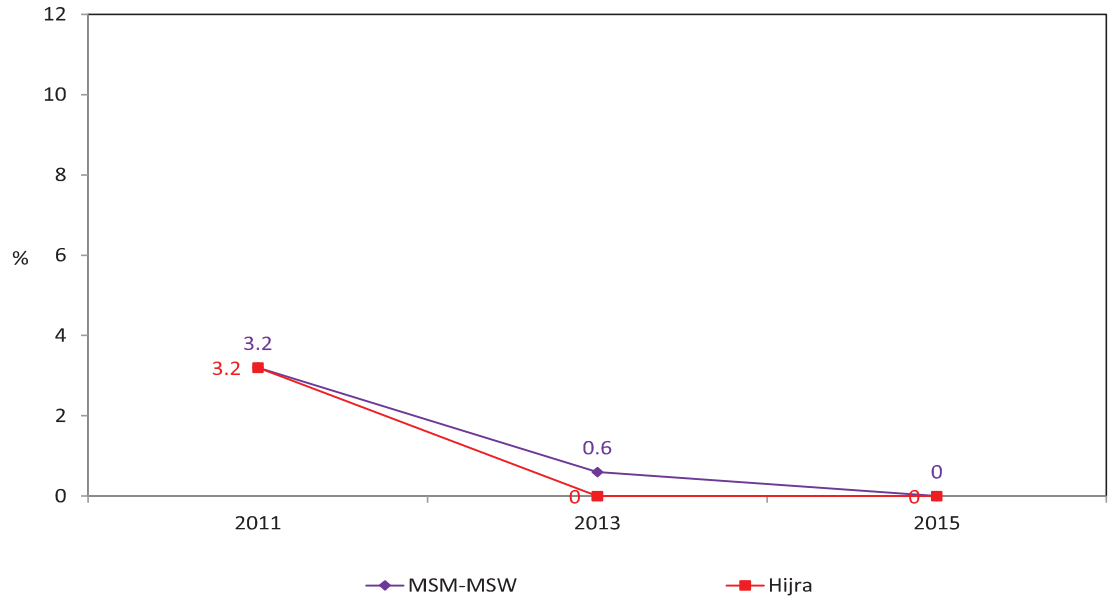


Figure-3: Prevalenceof active syphilis over time in Hili



The prevalence of active syphilis was compared in the age groups of 15-24 years and >24 years over time (Figures 4-7). In Dhaka, no changes were observed in the prevalence of active syphilis in the two age groups among MSM (Figure-4). However, in MSW and hijra the prevalence declined significantly over time in all age groups (Figures 5 and 6, p<0.05 for both). In the combined MSM/MSW in Hili, prevalence of active syphilis in the age group of >24 years significantly declined to 0 in 2015 from 7.9% in 2011 (p<0.05) (Figure-7).

Figure-4: MSM-Dhaka: Prevalenceof active syphilis over time by age groups

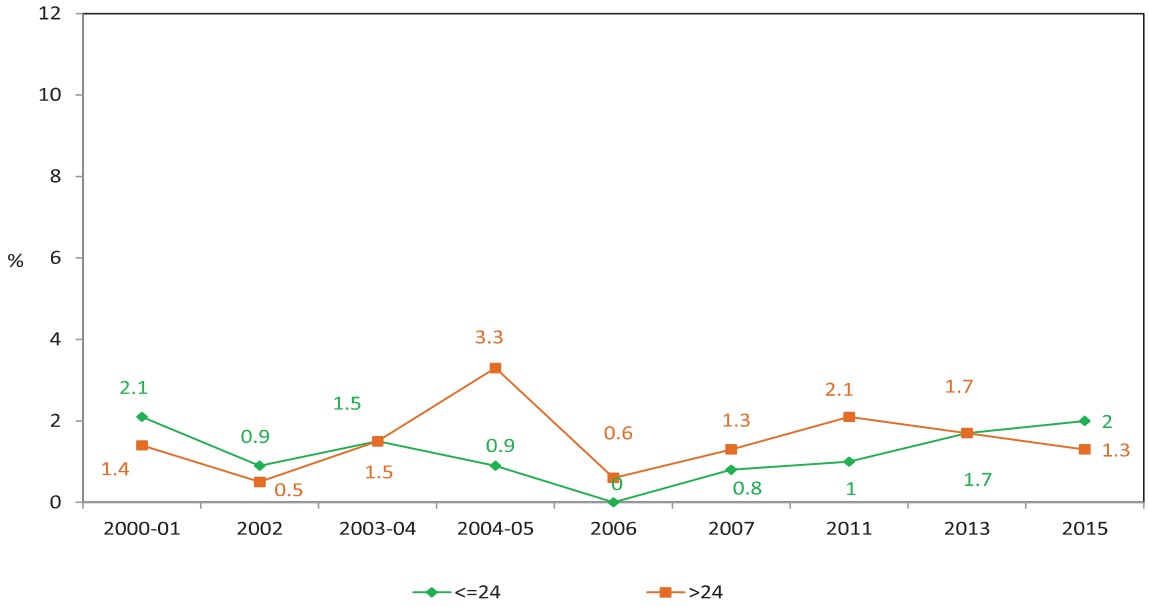


Figure-5: MSW-Dhaka: Prevalenceof active syphilis over time by age groups

Figure-6: Hijra-Dhaka: Prevalenceof active syphilis over time by age groups

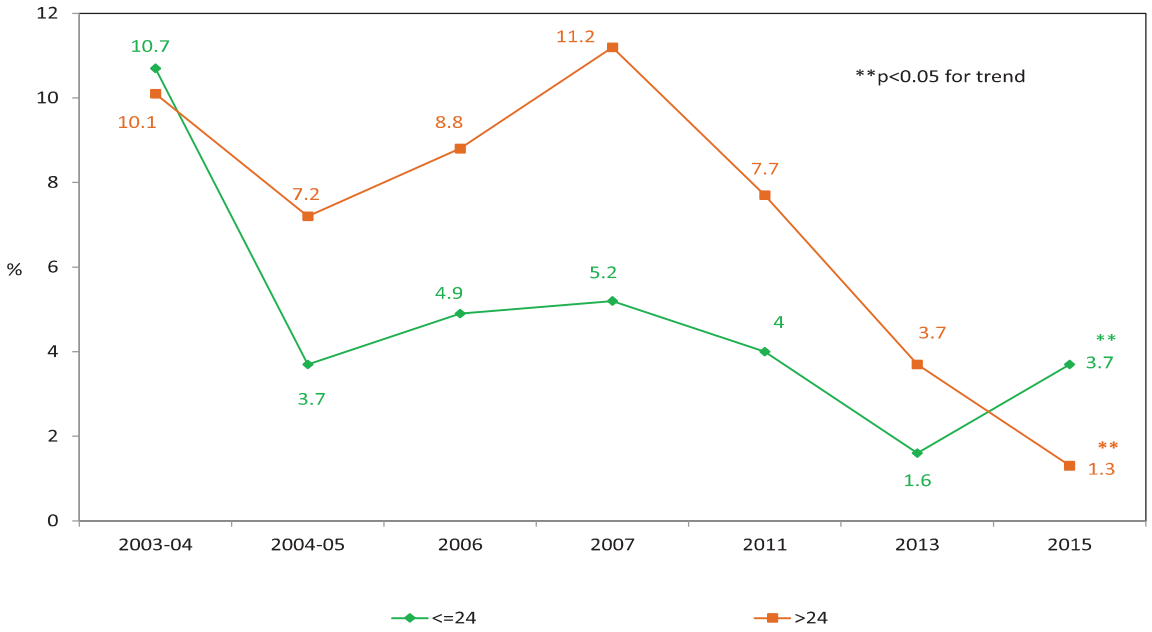
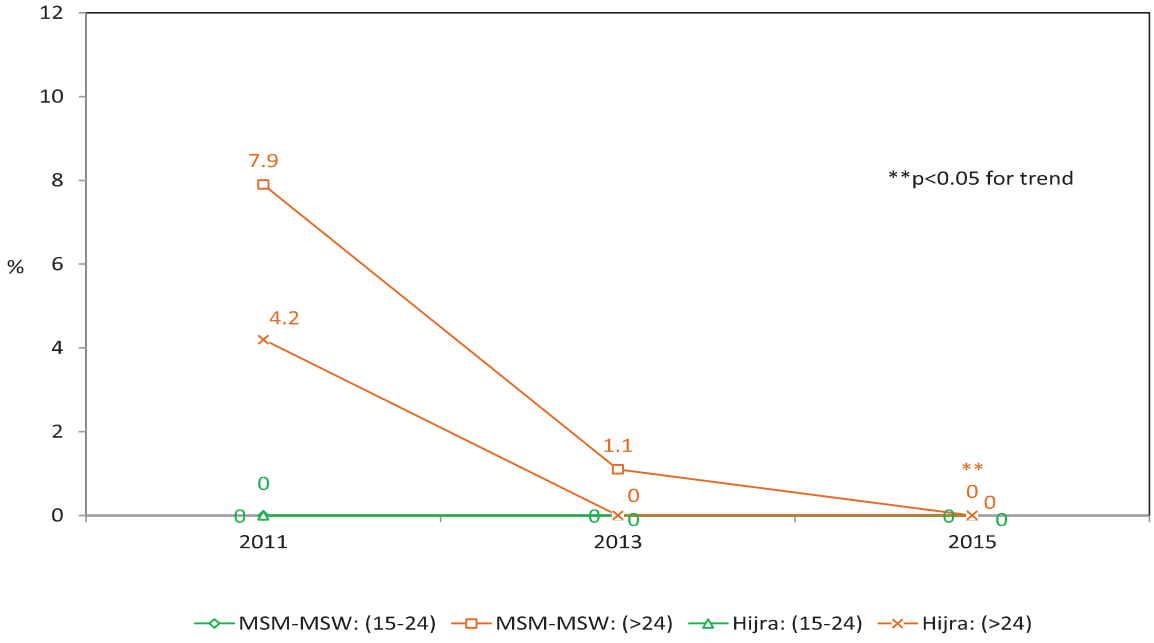


Figure-7: Hili-Combined MSM/MSW and hijra: Prevalenceof active syphilis over time by age groups



FINDINGS FROM RISK BEHAVIOURAL SURVEILLANCE

MALES HAVING SEX WITH MALES (MSM)

The results from the BSS from the MSM in Dhaka are presented in the following two sections; A. Findings from the 2015 risk behavioural surveillance and B. Changes in some key risk behaviours over the years of surveillance.

A. Findings from the 2015 risk behavioural surveillance

Males who have sex with males were sampled (N=518) from Dhaka city between 28th May and 13th June, 2015 adopting a 'take all' approach. In the following sections, analysis of data from MSM in Dhaka city are presented.

Socio-demographic characteristics (Table-9)

The average age of all MSM was 26.7 years and their mean years of schooling was 8.2 years. Majority of the MSM earned money from service in the last month. Most MSM (77%) identified themselves as being a "regular man" (man/manly/general people).

Table-9: Socio-demographic characteristics

Indicators	N=518, unless otherwise stated
Age (in years), % (95% CI)	
18-24	44.0 (38.4-49.8)
>24	56.0 (50.2-61.6)
Age (in years)	
Mean (95% CI)	26.7 (25.7-27.6)
Median (IQR)	25.0 (21.0-30.0)
Ever attended school, % (95% CI)	93.2 (90.0-95.5)
Years of schooling	
Mean (95% CI)	8.2 (7.7-8.8)
Median (IQR)	8.0 (5.0-11.0)
Years of schooling (Denominator is who ever attended school)	N=483
Mean (95% CI)	8.8 (8.3-9.4)
Median (IQR)	9 (6-12)
Duration of stay in Dhaka city, % (95% CI)	
Whole life	40.5 (35.2-46.1)
≤10 years	38.6 (32.7-44.9)
>10 years	20.8 (17.0-25.3)
Income in the last month (in taka)	N=517
Mean (95% CI)	11236.4 (10513.2-11959.7)
Median (IQR)	10000 (7000-14000)
Main source of income in the last month, % (95% CI)	
Service	56.4 (51.7-60.9)
Business	21.6 (17.5-26.4)
Family	9.8 (6.6-14.4)

Indicators	N=518, unless otherwise stated
Motor driver	4.4 (3.0-6.6)
Private tuition/Teacher	3.7 (2.4-5.6)
Day labour	1.5 (0.6-4.0)
Media/Dance	1.2 (0.5-2.6)
Rickshaw puller	0.6 (0.2-1.7)
Broker	0.4 (0.1-1.6)
Cook/Chef	0.2 (0.0-1.4)
Barber	0.2 (0.0-1.4)
Self-identification, % (95% CI)	
Man/Manly/General people	77.0 (72.2-81.2)
Kothi	13.5 (10.0-17.9)
Panthi	4.2 (2.7-6.5)
Gay	1.9 (1.0-3.6)
Hero	1.5 (0.8-3.0)
Do-parata	1.2 (0.5-2.7)
Parik	0.6 (0.2-1.8)

IQR refers to Inter Quartile Range

Marital status (Table-10)

The majority of MSM were currently unmarried. Overall, 63.1% had regular sex partners and among the married MSM, 62.5% had regular sex partners other than spouse. Having regular female sex partners was not uncommon as a substantial percentage of MSM reported this irrespective of their marital status. Their average age at first sex was 15.7 years and for the majority their first sex partner was a male. On average male to male sex had been practiced for nine years.

Table-10: Marital status and sex partners

Indicators	N=518, unless otherwise stated
Current marital status, % (95% CI)	
Married	29.3 (24.8-34.4)
Unmarried[§]	70.7 (65.6-75.2)
Currently living with spouse (Denominator is who were currently married), % (95% CI)	N=152 78.9 (71.8-84.6)
Currently had regular sex partners/parik[Φ], % (95% CI)	63.1 (55.5-70.1)
Currently had regular sex partners/parik besides spouse (Denominator is who were currently married), % (95% CI)	N=152 62.5 (53.1-71.1)
Currently had regular sex partners/parik (Denominator is who were currently unmarried), % (95% CI)	N=366 63.4 (54.7-71.3)
Gender of regular sex partners* (Denominator is who were currently unmarried and had regular sex partner)*, % (95% CI)	N=232
Male	94.8 (90.1-97.4)
Female	34.5 (27.0-42.8)
Hijra	4.7 (2.5-8.7)

Indicators	N=518, unless otherwise stated
Gender of regular sex partners besides spouse* (Denominator is who were currently married and had regular sex partner), % (95% CI)	N=95
Male	94.7 (88.0-97.8)
Female	51.6 (41.6-61.4)
Hijra	1.1 (0.1-7.3)
Age at first sex (in years)	
Mean (95% CI)	15.7 (15.4-16.0)
Median (IQR)	15.0 (14.0-17.0)
Gender of first sex partner, % (95% CI)	
Male	56.8 (51.8-61.5)
Female	42.9 (38.1-47.8)
Hijra	0.4 (0.1-1.4)
Duration of practicing male to male sex (in years)	
Mean (95% CI)	8.9 (7.9-9.8)
Median (IQR)	7.0 (3.0-12.0)

[§] Unmarried included divorced/widower/separated
[Φ]Male lover
[*]Multiple responses
IQR refers to Inter Quartile Range

Sexual history with male partners and condom use (Table-11, Figures 8-11)

Figures 8 and 9 show the percentages of MSM reporting anal sex and condom use with different partners during the last anal intercourse in the last 6 months and last one month.

More MSM had non-transactional sex with male/hijra than transactional male partners in the last six months (81.9%; 95% CI: 77.5-85.5 vs. 49.8%; 95% CI 42.0-57.6; $p<0.05$). However, no significant difference was observed in condom use between these two groups of sex partners in the last six months. In the last one month, a similar pattern was observed with regards to types of sex partners with non-transactional partners exceeding transactional partners but condom use was higher with transactional males ($p<0.05$ for both). Only six percent reported buying sex from hijra in the last one month.

Figure-8: History of anal sex and condom use during last anal intercourse in the last 6 months

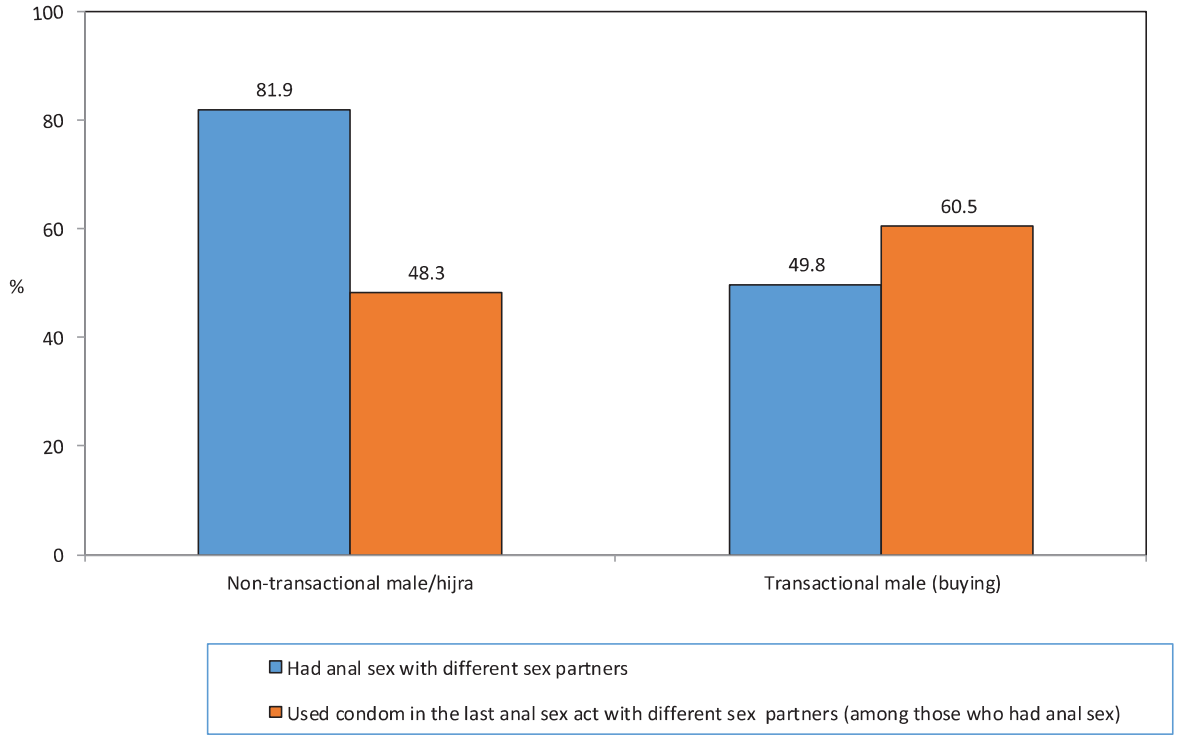
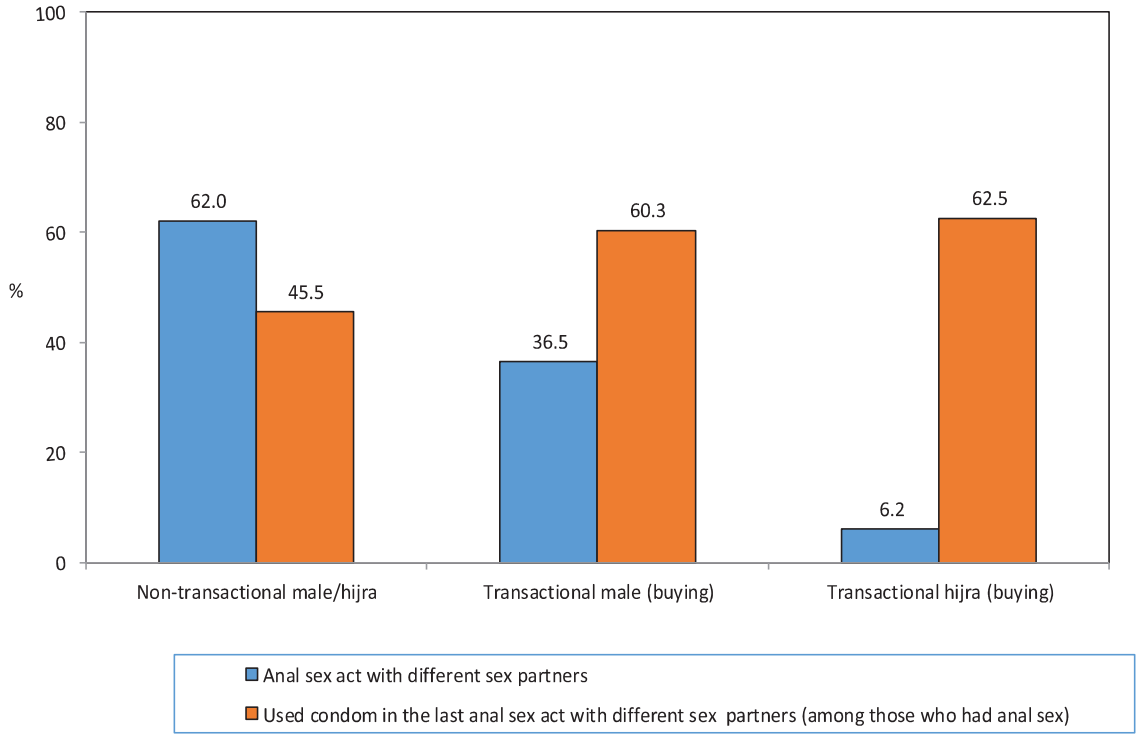


Figure-9: History of anal sex and condom use during last anal intercourse in the last month



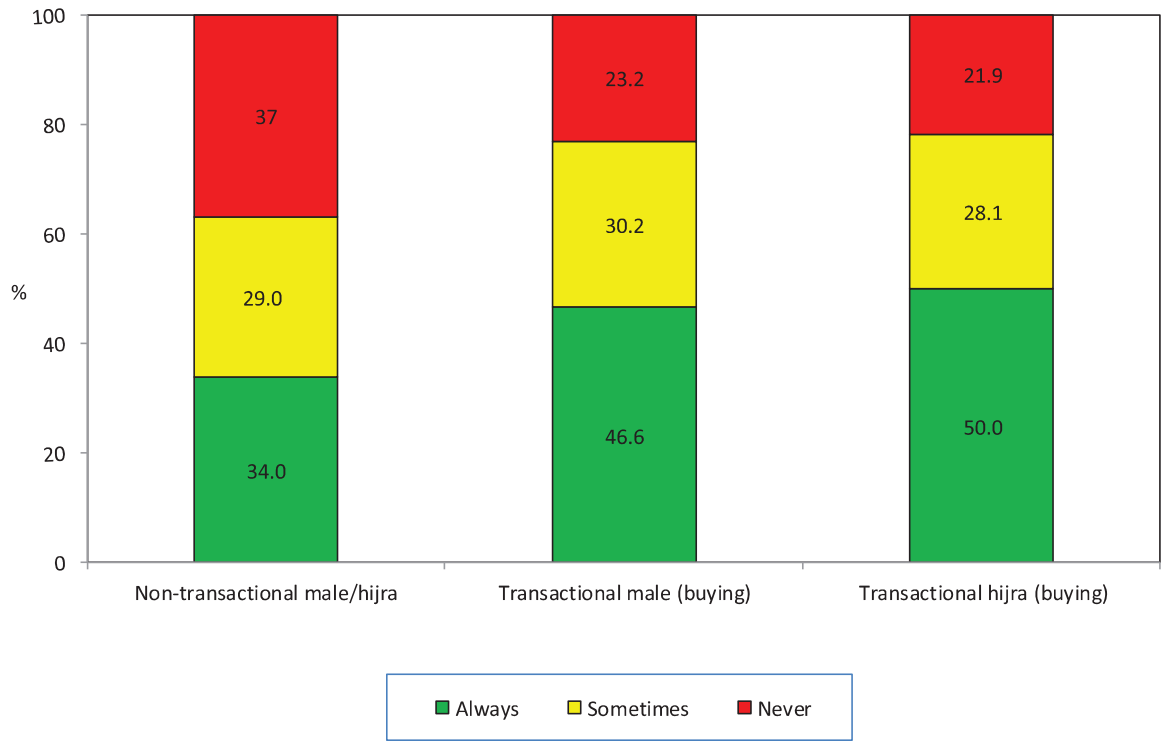
The vast majority (86.5%) of MSM had ever used a condom during anal intercourse. Half of the MSM reported using a condom during the last intercourse with a male sex partner in the last six months. Condom breakage while having sex in the last month was reported by 15.6% of MSM.

Table-11: Overall use of condom

Indicators	**N=518, unless otherwise stated % (95% CI)**
Ever used condom during anal sex	86.5 (82.1-89.9)
Used condom in the last anal intercourse with a male sex partner (Denominator is who had sex with a male in the last 6 months)	N=498 54.0 (48.4-59.5)
Had a condom break in the last month (Denominator is who had sex and used condom in the last month)	N=302 15.6 (11.7-20.3)

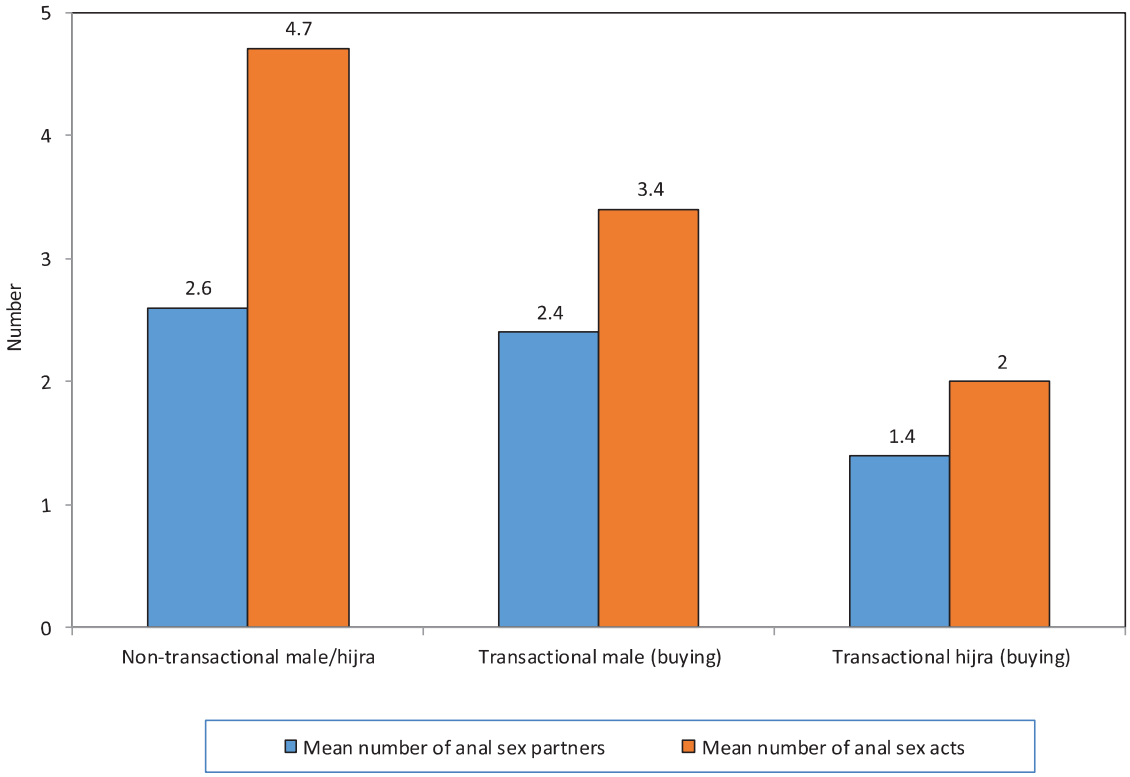
Figure-10 shows frequency of condom use during anal intercourse with different sex partners. Never using condoms during anal intercourse in the last month ranged from 21.9% - 37.1%.

Figure-10: Frequency of condom use during anal intercourse in the last month



The mean numbers of anal sex partners and anal sex acts with transactional and non-transactional sex partners are presented in Figure-11. The number of sex partners was similar whether with males or hijra and irrespective of whether this was transactional or non-transactional. The mean number of anal sex acts with each type of partner varied from 2-5 in the last month. The mean number of anal sex acts in the last month with males/hijra/females whether transactional or non-transactional was 4.3 (95% CI: 3.8-4.7).

Figure-11: Number of anal sex partners and anal sex acts of MSM in the last month



History of oral sex (Table-12)

More MSM reported having oral sex with non-transactional than with transactional male/hijra sex partners in the last month ($p<0.05$).

Table-12: History of oral sex with male/hijra sex partners

Indicators	N=518, unless otherwise stated
Non-transactional sex with male/hijra	
Had non-transactional oral sex with male/hijra sex partners in the last month, 95% CI	6.8 (4.8-9.4)
Number of male/hijra sex partners in the last month with whom non-transactional oral sex was performed (Denominator is who had non-transactional oral sex with males in the last month)	N=35
Mean (95% CI)	1.7 (1.3-2.1)
Median (IQR)	1.0 (1.0-2.0)
Buying sex from males	
Bought oral sex from male partners in the last month, 95% CI	2.5 (1.5-4.2)
Number of male sex partners in the last month from whom oral sex was bought (Denominator is who bought oral sex from males in the last month)	N=13
Mean (95% CI)	1.3 (1.0-1.6)
Median (IQR)	1.0 (1.0-1.0)

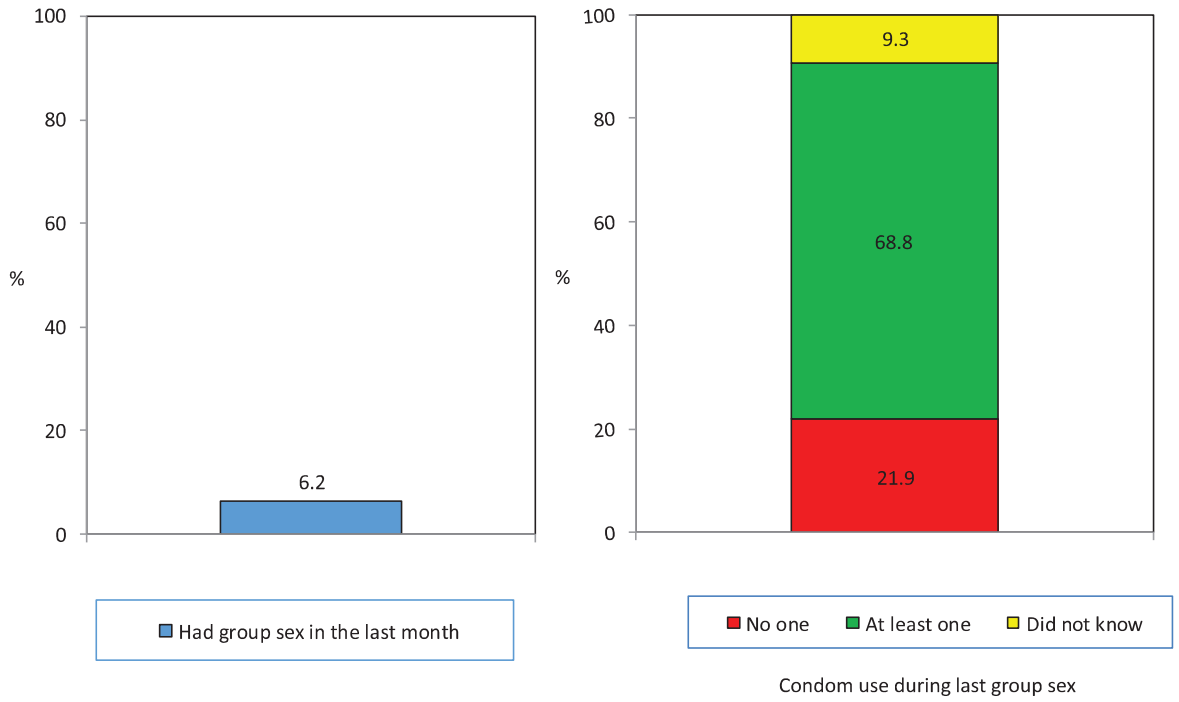
Indicators	N=518, unless otherwise stated
Buying sex from hijra	
Bought oral sex from hijra in the last month, 95% CI	0.2 (0.0-1.4)
Number of hijra in the last month from whom oral sex was bought (Denominator is who bought oral sex from hijra in the last month) Mean (95% CI) Median (IQR)	N=1 Only one person

IQR, Inter Quartile Range

History of group sex (Figure-12)

Approximately 6% of MSM had group sex in the last one month. The mean number of sex partners in the last group sex was 2.4 (95% CI: 2.1-2.7) (excluding the respondent). 21.9% (95% CI: 9.3-43.4) of MSM reported that no one used a condom during last group sex. However, 53.1% (95% CI: 33.9-71.5) reported that they themselves used a condom in the last group sex in the last month.

Figure-12: Groups sex and condom use in the last group sex



Sexual history with female sex partners (Figures 13-16)

A considerable percentage of MSM had female sex partners either transactional or non-transactional in the last month (Figure-13). Figure-13 also shows the percentage of MSM using condoms in the last vaginal/anal intercourse with females among those who had female sex partners in the last month. Condom use in transactional sex was higher than in non-transactional sex ($p<0.05$). For transactional sex, MSM were asked from which category of female sex worker they had last bought sex in the last month. Most said they had bought sex from hotel based female sex workers followed by street based female sex workers (Figure-14).

Figure-13: Percentages of MSM having sex with different type of females in the last month and using condoms during last sex

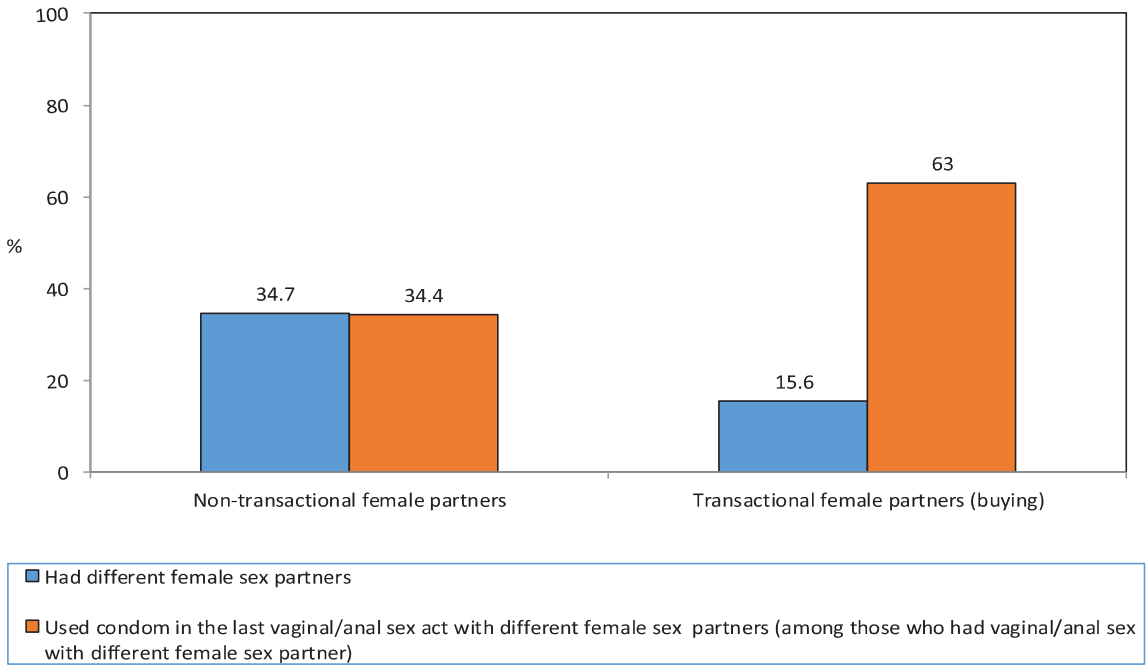
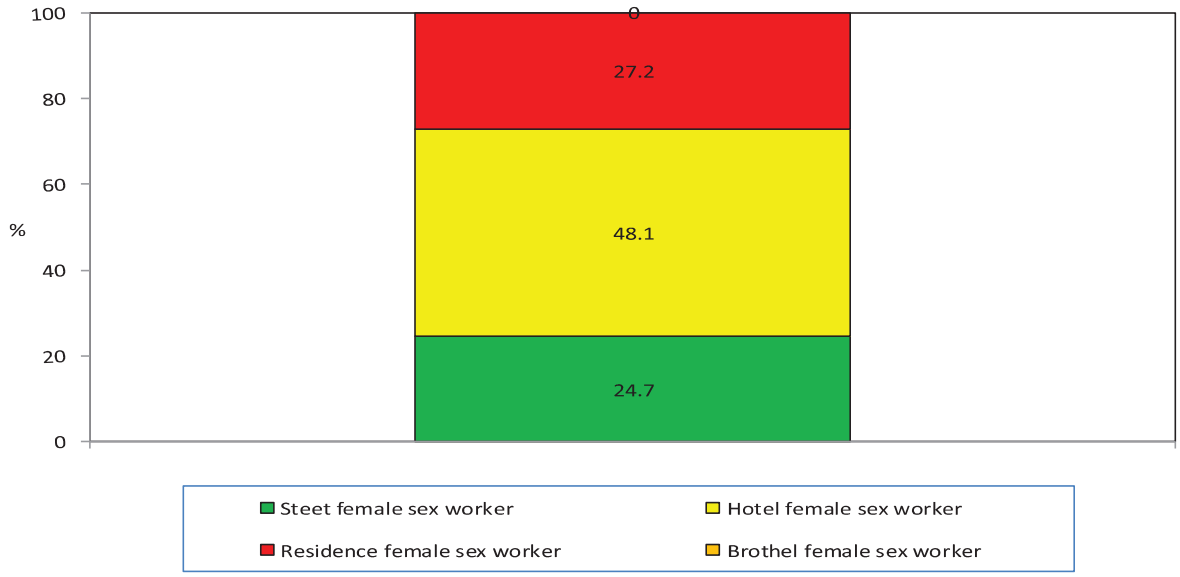


Figure-14: Percentages of MSM buying sex from different categories of female sex workers last time in the last month



The mean numbers of female sex partners (vaginal/anal) and vaginal/anal sex acts with different types of female sex partners are presented in Figure-15. On average, MSM had approximately one female sex partner for non-transactional sex and two for transactional sex in the last month. In the last month, MSM reported an average of six vaginal/anal sex acts with non-transactional and two with transactional female sex partners.

Figure-15: Mean number of female sex partners and vaginal/anal sex acts with females in the last month

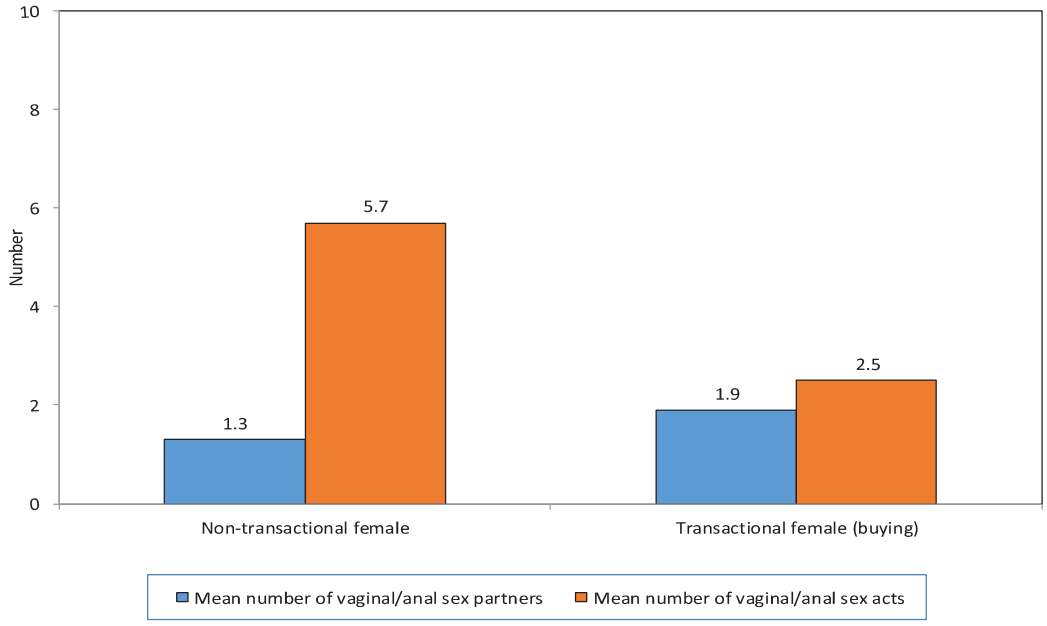
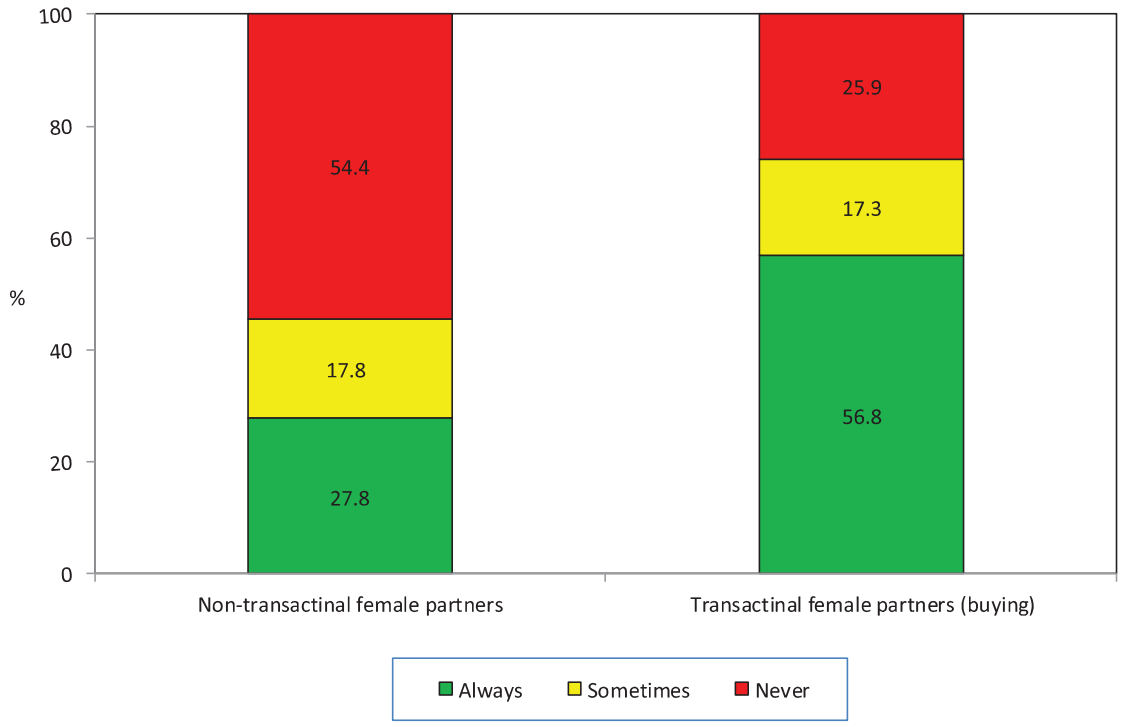


Figure-16 shows frequency of condom use during vaginal/anal sex acts with different female sex partners. More than 50% MSM said they had never used condom during non-transactional sex with their female partners in the last month. While buying sex from females in the last month, 25.9% (95% CI: 14.0-42.9) never used condoms.

In non-transactional sex never using condoms was reported by more MSM when this occurred with females compared to males, 54.4 (95% CI: 45.5-62.8) vs. 37.1 (30.9-43.7), respectively ($p<0.05$) (see Figures 10 and 16).

Figure-16: Frequency of condom use during vaginal/anal sex acts with females in the last month



Access to condoms (Table-13)

Among those who knew where condoms were available, the most common source mentioned by more than 95% of MSM was pharmacy. Among those who used condom in the last month more than 75% said they had easy access to condoms when they needed one. The two most common reasons for not having easy access to condoms were 'they were hesitant to buy' for various reasons such as shame/fear and that they were 'not willing to carry'.

Table-13: Access to condoms and ease of access

Indicators	N=518, unless otherwise stated % (95% CI)
Knowledge on the sources of condom*	
Pharmacy	95.4 (92.9-97.0)
Shop	49.4 (43.5-55.3)
Sex partners	36.1 (30.8-41.8)
HIV Prevention programmes (DIC/Depot holder /Outreach workers)	30.3 (24.4-37.0)
Friends	13.1 (10.1-16.9)
Bar/Guest house/Hotel	2.9 (1.6-5.1)
Health centre (besides DIC)	1.7 (0.9-3.5)
Don't know	0.2 (0.0-1.4)
Sources of condom in the last month* (Denominator is who had sex in the last month and used condom)	N=302
Pharmacy	77.2 (69.9-83.1)
Sex partner	48.0 (39.9-56.3)
HIV prevention programmes (DIC/Depot Holder/Outreach workers)	27.8 (20.8-36.1)
Shop	22.8 (18.0-28.6)
Friends	18.9 (14.7-23.9)
Bar/Guest house/Hotel	1.7 (0.7-3.9)
Pimps	0.3 (0.0-2.4)
Had easy access to condoms in the last one month	61.2 (56.1-66.1)
Had easy access to condoms in the last one month (Denominator is who used condom in the last month)	N=307
Yes	78.5 (72.8-83.3)
No	18.2 (14.0-23.4)
Condom was not needed	3.3 (1.6-6.4)
Reasons for not having easy access to condoms in the last month* (Denominator is who reported not having easy access to condoms in the last month)	N=56
Feel ashamed/Troublesome/Afraid to buy	48.2 (33.7-63.0)
Not willing to carry	46.4 (31.7-61.8)
DIC is far away	26.8 (14.9-43.3)
Shop/Pharmacy is closed	26.8 (16.8-39.8)
Shop/Pharmacy is far away	21.4 (12.5-34.2)
Didn't get peer educator when needed	17.9 (10.0-29.9)
DIC/Depot is closed	17.9 (9.8-30.2)
Cost is too high	3.6 (0.9-13.7)

*Multiple responses

Knowledge and use of lubricants (Table-14)

More than 90% of MSM said they had ever used lubricants while having anal intercourse and among those, 57.3% used saliva as a lubricant. A little more than 40% of MSM had heard about lubricants suitable for use with condoms and most of them were able to mention brand names. Using a water based lubricant with condom during last intercourse was reported by 45.7% of MSM. Among MSM who had heard about suitable lubricants and had anal intercourse in the last month 31.7% always used special lubricant together with a condom during anal intercourse. The main reason cited for always using lubricant with condoms, was to decrease pain/inflammation.

Table-14: Use of Lubricants

Indicators	N=518, unless otherwise stated % (95% CI)
Ever used lubricant while having anal intercourse	N=517 90.5 (87.3-93.0)
Types of lubricants used the last time* (Denominator is who had anal intercourse in the last year)	N=468
Saliva	57.3 (51.7-62.6)
Water based lubricant	44.2 (39.2-49.4)
Oil	22.2 (17.6-27.6)
Ordinary lotion/Petroleum jelly/Beauty cream	22.0 (18.4-26.1)
Antiseptic cream	0.9 (0.3-2.7)
Ever heard about lubricant made especially for use with condoms	49.4 (44.5-54.4)
Was able to mention brand name of such product (Denominator who ever heard about lubricant)	N=256 88.3 (84.1-91.5)
Name of the brand of lubricant (Denominator is who mentioned knowing the brand name of lubricant)	N=226
Lubricating gel	87.2 (79.1-92.4)
Sathi	12.8 (7.6-20.9)
Used condoms with lubricant during last intercourse	N=468 45.7 (40.6-50.9)
Frequency of using lubricant together with a condom during anal intercourse in the last month (Denominator is who had heard about lubricants designed for use with condoms and had anal sex in the last month)	N=227
Always	31.7 (24.9-39.4)
Sometimes	34.8 (27.8-42.5)
Never	32.6 (26.8-39.0)
Can't remember	0.9 (0.2-3.5)
Reasons for not using lubricant together with a condom never or sometimes in the last month (Denominator is who never or sometimes used condom and lubricant in the last month)*	N=153
Use other cream	37.9 (29.9-46.7)
Do not feel it is required	31.4 (25.5-37.9)
Shortage of supply	23.5 (17.4-30.9)
Not easy to carry	22.9 (17.0-30.1)
Do not perform well by using condom	12.4 (7.8-19.3)
Feel ashamed/troublesome/Afraid to buy	9.8 (6.3-15.0)
Do not know where to buy	8.5 (4.7-14.9)
Cost is too high	2.0 (0.5-7.5)
Reasons for always using condom and lubricant in the last month (Denominator is who always used condom and lubricant in the last month)*	N=72
Decrease pain/Inflammation	79.2 (63.9-89.1)
Enhance pleasure	59.7 (46.9-71.3)
Decrease risk of condom breakage	52.8 (39.7-65.5)
To avoid HIV/STIs	31.9 (21.6-44.4)

*Multiple responses

Knowledge of STIs, self-reported STIs and care-seeking behaviour (Table-15)

Approximately 18% of MSM had no knowledge about STI symptoms. The most common symptom reported was genital ulcer/sore. Six percent of MSM complained of at least one STI symptom in the last one year and among them, 48.4% said that a qualified practitioner was their first choice for STI treatment.

Table-15: Knowledge of, self-reported STIs and care-seeking behaviour

Indicators	N=518, unless otherwise stated
Knowledge about STI symptoms*, 95% CI	
Genital ulcer/Sore	59.1 (53.5-64.5)
Burning pain on urination	53.3 (47.5-59.0)
Discharge from penis	34.9 (29.9-40.4)
Anal ulcer/Sore	18.9 (15.5-22.9)
No knowledge about STI symptoms	17.6 (13.0-23.3)
Anal discharge	3.5 (2.1-5.7)
Swellings in groin area	3.1 (1.7-5.6)
Complained of urethral discharge in the last year, 95% CI	N=516 2.7 (1.8-4.1)
Complained of anal discharge in the last year, 95% CI	N=517 0.8 (0.3-2.0)
Complained of genital ulcer/sore in the last year, 95% CI	N=517 3.9 (2.5-5.8)
Reported having at least one STI symptom (urethral discharge or anal discharge or genital ulcer/sore) in the last year, 95% CI	6.0 (4.5-8.0)
The first choice of the last STI treatment in the last year (Denominator is who reported STI symptoms in last year), 95% CI	N=31
Pharmacy	25.8 (13.7-43.2)
NGO clinic	19.4 (8.5-38.1)
Advice/Treatment from friends	12.9 (4.7-30.8)
Govt. Hospital	12.9 (4.9-29.9)
Private doctor/Private clinic	16.1 (6.6-34.5)
Canvasser/Traditional healer	6.5 (1.4-24.4)
Did not seek treatment	6.5 (1.4-24.4)
The first choice for seeking care for the last STI symptom in the last year (Denominator is who reported STI symptoms in last year), 95% CI	N=31
Qualified practitioner[θ]	48.4 (30.6-66.6)
Un-qualified practitioner[¶]	45.2 (27.9-63.7)
No treatment	6.5 (1.4-24.4)
Waiting days for the last STI treatment in the last year (Denominator is who sought STI treatment in last year)	N=29
Mean (95% CI)	5.4 (3.1-7.6)
Median (IQR)	3.0 (2.0-7.0)
Expenditure (in Taka) for the last STI treatment in the last year (Denominator is who reported STI symptoms in the last year and sought treatment)	N=27
Mean (95% CI)	542.2 (362.5-721.9)
Median (IQR)	320.0 (200.0-1000.0)

[θ]Qualified practitioner refers to hospital, private clinic, private doctor and NGO clinic

[¶] Un-qualified practitioner refers to drug seller, canvasser/traditional healer, advice/treatment from friends and self-medication

[*]Multiple responses

IQR refers to Inter Quartile Range

Knowledge of HIV and its modes of prevention and transmission (Table-16)

Knowledge regarding HIV/AIDS was almost universal. However, misconceptions about the transmission of HIV especially that HIV can be transmitted by mosquito bites and sharing food with an HIV infected person, was not uncommon. Only 35.5% had comprehensive knowledge of HIV.

Table-16: Knowledge of and modes of HIV transmission

Indicators	**N=518, unless otherwise stated % (95% CI)**
Heard about HIV/AIDS	99.2 (97.9-99.7)
Mentioned condom use (correctly and consistently in any type of sex) as a mode of prevention	94.4 (91.9-96.2)
Mentioned avoiding anal sex as a mode of prevention	60.2 (55.2-65.0)
Mentioned avoiding multiple sex partners as a mode of prevention	72.8 (67.9-77.2)
Mentioned HIV can be transmitted by mosquito bites	30.9 (26.1-36.1)
Mentioned HIV can be transmitted by sharing food with an HIV infected person	27.2 (22.9-32.0)
Mentioned not sharing needles/syringes as a mode of prevention	83.4 (79.1-87.0)
Mentioned one can tell by looking at someone whether he/she is infected with HIV	7.5 (5.1-10.9)
Had comprehensive knowledge of HIV[§]	35.5 (31.2-40.1)

[§]This indicator was computed by correct answers to five questions:

1. Can people reduce their risk of HIV by using a condom correctly and consistently in any type of sex,
2. Can people reduce their risk of HIV by avoiding sex with multiple partners,
3. Can a person get HIV through mosquito bites,
4. Can a person get HIV by sharing a meal with someone who is HIV infected and
5. Can you tell by looking at someone whether s/he is infected with HIV

Confidential HIV testing (Table-17)

Only 27.4% of MSM knew where HIV could be tested confidentially with pre and post counselling facilities and 19.5% said they had been tested sometime in their lives. Of those who had been tested for HIV 91.1% were tested at DICs run by HIV prevention NGOs dedicated to MSM/MSW. In the last year, only 10.6% MSM underwent HIV testing and counselling and knew their result.

Table-17: Confidential HIV testing

Indicators	**N=518, unless otherwise stated % (95% CI)**
Knew where HIV can be tested confidentially	27.4 (22.3-33.2)
Ever tested for HIV	19.5 (15.3-24.5)
Name of HIV testing facility (Denominator is who had ever tested for HIV)	N=101
Government hospital	0
HIV prevention NGOs	91.1 (83.4-95.4)
HTC centres in other NGOs	6.9 (3.2-14.4)
Outside country	2.0 (0.5-7.7)
Motivation for testing for HIV (Denominator is who had ever tested for HIV)	N=101
Self-motivated	54.5 (44.1-64.5)
Someone advised	45.5 (35.5-55.9)
Who inspired testing for HIV (Denominator is who had ever tested for HIV and someone advised)	N=46
NGO worker	54.3 (40.8-67.3)
Friends	41.3 (28.9-54.9)
Sex partner	4.3 (0.5-27.9)
Received HIV testing result (Denominator is who had ever tested for HIV)	N=101 90.1 (81.5-94.9)
Time since the most recent HIV test (Denominator is who had ever tested for HIV)	N=101
Within one year	61.4 (50.2-71.5)
More than one year	38.6 (28.5-49.8)
Received HIV testing and counselling in the last year and knew the result[Φ]	10.6 (7.8-14.3)

[Φ]This indicator was computed by combining responses from two questions:

1. Have you been tested for HIV in the last 12 months?
2. If yes, I don't want to know the results, but did you receive the results of that test?

Self-perception of risk of HIV and reasons for those perceptions (Table-18)

66.6% MSM perceived themselves to be at little or no risk of HIV of whom 41.2% mentioned that this was because they always used condoms. However, 12.7% MSM were not able to assess their own risk. Among those who assessed themselves to be at high or medium risk of HIV, the majority mentioned irregular use of condoms as one of the reasons for such an assessment.

Table-18: Self-perception of risk of HIV and their reason

Indicators	N=518, unless otherwise stated % (95% CI)
Considered themselves to be at risk for HIV	
High risk	5.0 (3.3-7.7)
Medium risk	15.6 (12.2-19.9)
Little risk or no risk	66.6 (62.3-70.7)
Not able to assess own risk	12.7 (9.7-16.6)
Reasons for assessing themselves to be at high or medium risk (Denominator is who thought themselves to be at high or medium risk)*	N=107
Irregular use of condoms	73.8 (64.4-81.5)
Risky behaviour	41.1 (31.2-51.8)
Frequent anal sex	29.9 (21.8-39.5)
Do not use condoms	15.9 (9.4-25.6)
Reasons for assessing themselves to be at little or no risk (Denominator is who perceived themselves to be at little or no risk)*	N=345
Be neat and clean	52.8 (46.4-59.0)
Always used condoms	41.2 (34.6-48.0)
Wash genitals after sex	36.5 (32.5-40.8)
Irregular use of condom	31.9 (26.6-37.6)
Have less sex	27.0 (22.6-31.9)
Have sex with clean/Healthy sex partners	24.6 (19.4-30.7)
Have sex with trusted sex partners	15.1 (11.1-20.2)
I am healthy	2.6 (1.3-5.3)
Avoid sex with female sex workers	0.3 (0.0-2.2)
Never share needle/syringes	0.3 (0.0-2.1)

*Multiple responses

Measures taken to avoid STIs and HIV (Table-19)

The most common method used for avoiding STIs was washing genitalia; only 30.3% of the MSM said that they always used condoms to avoid STIs. A similar scenario was observed for avoiding HIV.

Table-19: Measures taken to avoid STIs and HIV

Indicators	N=518, unless otherwise stated % (95% CI)
Measures taken to avoid STIs*	
Wash genital organs with water/soap/Dettol/urine	38.6 (34.1-43.4)
Sometimes used condoms	36.9 (32.2-41.8)
Sex with clean partners	31.5 (26.7-36.6)
Always used condoms	30.3 (25.9-35.1)
Nothing	15.3 (11.7-19.7)
Have sex with trusted partners	10.6 (8.2-13.6)
Avoid female sex workers	5.8 (4.0-8.4)
Have less sex	1.2 (0.5-2.7)
Measures taken to avoid HIV*	
Sometimes used condoms	37.6 (33.3-42.2)
Wash genital organs with water/soap/Dettol/urine	37.3 (33.2-41.5)
Avoid female sex workers	31.5 (26.8-36.5)
Always used condoms	30.3 (25.9-35.1)
Nothing	14.9 (11.6-18.9)
Sex with trusted partners	14.1 (10.7-18.3)
Have less sex	1.0 (0.4-2.2)

*Multiple responses

Violence against MSM (Table-20)

In the last year 13.5% were either beaten or raped. Local people were most commonly responsible for beating while new/regular sex partners were the perpetuators of rape. Approximately 5% were jailed in the last year and about two third of them mentioned section-54 (this clause allows arrest without warrant for suspicious behaviour) as the reason for being jailed.

Table-20: Violence

Indicators	N=518, unless otherwise stated % (95% CI)
Was beaten in the last year	12.0 (9.3-15.3)
Beating was perpetuated by* (Denominator is who was beaten in the last year)	N=62
Local people	35.5 (24.0-48.9)
Mastans (Hoodlums)	22.6 (14.2-33.9)
Relative	19.4 (11.1-31.5)
Men in uniform	17.7 (10.2-29.2)
Regular sex partner	6.5 (2.7-14.7)
Was raped in the last year	2.9 (1.8-4.5)
Was beaten or raped in the last year	13.5 (10.7-16.9)
Rape perpetuated by* (Denominator is who was raped in the last year)	N=15
Sex partner	73.3 (42.9-91.0)
Relative	26.7 (9.0-57.1)
Colleague	6.7 (0.7-41.6)

Indicators	N=518, unless otherwise stated % (95% CI)
Was jailed in the last year	4.6 (3.0-7.0)
Reasons for being sent to jail in the last year (Denominator is who was jailed in the last year)	N=24
Section-54[§]	62.5 (40.3-80.4)
While having sex	16.7 (5.5-40.6)
For fighting	12.5 (4.0-33.1)
Gambling	8.3 (1.8-31.6)

[*]Multiple responses

[§] When police may arrest without any warrant for any suspicious behaviour

Mobility (Table-21)

More than half MSM travelled to another city in the last year. Amongst those who travelled to another city, 19.5% bought sex and 33.6% reported having non-transactional sex during such travel.

Travelling abroad was not common; only 3.5% travelled abroad in the last year. Of the 18 MSM who travelled abroad in the last year, 14 went to India. The cities travelled to in India were Kolkata, Delhi, Darjeeling and Shillong. Few MSM reported having both transactional and non-transactional sex while they were abroad.

Table-21: Mobility

Indicators	N=518, unless otherwise stated % (95% CI)
Travel within country	
Visited another city in the last year	53.5 (48.6-58.3)
Bought sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=277 19.5 (14.5-25.7)
Used condom in the last intercourse while buying sex in another city in the last year (Denominator is who visited another city and bought sex there in the last year)	N=54 61.1 (38.8-79.5)
Had non- transactional sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=277 33.6 (28.6-39.0)
Used condom in the last non-transactional sex in another city in the last year (Denominator is who visited another city and had non-transactional sex in the last year)	N=93 40.9 (31.5-50.9)
Travel abroad	
Travelled abroad in the last year	3.5 (2.2-5.4)
Had transactional sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=18 16.7 (4.6-45.3)
Used condom in the last transactional sex while abroad in the last year (Denominator is who travelled abroad and bought sex in the last year)	N=3 66.7 (0.3-99.9)
Had non-transactional sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=18 22.2 (8.7-46.2)
Used condom in the last non- transactional sex while abroad in the last year (Denominator is who travelled abroad and had non-transactionalsex in the last year)	N=4 0

Exposure to HIV/AIDS prevention programmes (Table-22)

Participation in HIV prevention programmes provided by NGOs, self-help groups and CBOs at any time in their lives was reported by 23% of MSM and 18.9% did so in the last year. The vast majority amongst those who participated in HIV/AIDS prevention programmes either in the last one month or last one year said they had received condoms and lubricants. 83.7% mentioned that they had learnt about HIV/AIDS/STDs/safe sex and correct use of condoms by attending these programmes.

Table-22: Exposure to HIV/AIDS prevention programmes

Indicators	**N=518, unless otherwise stated**
Ever participated in HIV/AIDS prevention programmes, 95% CI	23.0 (18.5-28.2)
Time (in months) since the last participation in HIV/AIDS prevention programmes (Denominator is who had ever participated in any HIV/AIDS intervention programmes)	N=113
Mean (95% CI)	4.2 (2.6-5.8)
Median (IQR)	0.0 (0.0-6.0)
Duration (in months) of involvement with HIV/AIDS prevention programmes (Denominator is who had ever participated in any HIV/AIDS intervention programmes)	N=111
Mean (95% CI)	36.7 (32.4-41.0)
Median (IQR)	36.0 (16.0-60.0)
Participated in any HIV/AIDS prevention programmes in the last year, 95% CI	18.9 (14.7-23.9)
Participated in any HIV/AIDS prevention programmes in the last three months, 95% CI	12.7 (9.6-16.8)
Participated in any HIV/AIDS prevention programmes in the last month, 95% CI	11.6 (8.8-15.1)
Number of times participated in the prevention programmes in the last month (Denominator is who had participated in the HIV/AIDS prevention programmes in the last month)	N=60
Mean (95% CI)	2.4 (1.9-2.9)
Median (IQR)	2.0 (1.0-3.0)
Reported being involved with different types of prevention programmes in the last month* (Denominator is who participated in any HIV/AIDS prevention programmes in the last month), 95% CI	N=60
Received condoms	96.7 (87.4-99.2)
Received lubricants	90.0 (78.4-95.7)
Received treatment for general health problems	53.3 (40.3-65.9)
Attended educational programmes	50.0 (36.4-63.6)
Attended DIC for rest and recreation	43.3 (30.5-57.2)
Received HTC	43.3 (29.5-58.3)

Indicators	N=518, unless otherwise stated
Received treatment for STIs	26.7 (17.4-38.5)
Reported being involved with different types of prevention programmes in last year* (Denominator is who participated in any HIV/AIDS prevention programmes in the last year), 95% CI	N=98
Received condoms	89.8 (82.4-94.3)
Received lubricants	81.6 (74.2-87.3)
Attended educational programmes	53.1 (42.3-63.5)
Received HTC	43.9 (33.4-54.9)
Received treatment for general health problems	42.9 (33.6-52.7)
Attendant DIC for rest and recreation	42.9 (33.5-52.8)
Received treatment for STIs	22.4 (15.1-31.9)
Received vocational Training	1.0 (0.1-7.4)
Received a combination of HIV/AIDS prevention programmes in the last three months[§], % (95% CI)	4.4 (2.7-7.1)
Reached with HIV/AIDS prevention programmes in the last year[ϕ], 95% CI	14.7 (11.3-18.8)
Benefited from HIV/AIDS prevention programmes in the last year* (Denominator is who had participated in any HIV/AIDS prevention programmes in the last year)*, 95% CI	N=98
Learnt about HIV/AIDS/STD/Safe sex and correct use of condom	83.7 (75.4-89.5)
Helped in changing risk behaviour	55.1 (44.1-65.6)
Received useful information but did not change behaviour	18.4 (10.8-29.6)
Information was hard to understand	1.0 (0.1-7.6)
Information was not relevant to their needs	1.0 (0.1-7.4)

[§]Who received at least two services in the last three months: condom/lubricant/counselling on condom use and safe sex/STI services from NGOs

[ϕ]This indicator was computed by combining the responses from two questions:

1. Do you know where you can go if you wish to receive an HIV test?
2. In the last twelve months, have you been given condoms? (e.g. through an outreach service, drop-in centre or sexual health clinic)

[*]Multiple responses

IQR refers to Inter Quartile Range

Venues/usual means for meeting friends and sex partners (Table-23)

Although 'at home' was very commonly stated as the venue for meeting friends, the most common means of contacting sex partners was the cell phone (92.9%; 95% CI: 89.6-95.1). Internet (e-mail/social media) was used for these purposes by 18% of MSM.

Table-23: Venue for meeting friends and sex partners

Indicators	N=518, unless otherwise stated % (95% CI)
Usual meeting place with friends*	
At home	68.9 (63.8-73.6)
Tea stall/Bazaar/Market	67.2 (60.3-73.4)
Cruising spot	48.3 (40.5-56.1)
On the street	41.9 (35.9-48.2)
Working place	32.8 (26.9-39.4)
Club/Party	9.1 (6.2-13.2)
School/College/Madrasa	3.3 (1.8-6.0)
Hotel/Boarding	2.9 (1.9-4.4)
Venues/usual means of contacting male sex partners*	
By cell phone	92.9 (89.6-95.1)
Cruising spot	38.2 (29.7-47.5)
Tea stall/Bazaar/Market	42.5 (35.0-50.3)
On the street	29.7 (24.8-35.2)
At home	29.3 (25.3-33.7)
Working place	18.9 (14.3-24.5)
Friends	18.7 (13.6-25.1)
Internet (social media, email)	18.0 (14.0-22.7)
Club/Party	3.7 (2.2-6.0)
School/College/Madrasa	2.1 (1.1-4.2)
Hotel/Boarding	2.1 (1.0-4.6)

*Multiple responses

Using illicit drugs (Table 24)

Using illicit drugs (except alcohol and cannabis) was reported by 16.8% in the last year. MSM most commonly took methamphetamine followed by the codeine containing cough syrup, Phensidyl. Only three MSM said they had injected drugs in the last year and none of them were engaged with the harm reduction programme.

Table-24: Using illicit drugs

Indicators	N=518, unless otherwise stated % (95% CI)
Took any illicit drugs (except alcohol and cannabis) in the last 12 months	16.8 (12.5-22.2)
Type of drugs taken in the last 12 months*	N=87
Methamphetamine (Yaba)	73.6 (62.6-82.2)
Codeine containing cough syrup (Phensidyl)	33.3 (23.7-44.6)
Buprenorphine/Pethedine	3.4 (1.3-9.1)
Heroin	2.3 (0.5-9.3)
Injected drugs in the last 12 months	0.6 (0.2-1.7)

*Multiple responses

History of selling blood

The percentage of MSM who said they had sold blood in the last year was small 0.4% (95% CI: 0.1-1.5).

History of taking female hormones (Table-25)

Taking oestrogen and progesterone containing hormone tablets was not common and reported by only 1.7% of MSM. The most common reason for taking these hormones was for breast enhancement.

Table-25: History of taking female hormone

Indicators	**N=518, unless otherwise stated % (95% CI)**
Ever took female hormones	1.7 (0.9-3.4)
Took female hormones in the last 3 months (Denominator is who ever took hormones)	N=9 77.8 (36.9-95.4)
Reasons for taking female hormones* (Denominator is who had taken female hormones in the last three months)	N=7
To enhance breast size	7
To improve shape of thigh/hip	1
To increase smoothness of skin	2

*Multiple responses

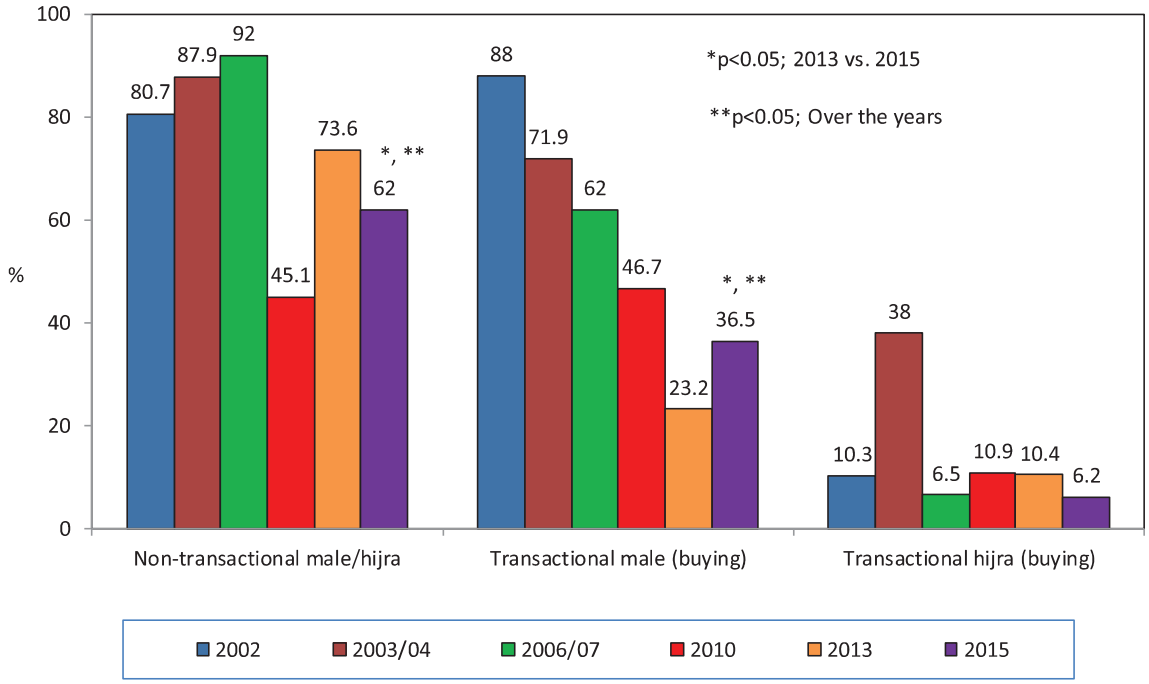
B. Changes in some key risk behaviours over the years of surveillance in Dhaka

Changes in some selected risk behaviours have been compared over the years of BSS from 2002-2015 in Dhaka. Analysis to assess changes between the last and present BSS conducted in 2013 and 2015 respectively was also carried out.

Male/hijra Sex Partners in the Last Month

Figure-17 shows the percentages of different types of male/hijra sex partners of MSM in the last one month. The percentages of MSM who had sex with non-transactional males declined both over the time and in 2015 compared to 2013 ($p<0.05$ for both). The percentages of MSM who bought sex from males declined significantly over time but increased in 2015 compared to 2013 ($p<0.05$ for both). No changes were observed for those buying sex from hijra.

Figure-17: Had sex in the last month



Condom Use in the last month

With different type of sex partners both condom use in the last intercourse and consistent condom use in the last one month significantly increased over time (Figure-18) ($p<0.05$). However, no changes were observed between 2013 and 2015. MSM were also asked whether a condom was used while having anal sex with any male sex partner (irrespective of partner type) last time in the last six months. Significantly more MSM used a condom in the last anal sex act with a male sex partner over the years from 2010 to 2015 ($p<0.05$) (Figure-19).

Figure-18: Condom use in the last sex and last month

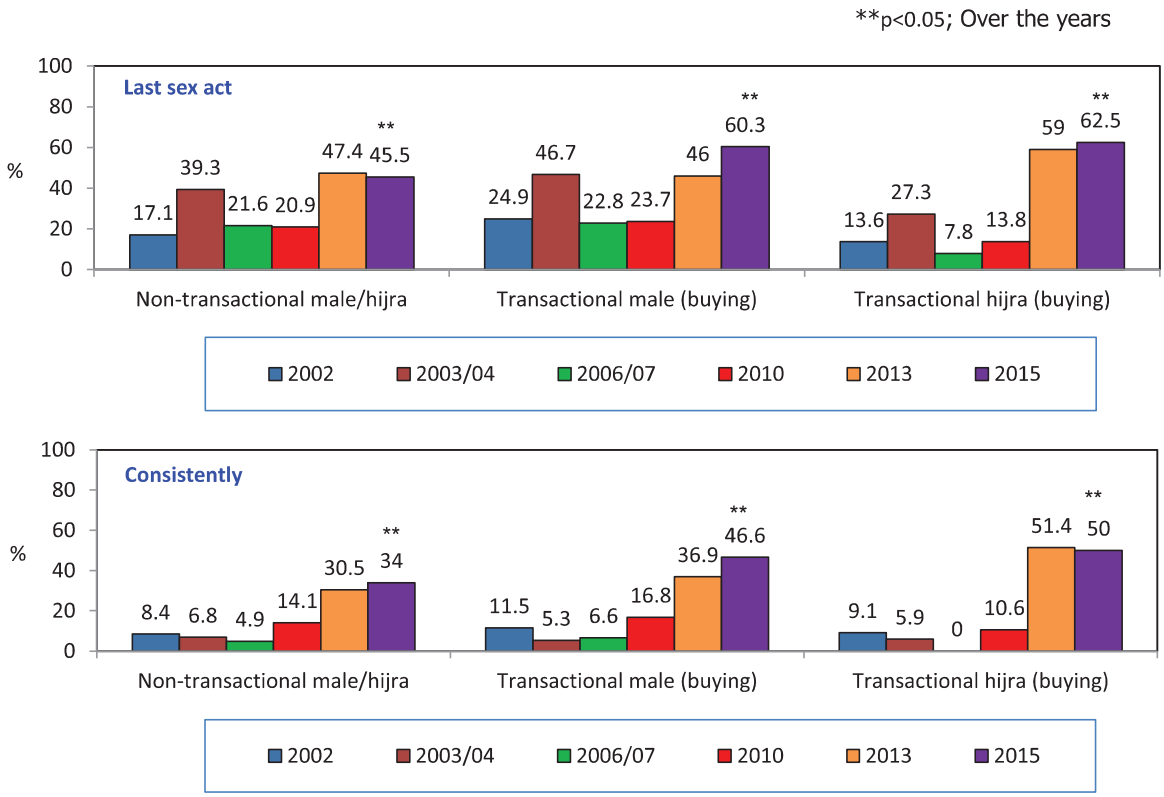
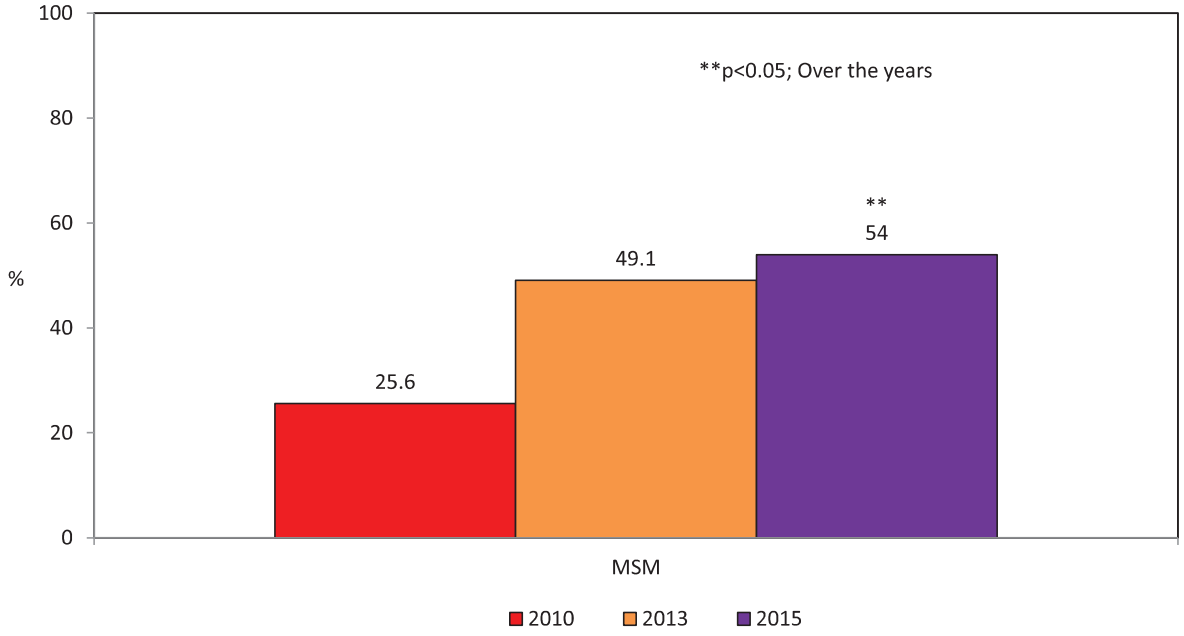


Figure-19: Condom use in the last anal sex act with any male sex partner‡



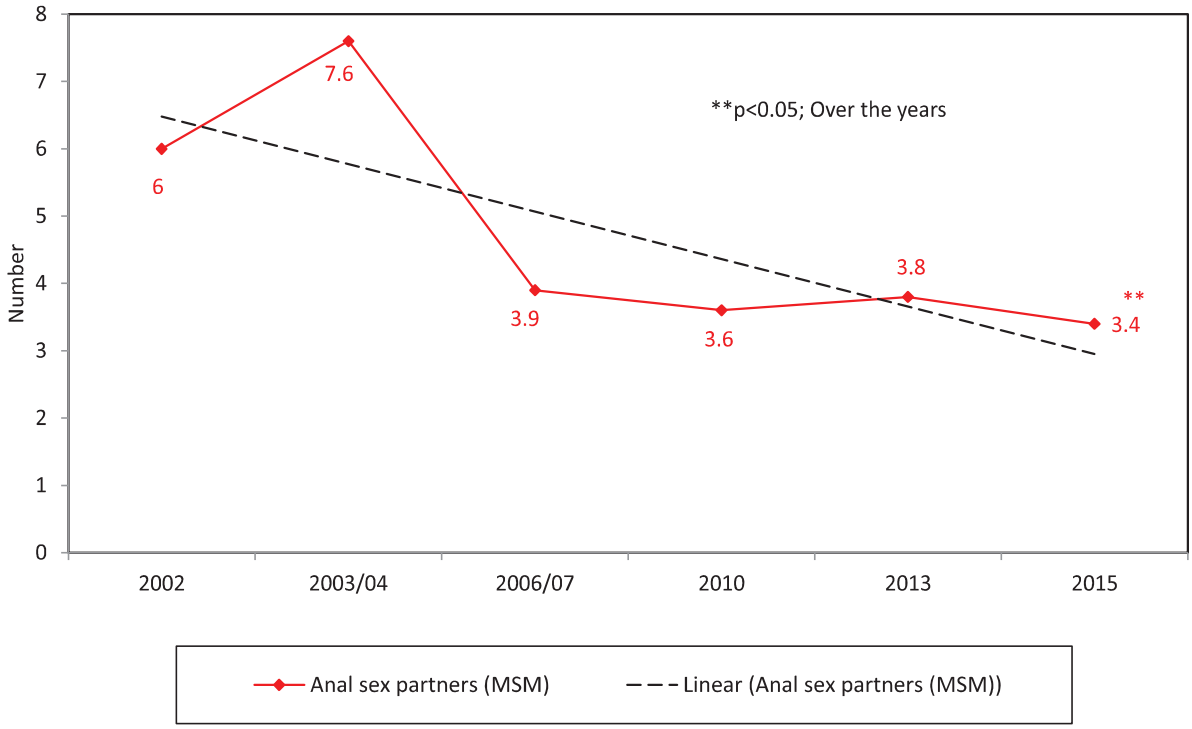
‡For MSM in the last six months

Note: Information before 2010 not available

Number of sex partners in the last month

The mean number of male/hijra sex partners in the last one month declined significantly over time (as denoted by the dashed line in Figure-20) ($p<0.05$). However, no change was observed between 2013 and 2015.

Figure-20: Mean number of male/hijra sex partners in the last month



Group sex and condom use

The percentage of MSM reporting group sex in the last one month declined significantly over time (Figure-21) ($p<0.05$). However, no changes were observed in condom use in the last group sex over time (Figure-22).

Figure- 21: Had group sex in the last month

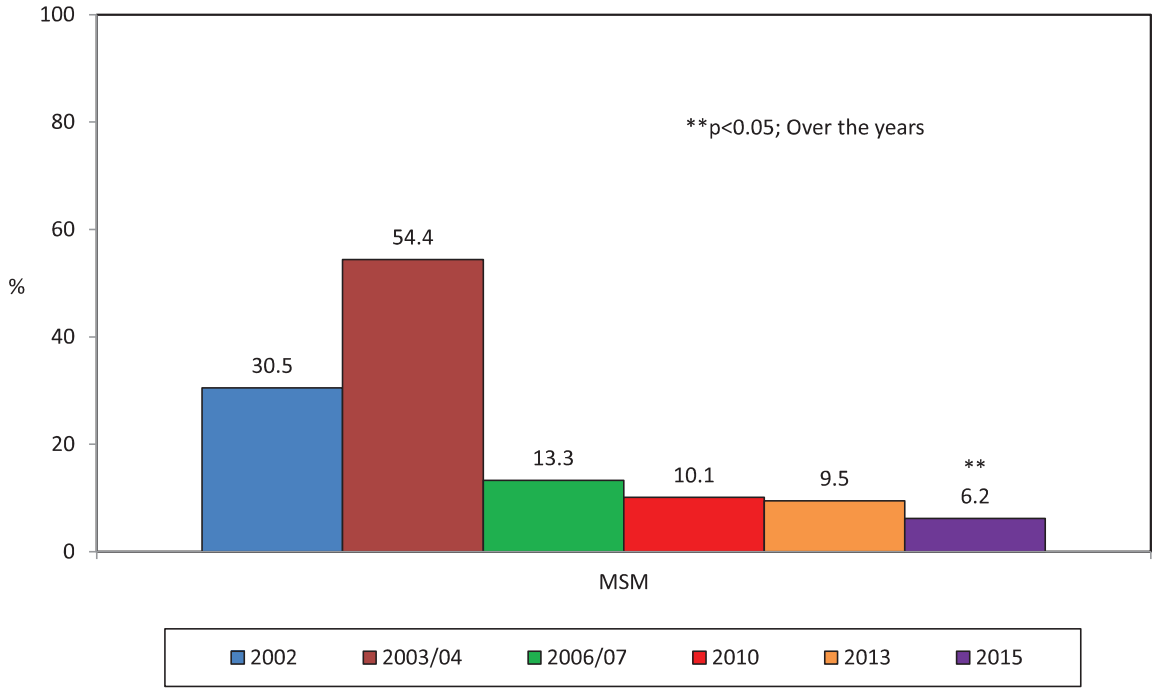
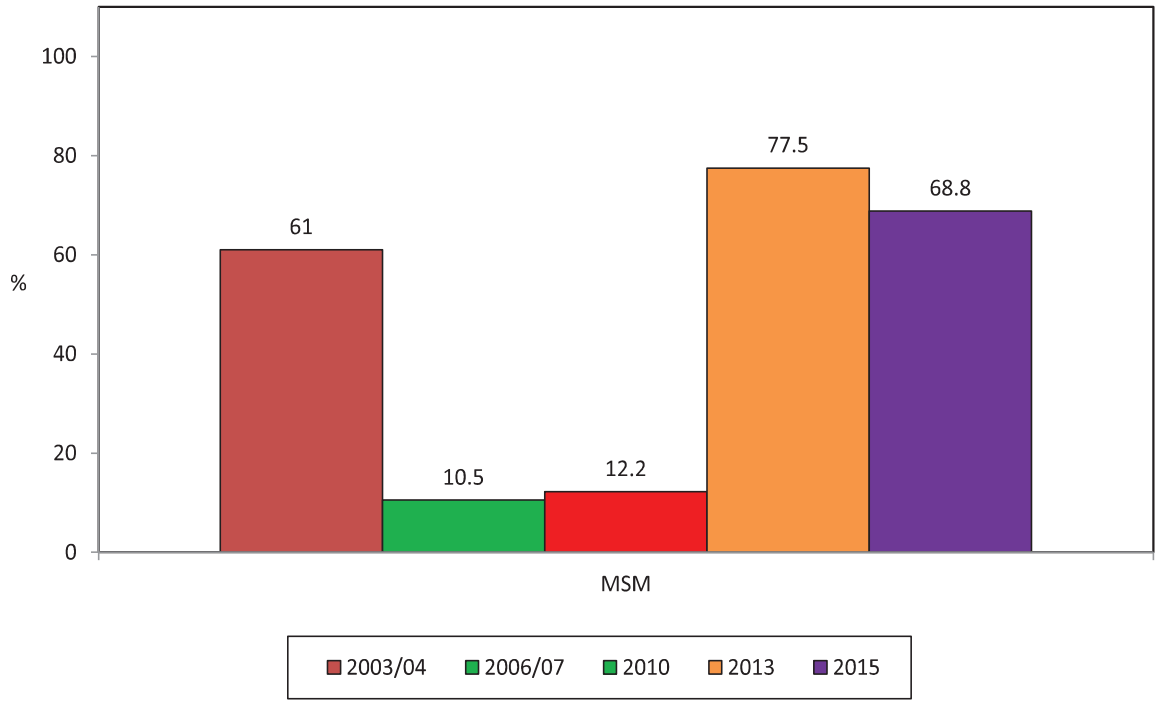


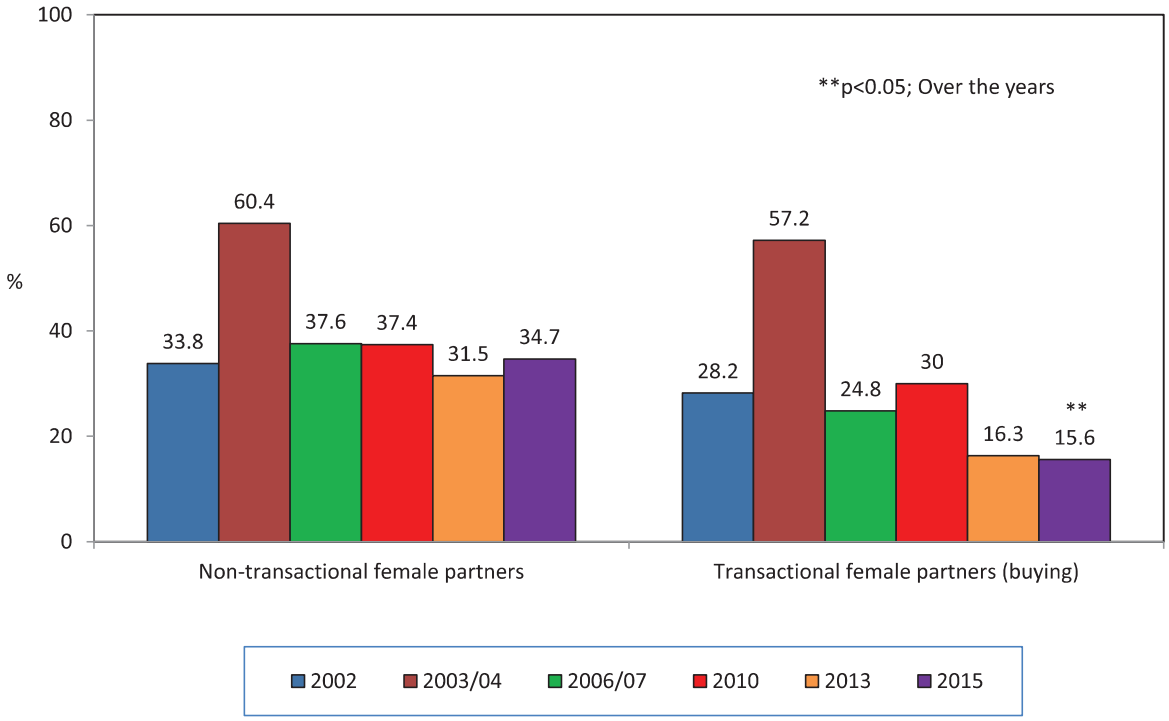
Figure-22: At least one sexual partner used condom during last group sex in the last month



Sex with females in the last month

Over the years buying sex from females declined significantly (p<0.05) but there were no changes in percentages having non-transactional sex with females (Figure-23). Percentages reporting sex with females, whether transactional or non-transactional, did not change in 2015 compared to 2013.

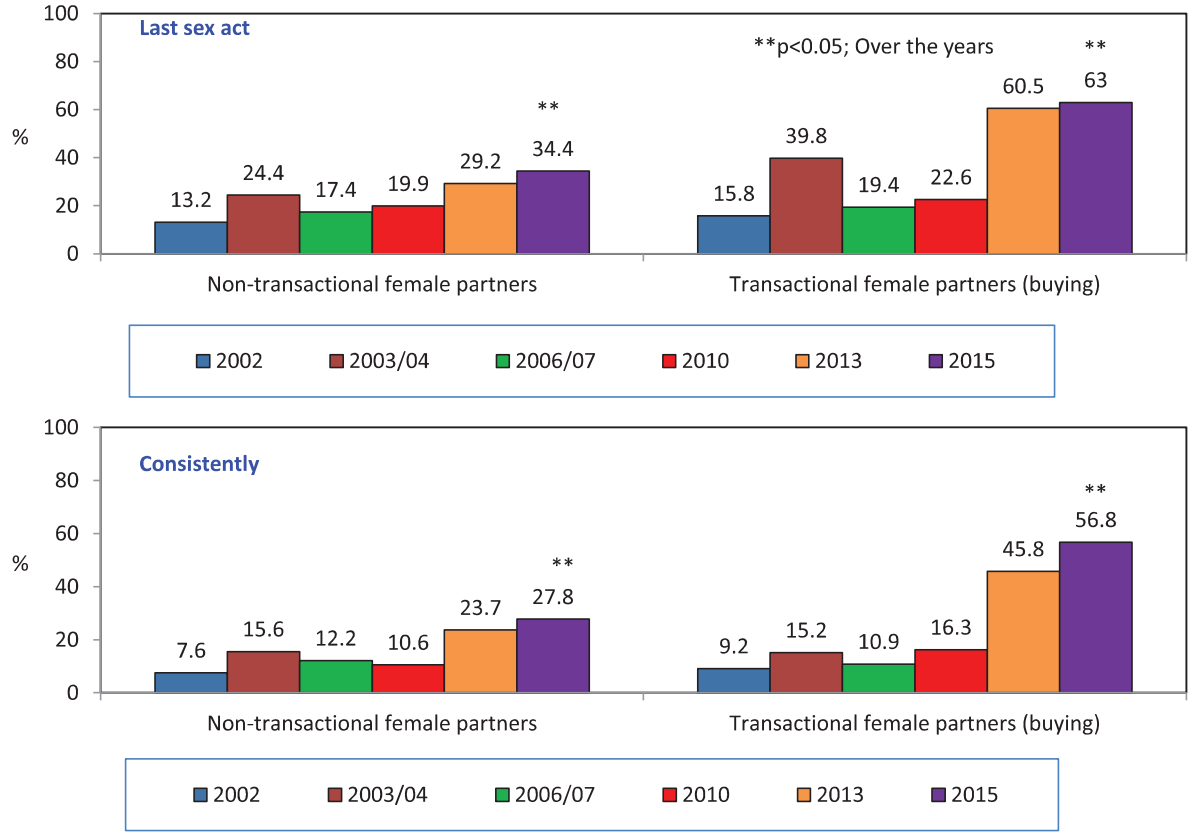
Figure-23: Sex with females in the last month



Condom use with females in the last month

The percentages of MSM reporting last time condom use and consistent condom use during non-transactional and transactional sex with females increased over time (p<0.05 for all) (Figure-24). However, no changes were observed between 2013 and 2015.

Figure-24: Condom use with female sex partners in the last month



Exposure to HIV/AIDS prevention programmes and HIV testing

Both over time and between 2013 and 2015, the proportions of MSM who had participated in any activity of HIV/AIDS prevention programmes in the last year declined significantly (Figure-25) ($p<0.05$).Over the years significantly more MSM availed HIV testing services and at the same time knew their results (Figure-26) ($p<0.05$). However, no changes were observed between 2013 and 2015.

Figure-25: Participated in HIV/AIDS prevention programmes in the last year

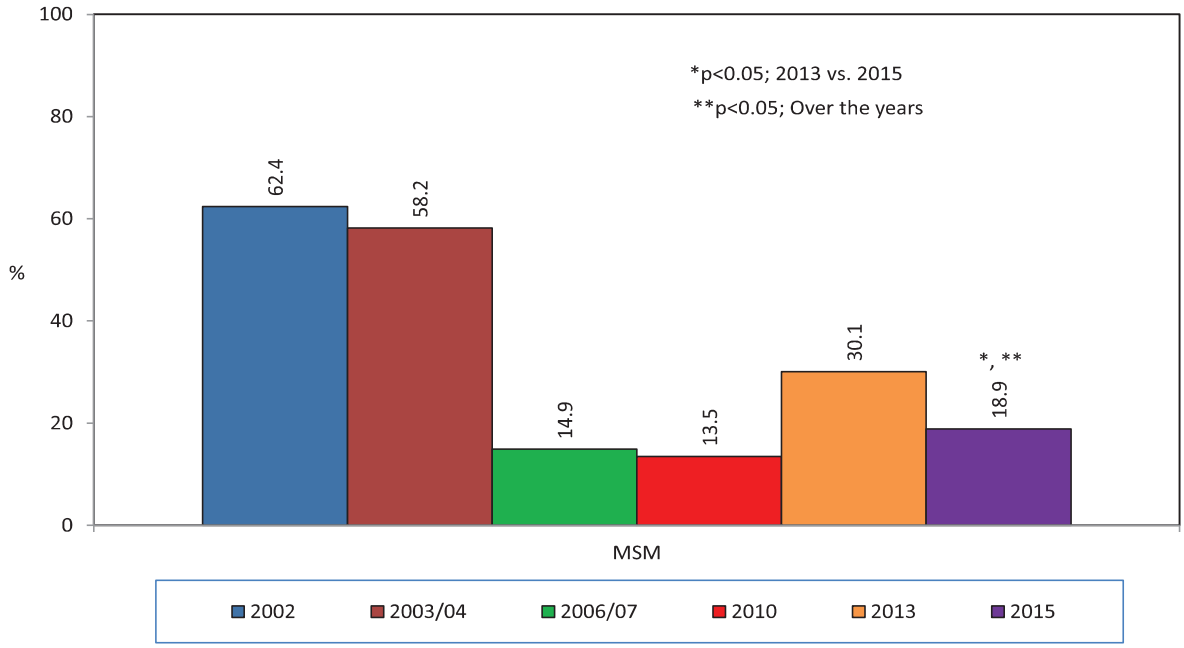
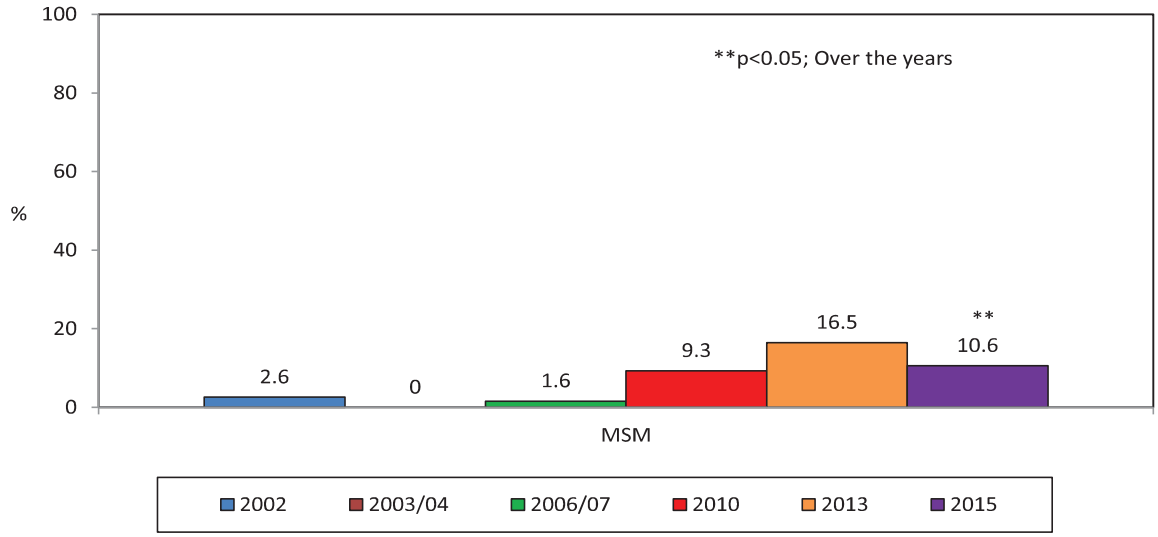


Figure-26: Tested for HIV and knew the result in the last year

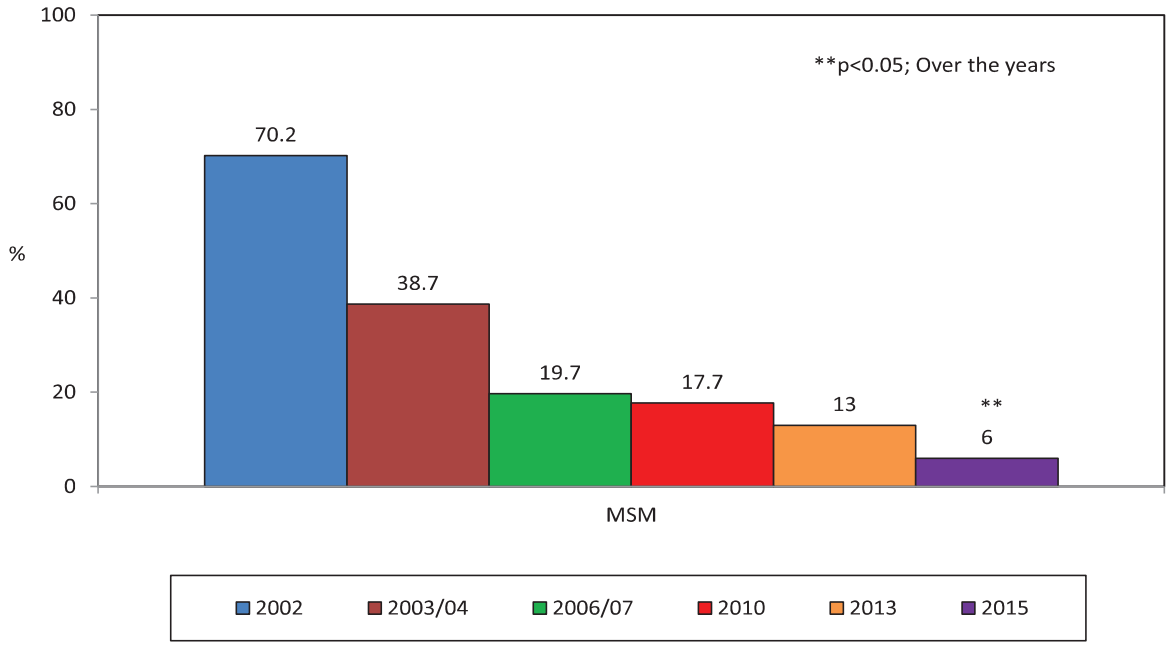


‡ Who replied "yes" to both questions:
1. Have you been tested for HIV in the last 12 months?
2. If yes, I don't want to know the results, but did you receive the results of that test?

Self-reported STIs

The percentages of MSM reporting symptoms of STIs in the last year declined significantly over the years (Figure-27) ($p<0.05$).

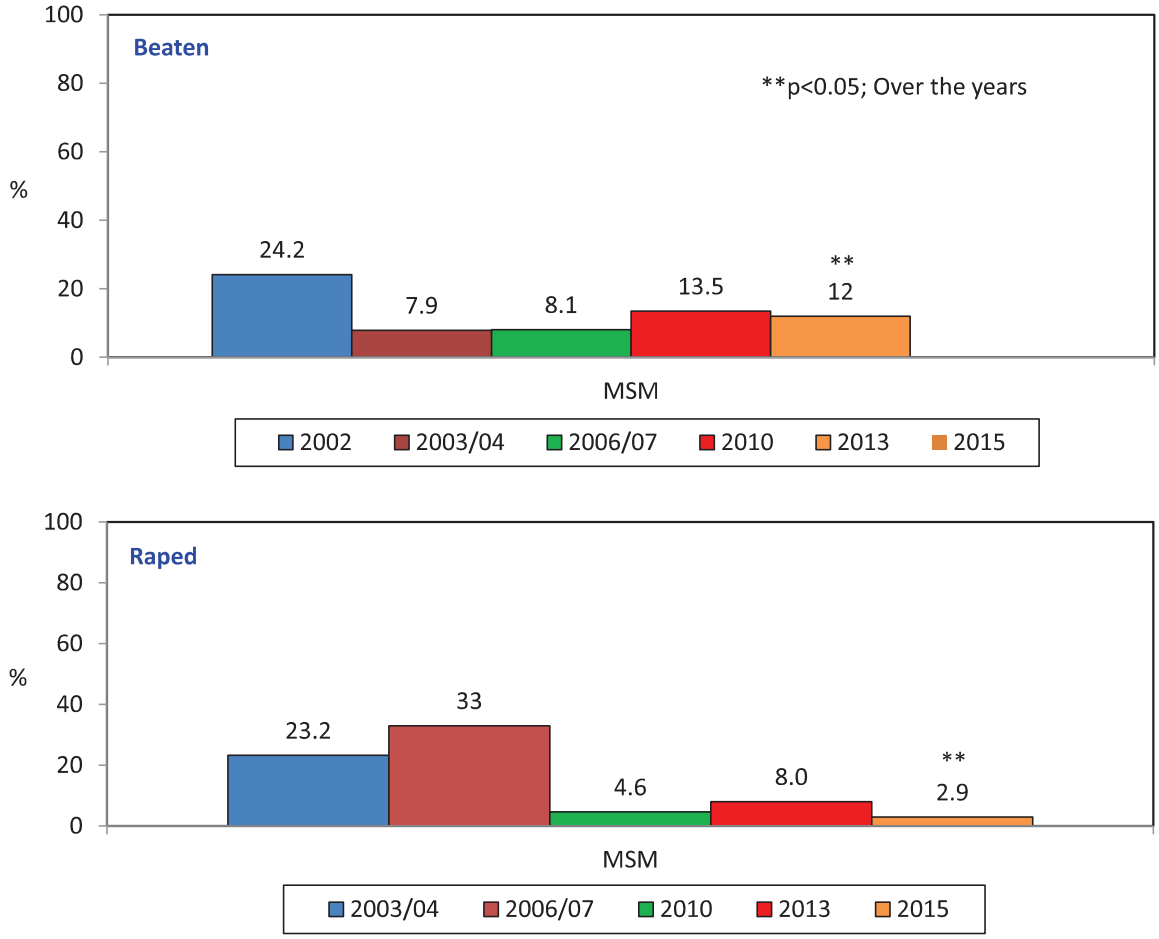
Figure-27: Complained of at least one STI symptom in the last year



Violence

The percentages of MSM reporting being beaten or raped in the last year declined significantly over time (Figure-28) ($p<0.05$ for both). However, no changes were observed between 2013 and 2015.

Figure-28: Beaten and raped in the last one year



MALE SEX WORKERS (MSW)

The results from the BSS from the MSW in Dhaka are presented in the following two sections; A. Findings from the 2015 risk behavioural surveillance and B. Changes in some key risk behaviours over the years of surveillance.

A. Findings from the 2015 risk behavioural surveillance

Male sex workers (N=370) were sampled from Dhaka city between 28th May and 08th July, 2015 adopting a 'take all' approach. In the following sections, analysis of data from MSW in Dhaka city are presented.

Socio-demographic Characteristics (Table-26)

The mean age of MSW was 27.2 years and they had on average 7.4 years of schooling. Overall mean income in the last month was approximately 10,700 Taka. Most reported service as their main source of income in the last month. More than 80% of the respondents identified themselves as 'Kothi'.

Table-26: Socio-demographic characteristics

Indicators	N= 370, unless otherwise stated
Age (in years), % (95% CI)	
18-24	27.2 (26.1-28.2)
>24	26.0 (23.0-30.0)
Age (in years)	
Mean (95% CI)	27.2 (26.1-28.2)
Median (IQR)	26.0 (23.0-30.0)
Ever attended school, % (95% CI)	94.9 (92.1-96.7)
Years of schooling (in years)	
Mean (95% CI)	7.4 (6.8-8.0)
Median (IQR)	8.0 (5.0-10.0)
Years of schooling (Denominator is who ever attended school)	N=351
Mean (95% CI)	7.8 (7.3-8.3)
Median (IQR)	8 (5-10)
Duration of stay in this city, % (95% CI)	
Whole life	38.1 (32.2-44.3)
≤ 10 years	32.2 (26.6-38.3)
>10 years	29.7 (24.6-35.5)
Duration of selling sex (in years)	
Mean (95%CI)	9.2 (8.4-10.0)
Median (IQR)	8.0 (5.0-12.0)
Duration of selling sex in this city (in years)	
Mean (95% CI)	8.5 (7.7-9.3)
Median (IQR)	8.0 (4.0-11.0)
Number of days engaged in selling sex in the last week (Denominator is who sold sex in the last week)	N=370
Mean (95% CI)	3.0 (2.7-3.2)
Median (IQR)	3.0 (2.0-4.0)

Indicators	N= 370, unless otherwise stated
Income in the last month (in taka)	
Mean (95% CI)	10,696.2 (10,100.5-11,291.8)
Median (IQR)	10,000 (7,000-12,500)
Main source of income in the last month, % (95% CI)	
Service	61.1 (54.6-67.2)
Business	14.9 (10.8-20.2)
Sex work	12.2 (8.9-16.4)
Family	3.5 (2.0-6.0)
Day labour	3.0 (1.3-6.6)
Dance/Song	2.2 (1.1-4.4)
Cook	1.6 (0.8-3.4)
Transport worker	0.8 (0.3-2.5)
Private tuition/Teacher	0.8 (0.3-2.4)
Income from sex work in the last month (in taka) (Denominator is whose main source of income was sex work in the last month)	N=45
Mean (95%CI)	7,388.9 (5,502.8-9,275.0)
Median (IQR)	5,000.0 (4,000.0-9,000.0)
Income from the last regular client in the last week (in taka) (Denominator is who sold sex to regular clients in the last week)	N=270
Mean (95%CI)	198.3 (177.5-219.0)
Median (IQR)	180.0 (100.0-250.0)
Income from the last new client in the last week (Denominator is who sold sex to new clients in the last week)	N=282
Mean (95% CI)	234.3 (201.9-266.7)
Median (IQR)	200.0 (100.0-300.0)
Self-identification, % (95% CI)	
Kothi	81.4 (76.1-85.7)
Heroine/Woman/girl	12.4 (9.2-16.6)
Gay	4.3 (2.6-7.1)
Man/Manly	1.4 (0.6-3.1)
Do-parata	0.5 (0.1-2.2)

IQR refers to inter quartile range

Marital status (Table-27)

Fourteen percent of the respondents were currently married and of these 73.6% had regular sex partners besides spouse. Among those who were currently unmarried, 80.1% had regular sex partners. Besides male regular sex partners, few MSW also had female regular sex partners who were not their spouse. Mean age at first sex was approximately 14 years and for 98% the first sex partner was male.

Table-27: Marital status and sex partners

Indicators	N= 370, unless otherwise stated
Current marital status, % (95% CI)	
Married	14.3 (10.8-18.7)
Unmarried[§]	
Currently living with spouse (Denominator is who were currently married) , % (95% CI)	N=53 90.6 (77.7-96.4)
Currently had regular sex partners/parik[Φ] (Denominator is all MSW), % (95% CI)	79.2 (73.7-83.8)
Currently had regular sex partners/parik besides spouse (Denominator is who were currently married), % (95% CI)	N=53 73.6 (59.8-83.9)
Currently had regular sex partners/parik (Denominator is who were currently unmarried), % (95% CI)	N=317 80.1 (74.0-85.1)
Gender of regular sex partners* (Denominator is who were currently unmarried and had regular sex partner), % (95% CI)	N=254
Male	100.0
Female	1.2 (0.4-3.6)
Hijra	0
Gender of regular sex partners besides spouse* (Denominator is who were currently married and had regular sex partner), % (95% CI)	N=39
Male	100.0
Female	38.5 (22.2-57.9)
Hijra	0
Age at first sex (in years)	
Mean (95% CI)	13.6 (13.3-13.9)
Median (IQR)	14.0 (12.0-15.0)
Gender of first sex partner, % (95% CI)	
Male	98.1 (96.2-99.1)
Female	1.9 (0.9-3.8)
Hijra	0

[§] Unmarried included divorced/widower/separated
[Φ]Male lover
[*]Multiple responses
IQR refers to inter quartile range

Sexual history with male partners and condom use (Tables 28, 29 and Figure 29)

Figure-29 and Table-28 presents the percentages of MSW who had anal intercourse with different sex partners. In Dhaka, 76.8% (95% CI: 72.2-69.3) and 77.3% (95% CI: 71.4-82.3) sold sex to new and regular clients in the last week respectively. Also, approximately half of the MSW had non-transactional male sex partners in the last month. A little more than 50% of MSW used condom during their last anal intercourse with both types of clients in the last week. Two in every five MSW used condom during their last non-transactional anal intercourse in the last month. On average, one MSW had anal sex with approximately five clients in the last week.

Figure-29: History of anal sex in the last week and condom use during last anal intercourse

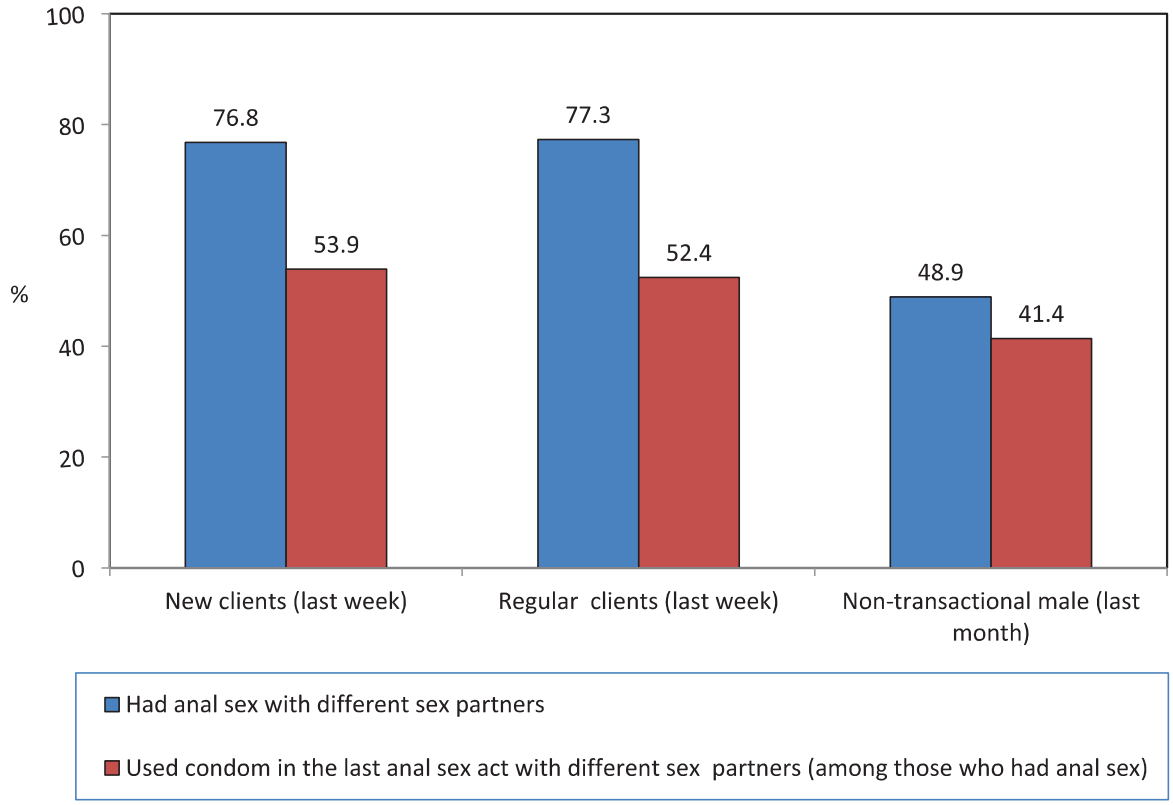


Table-28: Sexual history with clients

Indicators	N= 370, unless otherwise stated
Had anal intercourse with new/regular clients in the last week, % (95 % CI)	91.6 (87.5-94.5)
Number of new/regular clients with whom the respondents had anal intercourse in the last week (Denominator is who had anal intercourse with new/regular clients in the last week) Mean (95%CI) Median (IQR)	N=339 4.6 (4.2-5.0) 4.0 (2.0-6.0)
Had non-penetrative sex (not anal/oral) with new/regular clients in the last week (Denominator is who had new/regular clients in the last week), % (95 % CI)	N=339 10.0 (7.3-13.7)

IQR, Inter Quartile Range

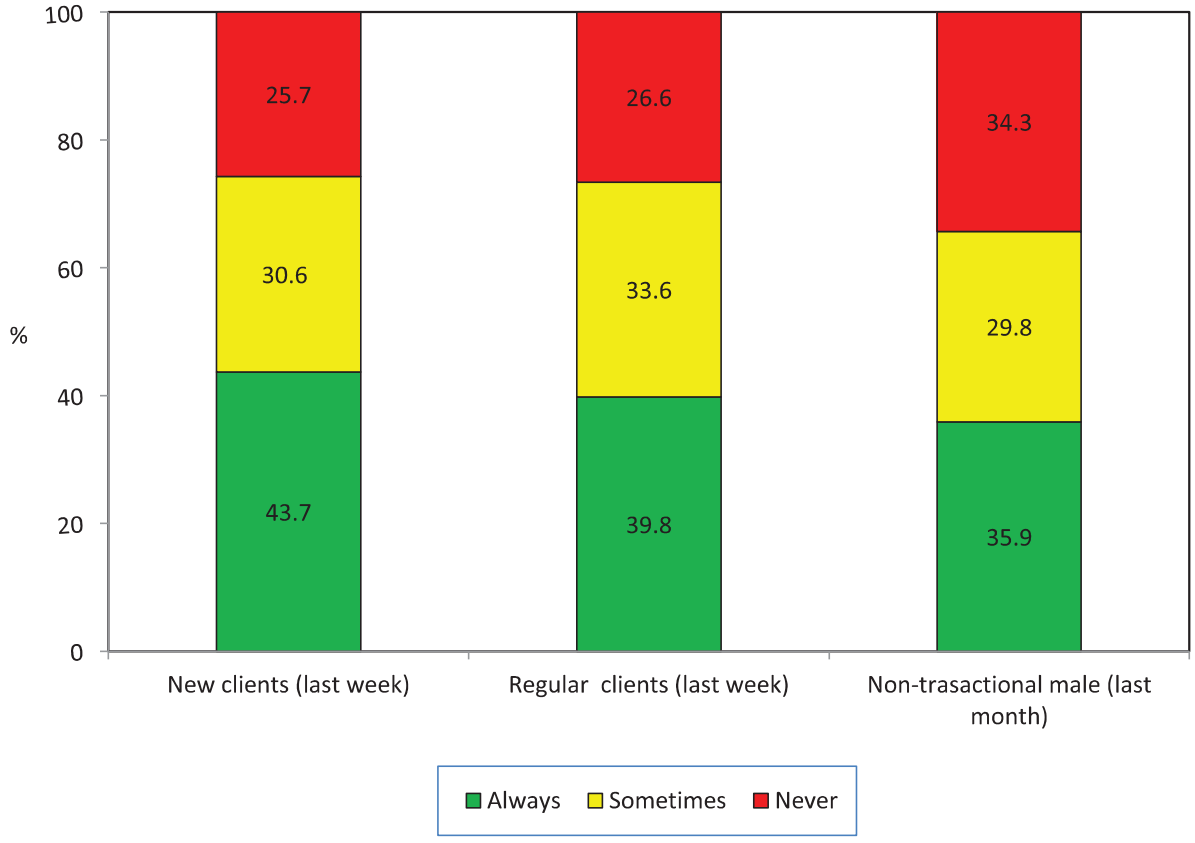
More than 90% MSW reported ever using condoms during anal intercourse (Table-29). Condom use with male clients in the last 12 months was reported by 53.5% MSW. Few reported condom breakage (11.5%).

Table-29: Overall use of condoms

Indicators	N= 370, unless otherwise stated % (95% CI)
Ever used condom during anal intercourse, % (95 % CI)	92.7 (88.8-95.3)
Used condom in the last anal intercourse with a male sex partner in last 12 months (Denominator is who ever had anal intercourse with male sex partners in the last 12 months), % (95 % CI)	53.5 (47.7-59.3)
Reported a condom break in the last month (Denominator is who had sex and used condom in the last month), % (95 % CI)	N=296 11.5 (8.7-15.0)

Figure-30 shows frequency of condom use during anal intercourse with different partners. With new clients 25.7% (95% CI: 20.3-31.9) and with regular clients 26.6% (95% CI: 21.5-32.3) of MSW never used condom. Approximately one third of MSW never used condom during non-transactional sex in the last month.

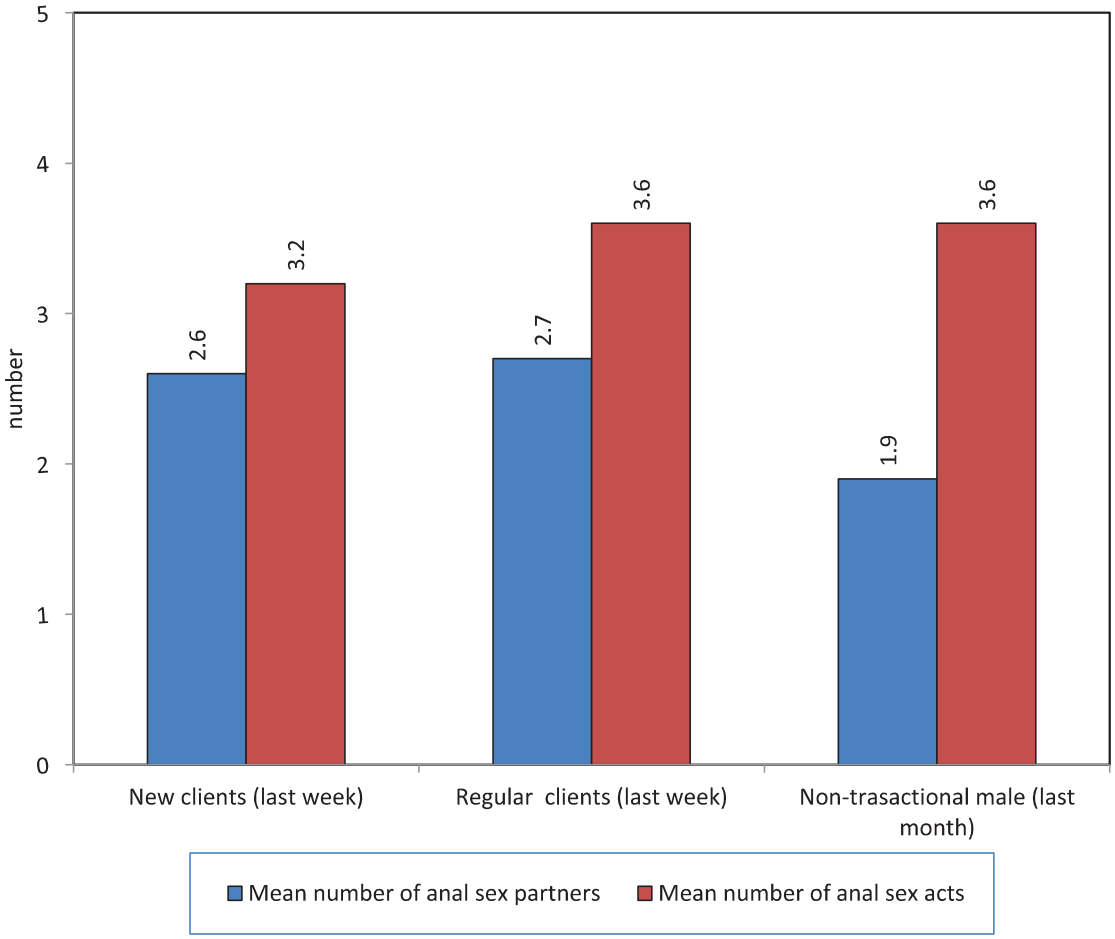
Figure-30: Frequency of condom use during anal intercourse in the last week/month



The mean number of anal sex partners and anal sex acts with different partners are presented in Figure-31. On average, one MSW had three clients and with whom 3-4 anal sex acts were performed in the last week.

The mean number of anal/vaginal sex acts in all settings with males/hijra/females in the last one week was 5.8 (95% CI: 5.4-6.3).

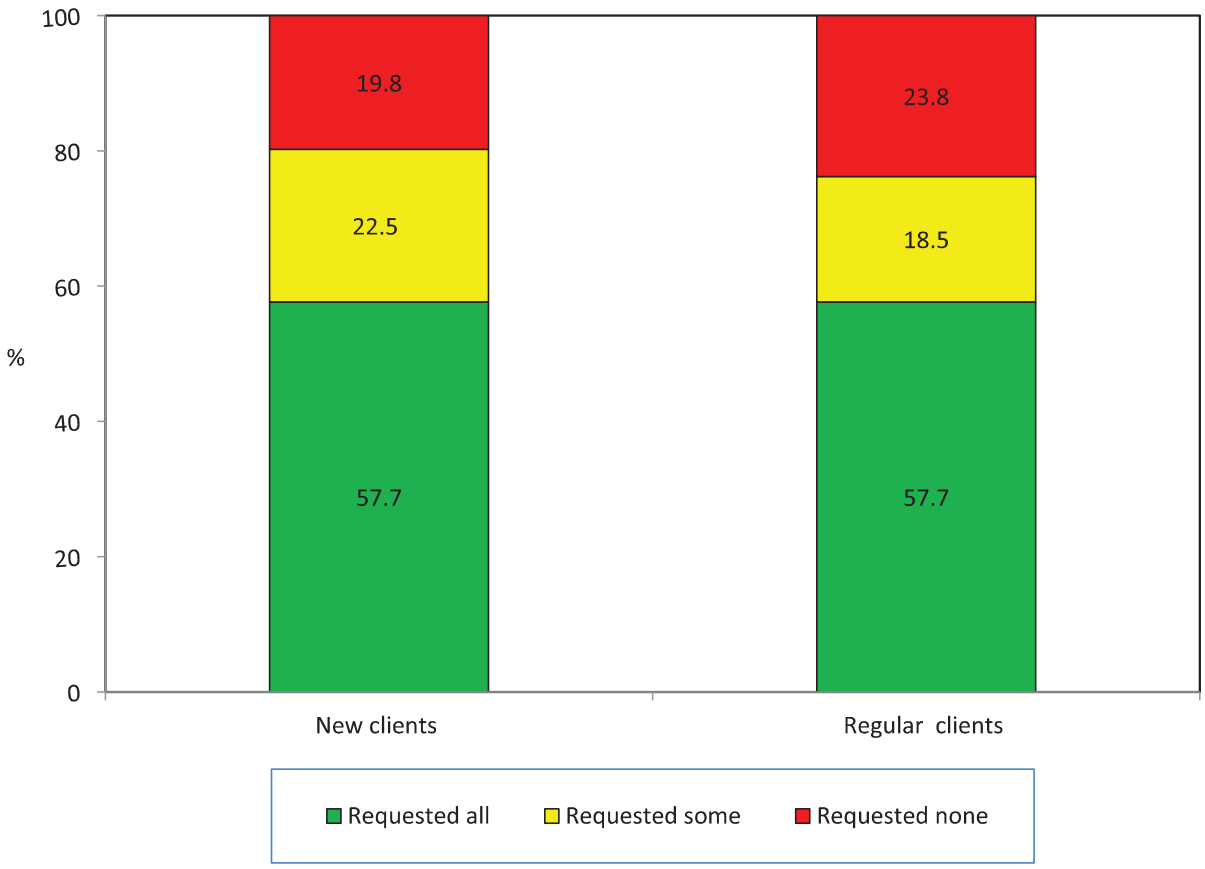
Figure-31: Mean number of sex partners and anal sex acts in the last week/month



Requested clients to use condoms in the last week (Figure-32)

Requesting clients, whether new or regular was reported by 57.7% of MSW in the last week. However, a considerable percentage of MSW never approached their new/regular clients to use condoms.

Figure-32: Requested clients to use condoms



History of oral sex (Table-30)

Approximately, 4% - 6% of MSW had oral sex with new and regular clients in the last week. 3.2% of MSW had non-transactional oral sex with male sex partners in the last one month. In most cases, condoms were never used during oral sex.

Table-30: History of oral sex with male sex partners

Indicators	N= 370, unless otherwise stated
New Clients	
Had oral sex up to ejaculation with new clients in the last week, % (95 % CI)	4.1 (2.5-6.5)
Number of new clients with whom the respondents had oral sex up to ejaculation in the last week (Denominator is who had oral sex with new clients in the last week) Mean (95% CI) Median (IQR)	N=15 1.7 (1.1-2.2) 1.0 (1.0-2.0)
Frequency of condom use in oral sex up to ejaculation with new clients sex in the last week (Denominator is who had oral sex	N=15

Indicators	N= 370, unless otherwise stated
with new clients in the last week), % (95 % CI)	
Always	26.7 (9.7-55.2)
Sometimes	13.3 (2.7-46.2)
Never	60.0 (33.3-81.8)
Regular Clients	
Had oral sex up to ejaculation with regular clients in the last week, % (95 % CI)	5.9 (4.0-8.7)
Number of regular clients with whom the respondents had oral sex up to ejaculation in the last week (Denominator is who had oral sex with regular clients in the last week)	N=22
Mean (95% CI)	1.2 (1.0-1.4)
Median (IQR)	1.0 (1.0-1.0)
Frequency of condom use in oral sex up to ejaculation with regular clients in the last week (Denominator is who had oral sex with regular clients in the last week), % (95 % CI)	N=22
Always	31.8 (12.5-60.4)
Sometimes	4.5 (0.5-30.6)
Never	63.6 (36.4-84.3)
Non-transactional male sex partners	
Had oral sex up to ejaculation with non-transactional male sex partners in the last month, % (95 % CI)	3.2 (1.9-5.4)
Number of non-transactional male sex partners with whom the respondent had oral sex up to ejaculation in the last month (Denominator is who had oral sex with non-transactional male sex partners in the last month)	N=12
Mean (95% CI)	1.7 (0.4-3.0)
Median (IQR)	1.0 (1.0-1.0)
Frequency of condom use in non-transactional oral sex up to ejaculation with male sex partners in the last month (Denominator is who had oral sex with non-transactional male sex partners in the last month), % (95 % CI)	N=12
Always	8.3 (0.8-51.5)
Sometimes	16.7 (3.7-51.1)
Never	75.0 (42.0-92.6)

IQR refers to inter quartile range

Buying sex from males (Table-31)

Very few MSW bought receptive anal sex from males in the last month. Among those who bought sex in the last month, approximately half used condom in the last sex act.

Table-31: Buying sex from males: number of partners and condom use

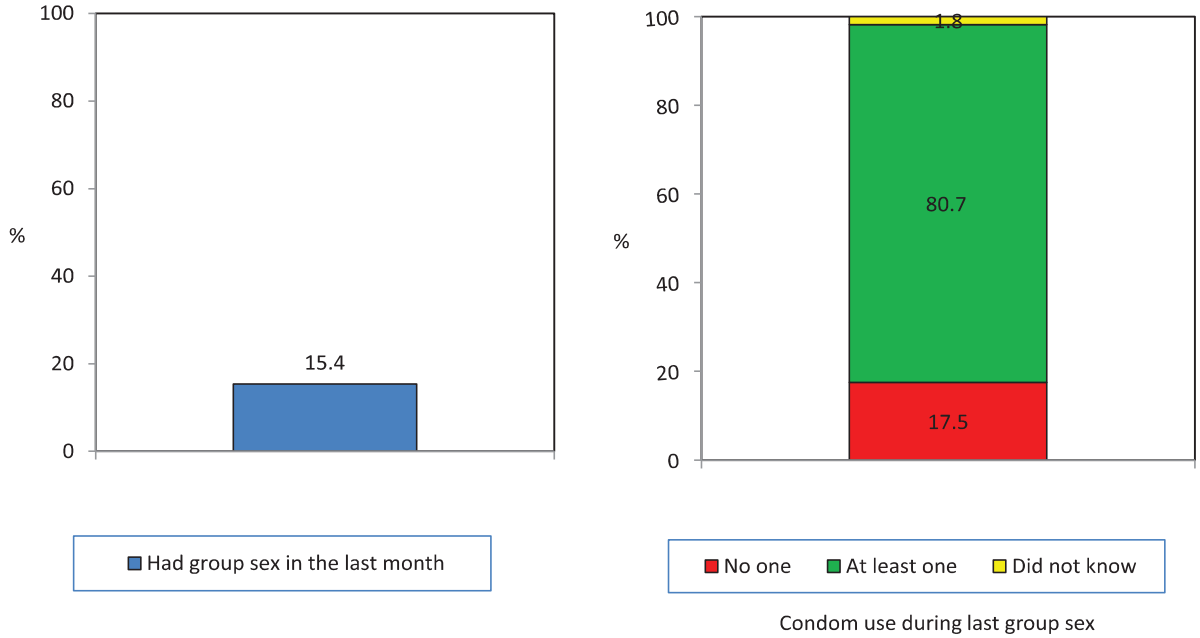
Indicators	N= 370, unless otherwise stated
Bought anal sex from males in the last month, % (95 % CI)	6.2 (4.1-9.4)
Bought oral sex from males in the last month, % (95 % CI)	0.3 (0.0-2.0)
Number of males from whom the respondents bought anal sex in the last month (Denominator is who bought sex from male in the last month)	N=23
Mean (95% CI)	1.4 (1.0-1.9)
Median (IQR)	1.0 (1.0-2.0)
Used condom in the last anal intercourse with a male partner while buying sex in the last month (Denominator is who bought sex from male in the last month), % (95 % CI)	N=23 47.8 (28.9-67.4)
Number of anal sex acts with male partners while buying sex in the last month (Denominator is who bought anal sex from male sex partners in the last month)	N=23
Mean (95% CI)	2.6 (1.9-3.3)
Median (IQR)	2.0 (2.0-3.0)
Frequency of condom use while buying anal sex from male sex partners in the last month (Denominator is who bought anal sex from male in the last month), % (95 % CI)	N=23
Always	21.7 (9.7-41.8)
Sometimes	52.2 (32.5-71.2)
Never	26.1 (11.9-48.0)

IQR refers to inter quartile range

History of group sex (Figure-33)

Having group sex in the last month was reported by 15.4% (95% CI: 11.6-20.1) of MSW. The mean number of sex partners (excluding the respondent) in the last group sex was 2.9 (95% CI: 2.6-3.2). The majority (80.7%; CI: 67.8-89.3) of MSW said that at least one partner used a condom during last group sex however approximately one in every five said that no one used a condom during last group sex.

Figure-33: Group sex and condom use during last group sex



Sexual history with female sex partners (Table-32)

Buying from or selling sex to females was reported by 1.1% and 0.5%, respectively. With females, non-transactional sex was more common than transactional sex ($p<0.05$). Of the MSW who had non-transactional vaginal/anal intercourse with female sex partners in the last month, 11.6% used a condom in their last sex act. However, more than 60% of MSW never used condoms during non-transactional sex with female sex partners in the last month.

Table-32: Sexual history with female sex partners

Indicators	N= 370, unless otherwise stated
Buying sex from female sex worker	
Bought vaginal/anal sex from females in the last month, % (95 % CI)	1.1 (0.4-2.7)
Selling Sex to female clients	
Sold sex to females in the last month, % (95 % CI)	0.5 (0.1-2.1)
Sex with non-transactional female partners	
Had non-transactional sex female partners in the last month, % (95 % CI)	11.6 (8.5-15.7)
Number of non-transactional vaginal/anal sex acts with female partners in the last month (Denominator is who had non-transactional vaginal/anal sex with female partners in the last month)	N=43
Mean (95% CI)	3.9 (3.0-4.8)
Median (IQR)	3.0 (2.0-5.0)
Used condom in the last non-transactional vaginal/anal intercourse with female sex partners in the last month (Denominator is who had non-transactional vaginal/anal sex	N=43 11.6 (4.9-25.0)

Indicators	N= 370, unless otherwise stated
with female partners in the last month), % (95 % CI)	
Frequency of condom use in non-transactional vaginal/anal intercourse with sex partners in the last month (Denominator is who had non-transactional vaginal/anal intercourse with female sex partners in the last month), % (95 % CI)	N=43
Always	11.6 (4.9-25.0)
Sometimes	25.6 (14.5-41.0)
Never	62.8 (46.1-76.9)

IQR refers to inter quartile range

Access to condoms (Table-33)

Everyone knew the sources of condoms and mostly mentioned two sources – HIV prevention programmes (DIC/Depot Holder/NGO workers) and pharmacy. Among those who had sex in the last month and used condoms, 82.1% reported having easy access to condoms when they needed one. The most common reasons cited for not having easy access to condoms were "DIC was far away" followed by "feel ashamed/find it troublesome/afraid to buy".

Table-33: Access to condoms and ease of access

Indicators	N= 370, unless otherwise stated % (95% CI)
Knowledge on the sources of condoms*	
Pharmacy	84.1 (79.0-88.1)
HIV Prevention programmes (DIC/Depot holder/Outreach workers)	77.0 (70.9-82.2)
Shop	40.8 (34.6-47.3)
Sex partner	27.8 (22.7-33.6)
Friends	23.8 (19.4-28.9)
Health centre (besides DIC)	1.4 (0.6-3.2)
Bar/Guest house/Hotel	0.8 (0.3-2.5)
Sources of condom in the last month* (Denominator who had sex in last month and used condom)	N=296
HIV Prevention programmes (DIC/Depot holder/Outreach workers)	64.9 (57.5-71.6)
Pharmacy	49.7 (42.4-56.9)
Sex partner	32.8 (26.5-39.7)
Friends	28.4 (23.0-34.5)
Shop	17.9 (12.9-24.3)
Bar/Guest house/Hotel	0.3 (0.0-2.3)
Had easy access to condoms in the last month	70.5 (63.5-76.7)
Had easy access to condoms in the last month (Denominator is who used condom in last month)	N=296
Yes	82.1 (76.6-86.5)
No	16.2 (12.0-21.5)
Condom was not needed	1.7 (0.7-3.8)
Reasons for not having easy access to condoms in the last	N=48

Indicators	N= 370, unless otherwise stated % (95% CI)
month* (Denominator is who reported not having easy access to condoms in the last month)	
DIC is far away	45.8 (29.8-62.7)
Feel ashamed/Troublesome/Afraid to buy	37.5 (25.8-50.9)
Didn't find peer educator when needed	31.3 (20.2-45.0)
Not willing to carry	31.3 (19.7-45.7)
DIC/Depot is closed	33..3 (20.5-49.2)
Shop/Pharmacy is far away	12.5 (5.9-24.6)
Shop/Pharmacy is closed	12.5 (4.9-28.3)
Cost is too high	2.1 (0.3-13.6)

*Multiple responses

Knowledge and use of lubricants (Table-34)

More than 85% of MSW reported having ever heard of special lubricants for use with condoms and more than 90% were able to mention brand names. More than 95% ever used lubricants while having anal intercourse and most used water based lubricants followed by saliva. Among those who mentioned never or sometimes using lubricants during anal intercourse, most mentioned using other cream or shortage of supply. The common reasons for always using lubricants together with condoms were to increase sensation and decrease pain/inflammation.

Table-34: Use of lubricants

Indicators	N= 370, unless otherwise stated % (95% CI)
Ever used lubricants while having anal intercourse	97.8 (95.4-99.0)
Types of lubricants used in the last receptive anal intercourse in the last year* (Denominator is who had receptive anal intercourse in the last year)	N=362
Water based lubricant	75.4 (68.3-81.4)
Saliva	40.3 (33.5-47.6)
Ordinary lotion/Petroleum jelly/Beauty cream	20.8 (16.2-26.4)
Oil	16.6 (11.9-22.6)
Shampoo/Soap	3.3 (1.8-6.2)
Antiseptic cream	0.6 (0.1-2.2)
Ever heard about lubricant made especially for use with condoms	N=366 87.2 (82.4-90.8)
Was able to mention brand name of such product (Denominator is who ever heard about lubricant)	N=319 89.7 (85.5-92.7)
Name of the brand of lubricant (Denominator is who mentioned the brand name)	N=286
Lubricating gel	83.2 (73.1-90.0)
Shathi	16.8 (10.0-26.9)
Used lubricant with condom during the last anal intercourse in the last 12 months (Denominator is who used lubricant in last 12 months)	N=362 53.0 (47.2-58.8)
Frequency of using special lubricant together with a condom	N=317

Indicators	N= 370, unless otherwise stated % (95% CI)
during anal intercourse in the last month (Denominator is who had heard about special lubricant product for use with condoms and had anal intercourse in the last month)	
Always	33.4 (27.4-40.1)
Sometimes	49.2 (43.3-55.1)
Never	17.4 (13.5-22.0)
Reasons for either never or sometimes using lubricant together with a condom in the last month (Denominator is who never or sometimes used condom and lubricant in the last month)*	N=211
Use other cream	33.6 (27.3-40.7)
Shortage of supply	30.3 (23.1-38.7)
Do not feel it is required/Do not feel good	29.4 (23.2-36.4)
Not easy to carry	28.0 (22.1-34.7)
Client did not want to use	7.6 (4.8-11.7)
Feel ashamed/Troublesome/Afraid to buy	7.6 (4.0-14.0)
Do not know where to buy	3.3 (1.5-7.3)
Cost is too high	1.4 (0.4-4.4)
Reasons for always using condom and lubricant in the last month (Denominator is who always used condom and lubricant in the last month)*	N=106
Increase sensation	71.7 (61.6-80.0)
Decrease pain/Inflammation	67.9 (57.2-77.1)
Decrease risk of condom breakage	60.4 (50.0-69.9)
To avoid HIV/STIs	28.3 (19.9-38.6)
Easy access for penis	1.9 (0.5-6.9)

*Multiple responses

Knowledge of STIs, self-reported STIs and care-seeking behaviour(Table-35)

Approximately 63.5% of MSW mentioned genital ulcer/sore as a symptom of STI. More than 10% of MSW complained of at least one STI symptom in the last one year. Among those who reported at least one symptom in the last one year, almost three fourth of the MSW said that qualified practitioner was their first choice for STI treatment (73.8%).

Table-35: Knowledge of STIs, self-reported STIs and care seeking behaviour

Indicators	N= 370, unless otherwise stated
Knowledge about STI symptoms*, % (95 % CI)	
Genital ulcer/Sore	63.5 (56.3-70.2)
Anal ulcer/Sore	52.4 (45.2-59.6)
Burning pain on urination	51.9 (46.4-57.4)
Discharge from penis	46.5 (40.1-53.0)
Anal discharge	22.2 (17.8-27.2)
Swellings in groin area	5.4 (3.1-9.3)
No knowledge on STI symptoms	4.9 (3.1-7.5)
Complained of urethral discharge in the last year, % (95 % CI)	2.4 (1.2-5.0)
Complained of anal discharge in the last year, % (95 % CI)	8.1 (5.4-12.1)
Complained of genital ulcer/sore in the last year, % (95 % CI)	3.0 (1.6-5.3)
Reported having at least one STI symptom in the last year (urethral discharge or anal discharge or genital ulcer/sore in the last year), % (95 % CI)	11.4 (8.1-15.7)
The first choice for seeking care for the last STI symptom in the last year (Denominator is who reported STI symptoms in last year), % (95 % CI)	N=42
NGO clinic	40.5 (25.3-57.7)
Private doctor/Private clinic	23.8 (12.2-41.3)
Self-medication	14.3 (6.6-28.4)
Gov. Hospital	9.5 (3.4-23.9)
Drug seller	7.1 (2.2-20.9)
Did not seek treatment	4.8 (1.1-18.5)
The first choice for seeking care for the last STI symptom in the last year (Denominator is who reported STI symptoms in last year), % (95 % CI)	N=42
Qualified practitioner[θ]	73.8 (59.8-84.2)
Un-qualified practitioner[¶]	21.4 (12.0-35.3)
No treatment	4.8 (1.1-18.5)
Waiting days for the last STI treatment in the last year (Denominator is who sought STI treatment in last year)	N=39
Mean (95% CI)	4.8 (3.4-6.2)
Median (IQR)	3.0 (2.0-7.0)
Expenditure (in taka) for the last STI treatment in the last year (Denominator is who reported STI symptoms in the last year and sought treatment)	N=34
Mean (95% CI)	1384.7 (0.0-2966.9)
Median (IQR)	350.0 (30.0-600.0)

[θ]Qualified practitioner refers to hospital, private clinic, private doctor and NGO clinic

[¶]Un-qualified practitioner refers to drug seller, canvasser/traditional healer, advice/treatment from friends and self-medication

*Multiple responses

IQR refers to inter quartile range

Knowledge of HIV and its modes of prevention and transmission(Table-36)

Knowledge regarding HIV/AIDS was almost universal. However, misconceptions about the transmission of HIV especially that HIV can be transmitted by mosquito bites and sharing food with an HIV infected person, was not uncommon. A little more than one third had comprehensive knowledge of HIV.

Table-36: Knowledge of HIV and its modes of HIV prevention and transmission

Indicators	N= 370, unless otherwise stated % (95% CI)
Heard about HIV/AIDS	99.5 (97.9-99.9)
Mentioned condom use (correctly and consistently in any type of sex) as a mode of prevention	97.0 (94.6-98.4)
Mentioned avoiding anal sex as a mode of prevention	61.9 (55.7-67.7)
Mentioned avoiding multiple sex partners as a mode of prevention	66.5 (60.1-72.4)
Mentioned HIV can be transmitted by mosquito bites	26.5 (22.0-31.6)
Mentioned HIV can be transmitted by sharing food with an HIV infected person	21.9 (17.9-26.5)
Mentioned not sharing needles/syringes as a mode of prevention	83.2 (77.5-87.7)
Mentioned one can tell by looking at someone whether he/she is infected with HIV	10.5 (7.6-14.5)
Had comprehensive knowledge of HIV[§]	37.0 (31.4-43.0)

[§]This indicator was computed by correct answers to five questions:

1. Can people reduce their risk of HIV by using a condom correctly and consistently in any type of sex,
2. Can people reduce their risk of HIV by avoiding sex with multiple partners,
3. Can a person get HIV through mosquito bites,
4. Can a person get HIV by sharing a meal with someone who is HIV infected and
5. Can you tell by looking at someone whether s/he is infected with HIV

Confidential HIV testing (Table-37)

Seventy percent of MSW knew where HIV could be tested confidentially with pre and post counselling facilities and 56.2% reported having ever been tested. 97.1% had tested for HIV at DICs run by HIV prevention NGOs dedicated to MSM/MSW. In the last one year, 36.5% of MSW had been tested for HIV and knew their result.

Table-37: Confidential HIV testing

Indicators	N= 370, unless otherwise stated % (95% CI)
Knew where HIV can be tested confidentially	70.5 (63.3-76.9)
Ever tested for HIV	56.2 (48.5-63.6)
Name of HIV testing facilities (Denominator is who had ever tested for HIV)	N=208
Government hospital	0
HIV prevention NGOs	97.1 (93.1-98.8)
HTC centres in other NGOs	2.9 (1.2-6.9)
Motivation for testing HIV (Denominator is who had ever tested for HIV)	N=208
Self	56.7 (49.8-63.4)
Someone advised	42.8 (36.1-49.7)
Needed the test	0.5 (0.1-3.6)
Who inspired testing for HIV (Denominator is who had ever tested for HIV and someone advised)	N=89
NGO worker	73.0 (60.6-82.7)
Friends	27.0 (17.3-39.4)
Sex partner	0
Received HIV testing result (Denominator is who had ever tested for HIV)	N=208 94.2 (88.6-97.2)
Time since the most recent HIV test (Denominator is who had ever tested for HIV)	N=208
Within one year	68.8 (58.7-77.3)
More than one year	31.3 (22.7-41.3)
Received HIV testing and counselling in the last year and knew the result[Φ]	36.5 (28.4-45.4)

[Φ]This indicator was computed by combining responses from two questions:

3. Have you been tested for HIV in the last 12 months?
4. If yes, I don't want to know the results, but did you receive the results of that test?

Self-perception of risk of HIV and reasons for those perceptions(Table-38)

Almost two third of the MSWs perceived themselves to be at little or no risk of HIV of whom the majority stated that this was because they were always neat and clean. However, 7.3% were not able to assess their own risk of HIV. Among those who perceived themselves to be at high or medium risk of HIV, the most frequently mentioned reason was irregular use of condoms.

Table-38: Self-perception of risk of HIV and their reasons

Indicators	N= 370, unless otherwise stated % (95% CI)
Considered themselves to be at risk of HIV	
High risk	6.8 (4.3-10.4)
Medium risk	22.7 (18.2-28.0)
Little or no risk	63.2 (57.7-68.5)
Not able to assess own risk	7.3 (4.6-11.3)
Reasons for assessing themselves to be at high or medium risk (Denominator is who assessed themselves to be at high or medium risk)*	N=109
Irregular use of condoms	72.5 (63.6-79.9)
Frequent anal sex	45.0 (35.6-54.7)
Risky profession	38.5 (29.5-48.4)
Do not use condom	10.1 (6.0-16.5)
Reasons for assessing themselves to be at little or no risk (Denominator is who assessed themselves to be at little or no risk)*	N=234
Be neat and clean	53.4 (45.8-60.9)
Irregular use of condoms	46.2 (39.9-52.5)
Always used condoms	35.9 (29.4-43.0)
Have sex with clean/Healthy sex partners	34.2 (27.5-41.6)
Wash genitals after sex	34.2 (28.5-40.4)
Have less sex acts	15.0 (10.6-20.6)
Have sex with trusted sex partner	7.3 (4.7-11.1)
Tested blood	5.1 (2.9-8.8)

*Multiple responses

Measures taken to avoid STIs and HIV (Table-39)

Majority of the MSW mentioned that they used condoms to avoid HIV and STIs. Many also reported having sex with clean partner or trusted partner to avoid SITs and HIV.

Table-39: Measures taken to avoid STIs and HIV

Indicators	N= 370, unless otherwise stated % (95% CI)
Measures taken to avoid STIs*	
Sometimes used condoms	54.1 (48.4-59.6)
Have sex with clean partners	37.3 (32.5-42.3)
Wash genital organs with water/Soap/Dettol/Urine	36.5 (32.1-41.1)
Always used condoms	24.1 (19.4-29.4)
Nothing	11.6 (8.5-15.8)
Sex with trusted partners	8.9 (6.0-13.1)
Measures taken to avoid HIV*	
Sometimes used condoms	55.1 (49.9-60.2)
Have sex with trusted partners	47.8 (41.8-53.9)
Wash genital organs with water/Soap/Dettol/Urine	36.8 (31.9-41.9)
Always used condoms	24.1 (19.4-29.4)
Do nothing	10.3 (7.2-14.4)

*Multiple responses

Violence against MSW(Table-40)

Being raped, beaten or both were reported by several MSWs. Hoodlums were the main perpetuators of such violence. A small number were jailed in the last year for different reasons.

Table-40: Violence

Indicators	N= 370, unless otherwise stated % (95% CI)
Was beaten in the last year	15.4 (12.0-19.6)
Beating was perpetuated by* (Denominator is who was beaten in the last year)	N=57
Mastans (Hoodlums)	35.1 (23.1-49.3)
Relatives	19.3 (10.6-32.5)
Local people	17.5 (8.8-32.1)
Men in uniform	10.5 (4.9-21.3)
Regular clients	5.3 (1.8-14.8)
New clients	3.5 (0.8-13.8)
Hijra	1.8 (0.2-11.4)
Was raped in the last year	11.6 (8.8-15.3)
Was beaten or raped in the last year	23.8 (19.4-28.8)
Rape was perpetuated by* (Denominator is who was raped in the last year)	N=43
Mastans (Hoodlums)	34.9 (22.7-49.5)
Local people	25.6 (15.3-39.5)
Regular clients	20.9 (11.6-34.8)
Men in uniform	9.3 (3.2-24.0)
New clients	9.3 (3.2-24.0)
Relatives	7.0 (2.2-20.1)
Parik	2.3 (0.3-15.8)
Facebook friend	2.3 (0.3-15.8)
Was jailed in the last year	4.3 (2.8-6.5)
Reasons for being jailed in the last year (Denominator is who was jailed in the last year)	N=16
Section-54[§]	43.8 (19.8-71.1)
During sex	25.0 (8.8-53.5)
For carrying cannabis	12.5 (2.5-44.5)
Business in footpath (small shop)	6.3 (0.8-37.0)
For carrying condoms	6.3 (0.6-40.8)
Conflict with neighbour	6.3 (0.6-40.8)

*Multiple responses

[§] When police may arrest without any warrant for any suspicious behaviour

Mobility(Table-41)

Almost half of the MSW reported travelling to another city within the country in the last year. Of these, more than half sold sex while being in another city and among those travelling and selling sex, 60.4% reported using condom in the last intercourse.

A few MSW travelled abroad in the last year and of these the vast majority visited India (15 out of 18). More than 85% who travelled abroad sold sex while abroad. Buying sex and having non-transactional sex while abroad was not common.

Table-41: Mobility

Indicators	N= 370, unless otherwise stated % (95% CI)
Within Country	
Visited another city in the last year	50.5 (44.7-56.4)
Sold sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=187 54.0 (46.2-61.6)
Used condom in the last sex act while selling sex in another city in the last year (Denominator is who visited another city and sold sex in the last year)	N=101 60.4 (50.2-69.8)
Bought sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=187 2.1 (0.8-5.6)
Used condom in the last sex act while buying sex in another city in the last year (Denominator is who visited another city and bought sex in the last year)	N=4 75.0 (4.1-99.5)
Had sex non-transactional sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=187 31.6 (25.2-38.7)
Used condom in the last non-transactional sex act while visiting another city in the last year (Denominator is who visited another city and had non-transactional sex in the last year)	N=59 39.0 (26.3-53.4)
Outside Country	
Travelled abroad in the last year	4.9 (2.7-8.7)
Sold sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=18 88.9 (49.9-98.5)
Used condom in the last sex act while selling sex abroad in the last year (Denominator is who travelled abroad and sold sex in the last year)	N=16 81.3 (48.3-95.3)
Bought sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=18 5.6 (0.7-32.8)
Used condom in the last intercourse while buying sex abroad in the last year (Denominator is who travelled abroad and bought sex in the last year)	N=1 100.0
Had non-transactional sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=18 11.1 (2.5-38.0)
Used condom in the last non-transactional sex while abroad in the last year (Denominator is who travelled abroad and had non-transactional sex in the last year)	N=2 50.0 (0.0-100.0)

Exposure to HIV/AIDS prevention programmes(Table-42)

Approximately, two thirds of the MSW said that they had ever participated in any HIV/AIDS prevention programmes and 56.8% did so in the last year. Among those who participated in prevention programmes in the last year, more than 90% mentioned receiving condoms and lubricants followed by participating in educational programmes and attending DICs.

Table-42: Exposure to HIV/AIDS prevention programmes

Indicators	N= 370, unless otherwise stated
Ever participated in HIV/AIDS prevention programmes, % (95% CI)	65.7 (57.5-73.0)
Time (in months) since last participation in HIV/AIDS prevention programmes (Denominator is who had ever participated in any HIV/AIDS intervention programmes)	N=243
Mean (95% CI)	5.1 (3.2-6.9)
Median (IQR)	0.0 (0.0-4.0)
Duration (in months) of involvement with HIV/AIDS prevention programmes (Denominator is whoever participated in any HIV/AIDS prevention programme)	N=242
Mean (95% CI)	46.8 (39.3-54.3)
Median (IQR)	36.0 (24.0-60.0)
Participated in any HIV/AIDS prevention programmes in the last year, % (95% CI)	56.8 (48.4-64.7)
Participated in any HIV/AIDS prevention programmes in the last three months, 95% CI	45.9 (38.2-53.9)
Participated in any HIV/AIDS prevention programmes in the last month, 95% CI	41.6 (34.1-49.6)
Number of times participated in the prevention programmes in the last month (Denominator is who had participated in the HIV/AIDS prevention programmes in the last month)	N=154
Mean (95% CI)	2.5 (2.2-2.8)
Median (IQR)	2.0 (1.0-3.0)
Reported being involved with different types of prevention programmes in the last month* (Denominator is who participated in any HIV/AIDS prevention programmes in the last month), % (95% CI)	N=154
Received condoms	98.7 (95.3-99.7)
Received lubricants	94.8 (90.5-97.2)
Attended educational programmes	62.3 (51.5-72.1)
Attended DIC for rest and recreation	50.0 (42.0-58.0)
Received treatment for general health problems	46.8 (39.0-54.7)
Received HTC	36.4 (27.4-46.4)
Received treatment for STIs	25.3 (18.6-33.5)

Indicators	N= 370, unless otherwise stated
Reported been involved with different types of prevention programmes in the last year (Denominator is who participated in any HIV/AIDS prevention programmes in the last year), % (95% CI)	N=210
Received condoms	98.1 (95.3-99.2)
Received lubricants	91.9 (87.2-95.0)
Attended educational programmes	59.0 (49.8-67.7)
Received treatment for general health problems	47.6 (40.5-54.8)
Attended DIC for rest and recreation	46.2 (38.9-53.6)
Received HTC	35.2 (27.9-43.4)
Received treatment for STIs	23.8 (17.6-31.4)
Received a combination of HIV/AIDS prevention programmes in the last three months[§], % (95% CI)	18.6 (13.8-24.7)
Reached with HIV/AIDS prevention programmes in the last year[ϕ], % (95% CI)	53.5 (45.4-61.4)
Benefited from HIV/AIDS prevention programmes in the last year (Denominator is who had participated in any HIV/AIDS prevention programmes in the last year)*, % (95% CI)	N=243
Learnt about HIV/AIDS/STD/Safe sex and correct use of condom	83.5 (78.3-87.7)
Helped in changing risk behaviour	51.0 (45.0-57.0)
Received useful information but did not change behaviour	26.3 (20.7-32.9)
Information was hard to understand	1.6 (0.6-4.5)
Information was not relevant to their needs	0.4 (0.1-3.0)
Received vocational training	0.4 (0.1-2.6)

[§]Who received at least two services in the last three months: condom/lubricant/counselling on condom use and safe sex/STI services from NGOs

[ϕ]This indicator was computed by combining the responses from two questions:

1. Do you know where you can go if you wish to receive an HIV test?
2. In the last twelve months, have you been given condoms? (e.g. through an outreach service DIC or sexual health clinic)

[*]Multiple responses

IQR, Inter quartile range

Places for sex acts, venues/usual means for meeting friends and sex partners(Table 43)

Approximately, 75% of MSW said that they met their friends at home which was also a common venue for sex acts with either new or regular clients in the last week. Cell phone was the most common means for contacting male sex partners and was reported by more than 95% of MSW. Using the internet for this purpose was reported by 12.7% of MSW.

Table-43: Venue for meeting friends, sex partners and for sex act

Indicators	N= 370, unless otherwise stated % (95% CI)
Place of sex acts with new clients in the last week (Denominator is who had new clients in the last week)*	N=284
Home	81.3 (75.3-86.1)
Road side/Around bridge/Inside pipe/In-front of parliament	24.3 (18.2-31.6)
Park	19.7 (12.7-29.3)
Working place	16.9 (11.2-24.8)
Hotel	15.5 (11.1-21.3)
Roof top	13.7 (9.5-19.4)
Market	8.5 (4.9-14.1)
Bus stand	6.7 (4.3-10.2)
Car/Train compartment/Steamer	3.2 (1.6-6.0)
Cinema Hall	2.5 (0.9-6.3)
School/College	0.4 (0.1-2.3)
Place of sex acts with regular clients in the last week (Denominator is who had regular clients in the last week)*	N=286
Home	86.7 (80.8-91.0)
Road side/Surrounding bridge	20.3 (15.2-26.5)
Working Place	17.5 (12.3-24.2)
Hotel	16.4 (11.9-22.2)
Park	16.4 (10.7-24.4)
Roof top	14.7 (10.3-20.5)
Market/Shop	8.4 (4.7-14.5)
Car/Train compartment/Steamer	4.2 (2.3-7.6)
Bus Stand/River bank (boat stand)	3.8 (2.0-7.4)
Cinema Hall	1.7 (0.7-4.5)
Rail station	1.7 (0.3-8.4)
Usual meeting place with friends*	
At home	74.9 (69.3-79.7)
Cruising spot	67.8 (60.4-74.5)
Tea stall/Bazaar/Market	69.5 (62.3-75.8)
On the street	45.4 (39.6-51.4)
Working Place	37.0 (29.1-45.8)
Club/Party	7.6 (4.9-11.5)
Hotel/boarding	3.5 (1.9-6.5)
School/College/Madrasa	0.3 (0.0-1.9)
Venues/usual means of contacting with male sex partners*	
By cell phone	95.4 (92.2-97.3)
Cruising spot	55.1 (47.8-62.2)
Tea stall/Bazaar/Market	50.0 (41.9-58.1)
On the street	38.1 (31.9-44.7)
At home	30.0 (24.8-35.7)
Friends	27.3 (21.9-33.4)
Working place	26.8 (20.6-33.9)
Internet (Social media, Email)	12.7 (8.8-17.9)
Club/Party	5.1 (3.2-8.2)
Hotel/Boarding	3.8 (1.4-9.5)
Broker (Dalal)	0.3 (0.0-2.0)
School/College/Madrasa	0.3 (0.0-1.9)

*Multiple responses

Using illicit drugs(Table-44)

In the last year 11.9% of MSW sampled took illicit drugs (except alcohol andcannabis). Methamphetamine (Yaba) was the most common drug taken followed by the codeine containing cough syrup. No one said they had injected drugs in the last year. Very few (2.5%) said that their new/regular clients injected drugs.

Table-44: Using illicit drugs

Indicators	N= 370, unless otherwise stated % (95% CI)
Took any illicit drugs (except alcohol and cannabis) in the last 12 months	11.9 (8.6-16.2)
Type of drugs taken in the last year* (Denominator is who had taken drugs in the last year) Methamphetamine (Yaba) Codeine containing cough syrup (Phensidyl)	N=44 79.5 (64.7-89.2) 34.1 (19.8-52.1)
Injected drugs in the last year	0
Knew that their new/regular clients injected drugs	N=281 2.5 (1.2-4.9)

*Multiple responses

History of selling blood

Selling blood in the last year was not common and reported by only 0.3% (95% CI: 0.0-1.9).

History of taking female hormones (Table-45)

A substantial percentage of MSW had taken oestrogen and progesterone containing hormone tablets and/or injections some time in their lives. Their main reason for taking these hormones were for the enhancement of breasts followed by increasing smoothness of the skin to attract male sex partners.

Table-45: History of taking female hormones

Indicators	N= 370, unless otherwise stated % (95% CI)
Ever took female hormones	25.4 (20.5-31.0)
Took female hormones in the last 3 months (Denominator is who ever took female hormones)	N=94 51.1 (42.6-59.4)
Reasons for taking female hormones* (Denominator is who had taken female hormones in the last three months)	N=48
Enhancing breast size	93.8 (82.1-98.0)
Increasing smoothness of skin	41.7 (28.2-56.5)
Improving shape of thigh/hip	22.9 (13.1-36.9)
Suppressing growth of facial hair	2.1 (0.3-13.5)

*Multiple responses

Profile of clients as identified by MSW(Table-46)

Most clients of MSW were service holders, businessmen and students.

Table-46: Profile of clients as identified by MSW

Indicators	N= 370, unless otherwise stated % (95% CI)
Commonly reported occupation of clients (both new and regular clients)	
Service holder	30.8 (25.9-36.2)
Business	24.3 (19.5-29.9)
Student	20.8 (16.4-26.1)
Day labour	8.4 (4.8-14.1)
Motor driver	8.1 (5.5-11.7)
Rickshaw puller	5.4 (3.1-9.3)
Unemployed	0.8 (0.2-3.5)
Men in uniform	0.5 (0.1-2.2)
Politician	0.3 (0.0-1.9)
Foreigner	0.3 (0.0-1.9)
Singer	0.3 (0.0-1.8)
Characterisation of the last new/regular client in the last week (Denominator is who had new or regular clients in the last week)	N=339
General person	64.6 (58.5-70.2)
MSM	32.2 (26.4-38.5)
Client of female sex workers	2.1 (1.0-4.2)
Do not know	1.2 (0.5-2.9)

*Multiple responses

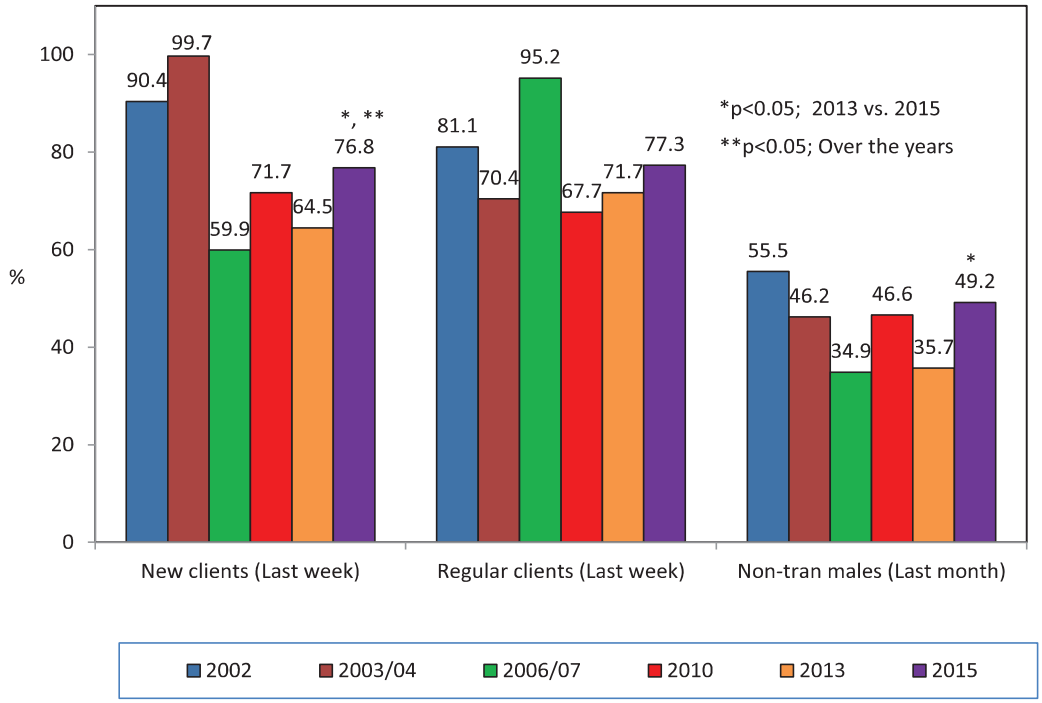
B. Changes in some key risk behaviours over the years of surveillance in MSW in Dhaka

Changes in some selected risk behaviours have been compared over the years of BSS from 2002-2015 in Dhaka. Analysis to assess changes between the last and present BSS conducted in 2013 and 2015 respectively was also carried out.

Male sex partners in the last week and month

Figure-34 shows the percentages of MSW reporting sex with different types of male sex partners in Dhaka. Percentages of MSW reporting sex with new clients increased significantly over the years and also in 2015 compared to 2013 ($p<0.05$ for both). No changes were observed with regular clients. Sex with non-transactional males increased in 2015 compared to 2013 but not over the previous years.

Figure-34: Had sex in the last week with different types



Condom use in the last week and month

Condom use in the last week and month with different types of male sex partners is shown in Figure-35. Both last time and consistent condom use with new and regular clients in the last week increased significantly over the years ($p<0.05$ for both). During non-transactional sex, both last time and consistent condom use also increased significantly over the years ($p<0.05$ for both). No significant changes were observed with new clients/regular clients/non-transactional sex partners in both the last time and consistent condom use in 2015 compared to 2013. MSW were also asked whether a condom was used while having anal sex with any male sex partner (irrespective of partner type) last time in the last one year. The data showed that 54% of MSM did so in 2015 (Figure-36) and this significantly increased over time from 2010 to 2015 ($p<0.05$).

Figure-35: Condom use in the last sex and last week/month

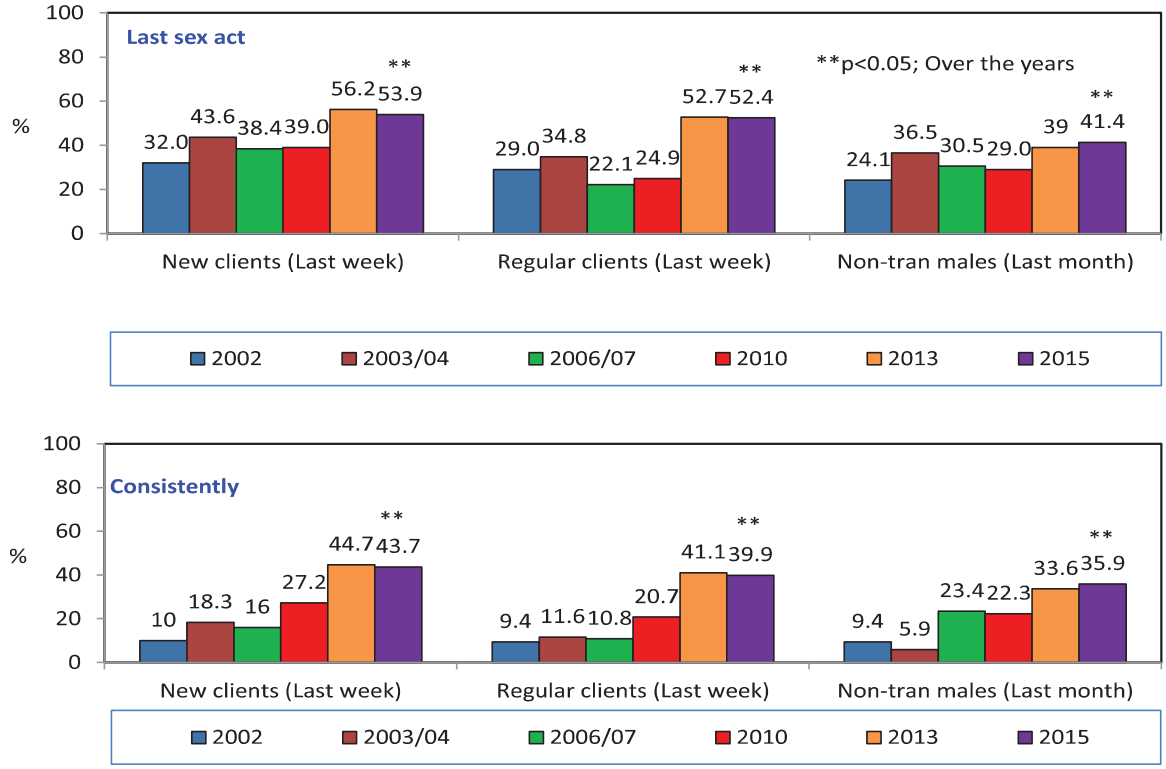
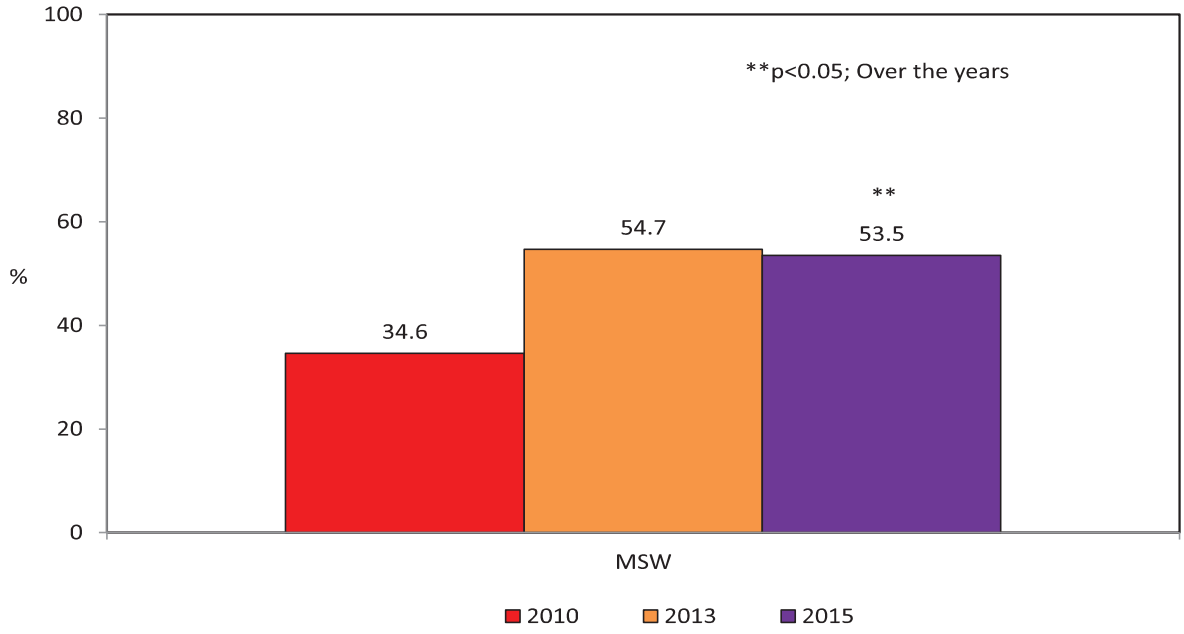


Figure-36: Condom use in the last anal sex act with a male sex partner‡



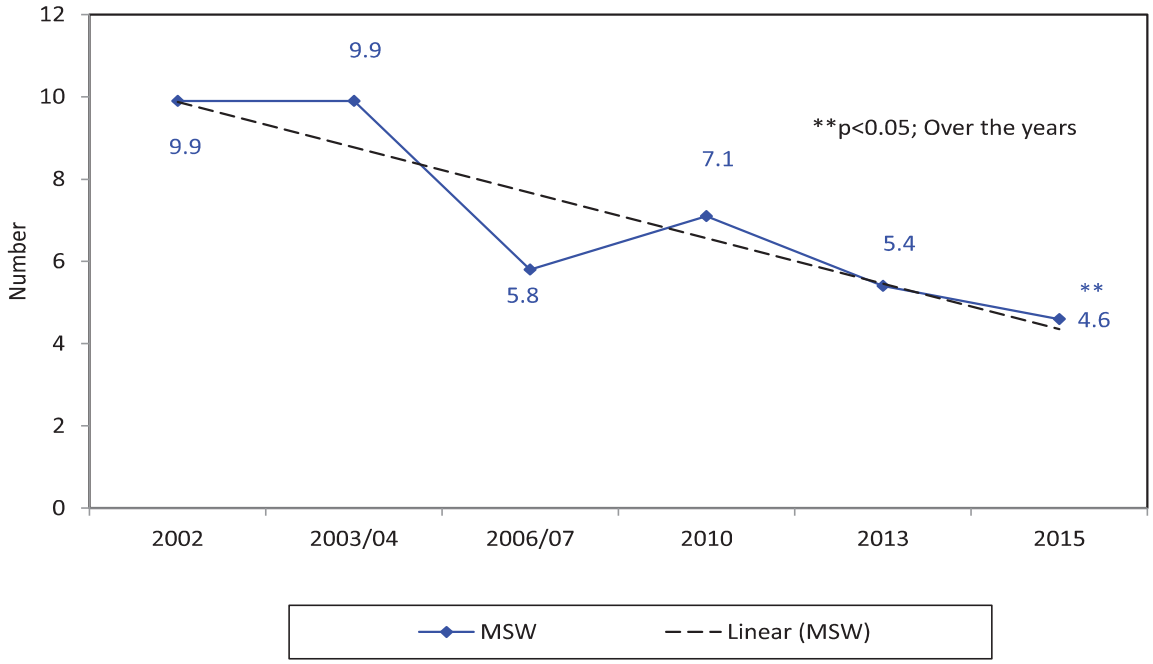
‡For MSW in the last one year

Note: Information before 2010 not available

Number of clients in the last week

The mean number of new and regular clients declined significantly over the years (denoted by dash lines in Figure-37) ($p<0.05$). However, no significant change was observed between 2013 and 2015.

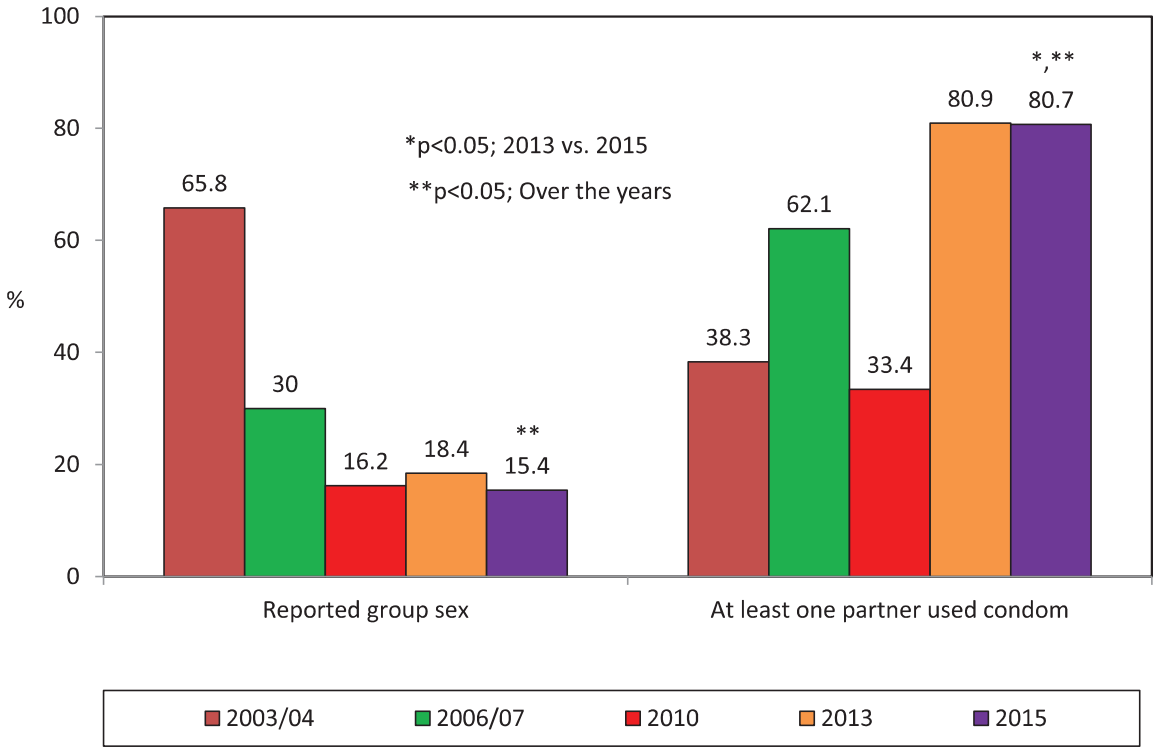
Figure-37: Mean number of male clients (new and regular) in the last week



Group sex and condom use

Over the years, significantly fewer MSW reported group sex and condom use during last group sex increased significantly (Figure-38) ($p<0.05$ for both). However, no changes were observed between 2013 and 2015.

Figure-38: Had group sex and used condom in the last group sex in the last month



Exposure to HIV/AIDS prevention programmes and HIV testing

Figure-39 shows the involvement of the respondents with HIV/AIDS prevention programmes. No significant changes were observed in the exposure to HIV/AIDS prevention programmes over time. However, exposure to HIV/AIDS prevention programmes in the last year declined significantly in 2015 compared to 2013. Over the years significantly more MSW received HIV testing and also knew their results ($p<0.05$) but no changes were observed in 2015 compared to 2013 (Figure-40).

Figure-39: Participated in HIV/AIDS prevention programmes in the last year

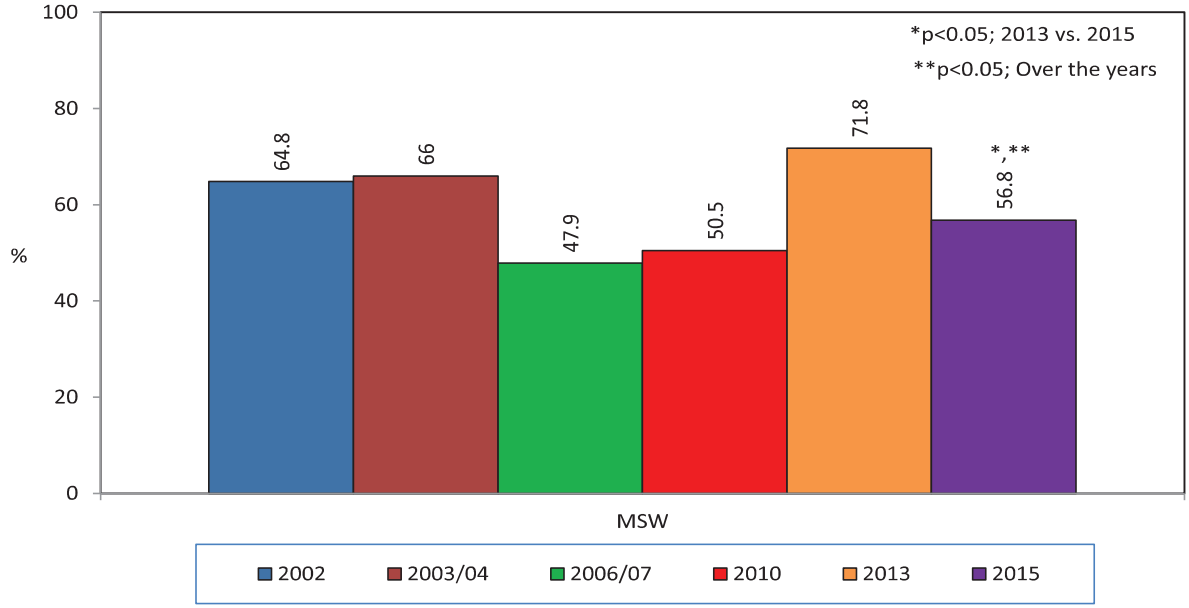
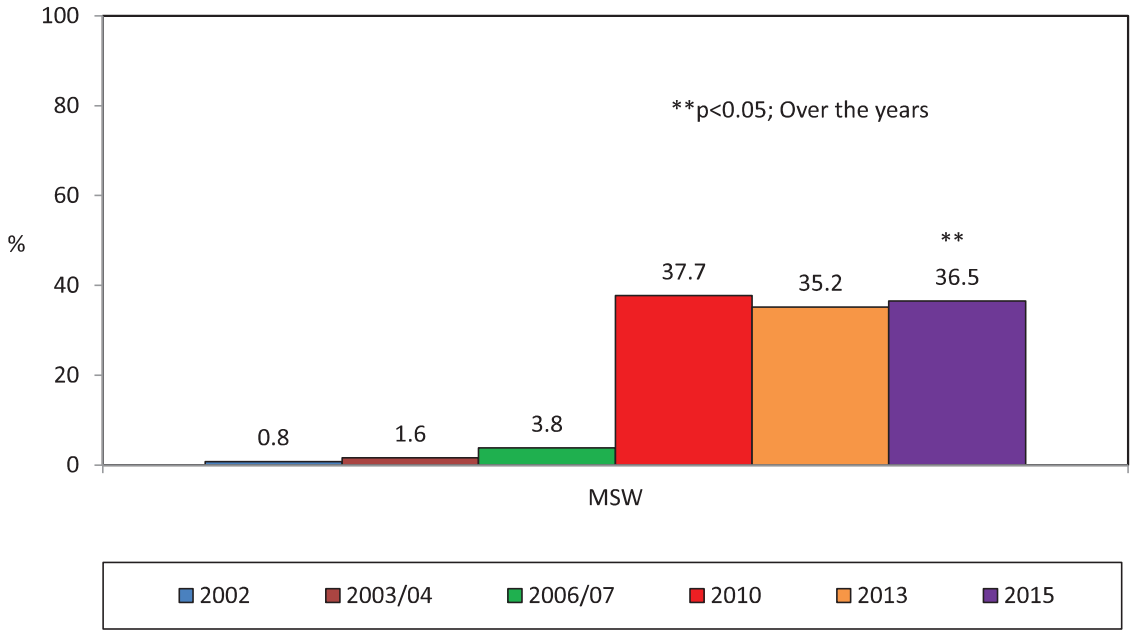


Figure-40: Tested for HIV and knew the results in the last year

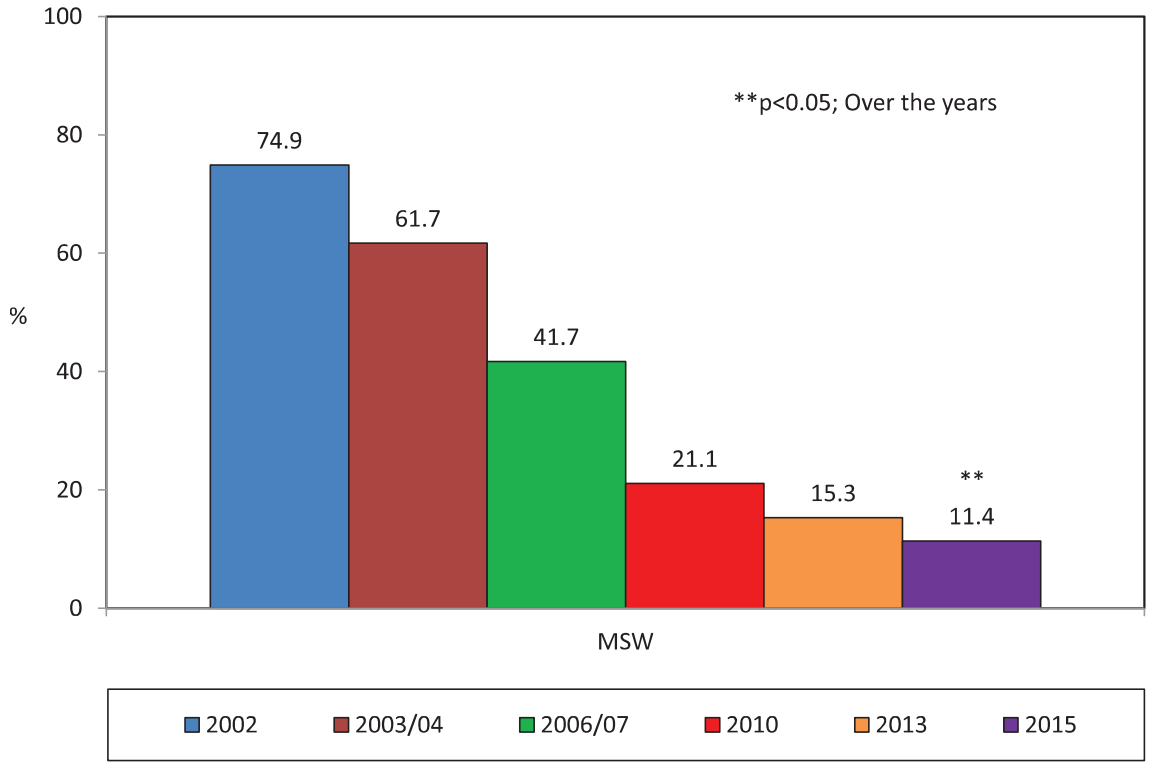


‡ Who replied "yes" to both questions:
1. Have you been tested for HIV in the last 12 months?
2. If yes, I don't want to know the results, but did you receive the results of that test?

Self-reported STIs

Over time significantly fewer MSW reported symptoms of STIs ($p<0.05$) and no changes were observed in 2015 compared to 2013 (Figure-41).

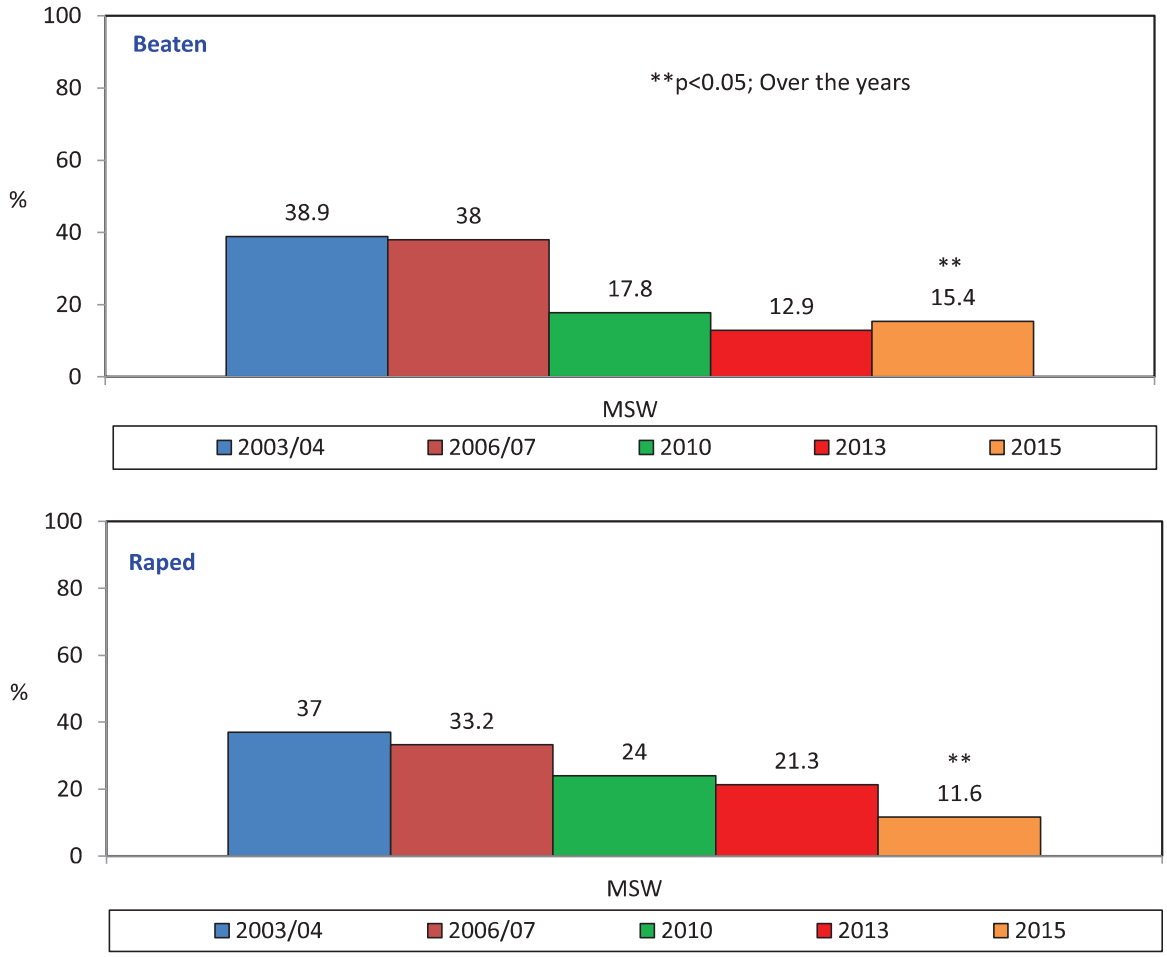
Figure-41: Complained at least one STI symptoms in the last year



Violence

The percentages of MSW reporting being either beaten or raped in the last year declined significantly over time (Figure-42) ($p<0.05$ for both) but no changes were observed in 2015 compared to 2013.

Figure-42: Beaten and raped in the last one year



HIJRA

The results from the BSS from the hijra in Dhaka are presented in the following two sections; A. Findings from the 2015 risk behavioural surveillance and B. Changes in some key risk behaviours over the years of surveillance.

A. Findings from the 2015 risk behavioural surveillance

Hijra (N=570) were sampled from Dhaka city from 28th August to 8th September, 2015. Of 570 hijra sampled, 32.8% (95% CI: 29.1-36.8) were badhai hijra (non-sex worker) and 67.2% (95% CI: 63.2-70.9) were sex worker hijra. In the following sections, analysis of data from hijra in Dhaka city are presented.

Socio-demographic characteristics (Table-47)

Mean age of all hijra was 29.2 years and on average had 4.1 years of schooling. Approximately 70% hijra were living in Dhaka for 10 years or more. Sex worker hijra earned significantly more than badhai hijra ($p<0.05$) and for 38.4% the income came from sex work. For badhai hijra, 96.8% said their earning was from badhai work. The average duration of selling sex was approximately 8-9 years.

Table-47: Socio-demographic characteristics

Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
Age (in years), % (95% CI)				
18-24	28.9 (22.8-35.8)	20.4 (16.6-24.7)	NS	23.2 (19.9-26.8)
>24	71.1 (64.2-77.2)	79.6 (75.3-83.4)	NS	76.8 (73.2-80.1)
Age (in years)				
Mean (95% CI)	29.1 (28.1-30.2)	29.3 (28.7-29.9)	NS	29.2 (28.7-29.8)
Median (IQR)	28.0 (24.0-34.0)	28.0 (25.0-32.0)		28.0 (25.0-33.0)
Ever attended school, % (95% CI)	68.4 (61.4-74.7)	71.8 (67.1-76.1)	NS	70.7 (66.8-74.3)
Years of schooling				
Mean (95% CI)	3.9 (3.5-4.4)	4.1 (3.8-4.5)	NS	4.1 (3.8-4.3)
Median (IQR)	4.0 (0.0-6.0)	4.0 (0.0-7.0)		4.0 (0.0-7.0)
Years of schooling (Denominator is who ever attended school)	N=128	N=275		N=403
Mean (95% CI)	5.8 (5.3-6.2)	5.7 (5.4-6.0)	NS	5.7 (5.5-6.0)
Median (IQR)	5 (4-8)	5 (4-8)		5 (4-8)
Duration of stay in this city, % (95% CI)				
Whole life	46.0 (39.0-53.2)	36.3 (31.6-41.2)	NS	39.5 (35.5-43.6)
≤10 years	33.7 (27.3-40.8)	29.0 (24.6-33.7)	NS	30.5 (26.9-34.4)
>10 years	20.3 (15.1-26.7)	34.7 (30.1-39.6)	<0.05	30.0 (26.4-33.9)
Income (in taka) in the last month				
Mean (95% CI)	13,150.8 (12,210.5-14,091.1)	15,066.1 (14,385.1-15,747.1)	<0.05	14,437.7 (13,880.9-14,994.5)
Median (IQR)	11,000 (9,000-15,000)	14,000 (10,000-20,000)		12,000 (10,000-18,000)

Indicators	Badhai	Sex worker	Comparison p-value	Total
	N=187, unless otherwise stated	N=383, unless otherwise stated		N=570, unless otherwise stated
Main sources of income in the last month, % (95% CI)				
Badhai/Dhol/Cholla[§]	96.8 (93.0-98.6)	47.0 (42.0-52.0)	<0.05	63.3 (59.3-67.2)
Sex work	0	38.4 (33.6-43.4)	-	25.8 (22.4-29.6)
Radhuni (Cook)	2.7 (1.1-6.3)	11.2 (8.4-14.8)	<0.05	8.4 (6.4-11.0)
Business	0.5 (0.1-3.7)	1.3 (0.5-3.1)	NS	1.1 (0.5-2.3)
Service	0	1.3 (0.5-3.1)	-	0.9 (0.4-2.1)
Dance/Song (Baina)	0	0.8 (0.3-2.4)	-	0.5 (0.2-1.6)
Income (in taka) from sex work in the last month (Denominator is whose main source of income was sex work in the last month)				
Mean (95% CI)	-	6,690.1 (6,061.1-7,319.0)	-	-
Median (IQR)		5,000.0 (2,000.0-9,000.0)		
Income from the last new client in the last week (Denominator is who had new clients in the last week)		N=326		
Mean (95% CI)	-	215.1 (191.2-239.0)	-	-
Median (IQR)		150 (100-250)		
Income from the last regular client in the last week (Denominator is who had regular clients in the last week)		N=297		
Mean (95% CI)	-	180.0 (164.9-195.1)	-	-
Median (IQR)		150 (100-200)		
Duration of ever selling sex (in years)			-	-
Mean (95% CI)	-	9.3 (8.7-9.8)		
Median (IQR)		8 (5-12)		
Duration of selling sex in this city (in years)				
Mean (95% CI)	-	8.7 (8.2-9.3)	-	-
Median (IQR)		8 (5-11)		
Number of days engaged in selling sex in the last week (Denominator is who sold sex in the last week)		N=353		
Mean (95% CI)	-	4.2 (4.0-4.4)	-	-
Median (IQR)		4.0 (3.0-6.0)		

IQR refers to inter quartile range
NS refers to not significant
[§]Traditional rituals to earn money in hijra community

Marital status (Table-48)

Only 5.6% hijra reported that they were currently married. Generally, more badhai hijra had regular sex partners or parik than sex worker hijra (p<0.05). Among currently unmarried hijra, significantly more sex workers reported that they had regular sex partners or parik compared to badhai hijra (p<0.05). Their age at first sex was around 12 years and all said that their first sex partner was a male.

Table-48: Marital status and sex partners

Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
Current marital status, % (95% CI)				
Married	2.7 (1.1-6.3)	7.0 (4.9-10.1)	NS	5.6 (4.0-7.8)
Unmarried[§]				
Currently living with spouse (Denominator is who were currently married), % (95% CI)	N=5 60.0 (18.5-90.9)	N=27 59.3 (39.2-76.6)	NS	N=32 59.4 (40.9-75.5)
Currently had regular sex partners/parik[Φ] (Denominator is all hijra), % (95% CI)	66.8 (59.8-73.2)	53.5 (48.5-58.5)	<0.05	57.9 (53.8-61.9)
Currently had regular sex partners/parik besides spouse (Denominator is who were currently married), % (95% CI)	N=5 40.0 (9.1-81.5)	N=27 88.9 (69.2-96.6)	NS	N=32 81.3 (62.9-91.7)
Currently had regular sex partners/parik (Denominator is who were currently unmarried), % (95% CI)	N=178 72.5 (65.4-78.5)	N=349 87.1 (83.1-90.2)	<0.05	N=527 82.2 (78.6-85.2)
Age at first sex (in years)				
Mean (95% CI)	12.1 (11.8-12.3)	12.5 (12.3-12.7)	NS	12.3 (12.2-12.5)
Median (IQR)	12.0 (11.0-13.0)	12.0 (11.0-14.0)		12.0 (11.0-14.0)
Gender of first sex partner, % (95% CI)				
Male	100.0	100.0	NS	100.0
Female	0	0	-	0
Hijra	0	0	-	0

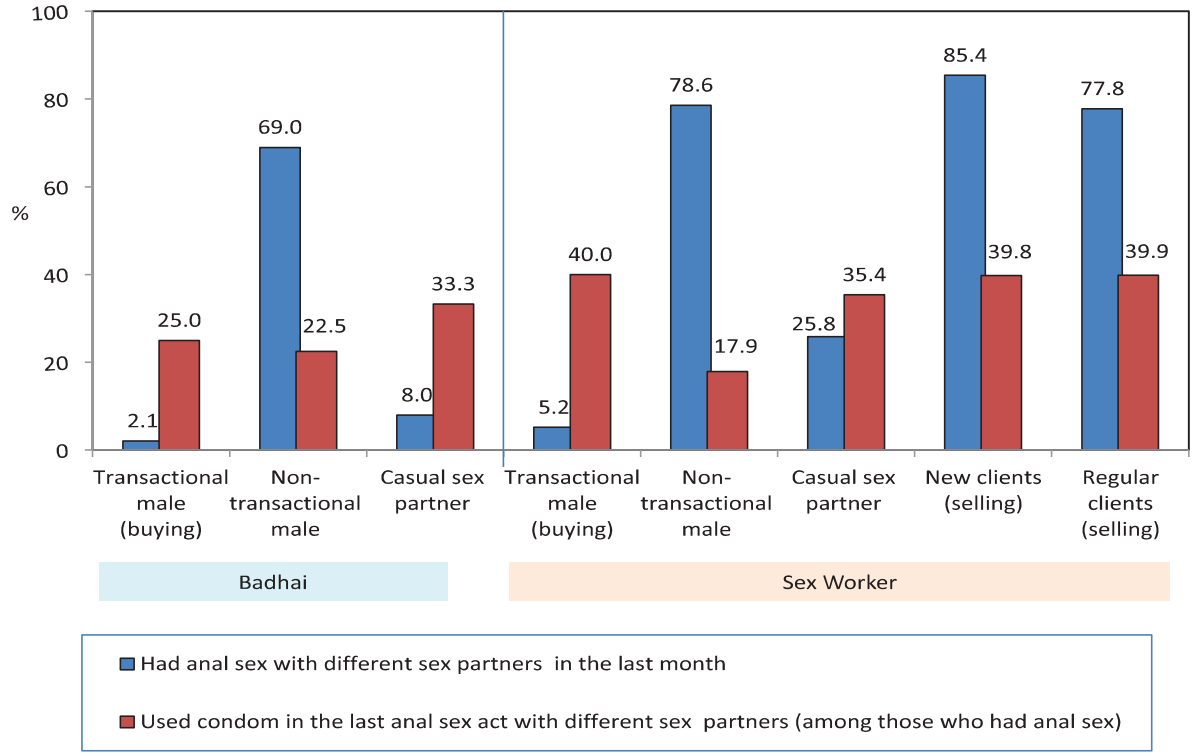
[§]Unmarried includeddivorced/widower/separated
IQR refers to inter quartile range
NS refers to not significant
[Φ]Male lover

Sexual history with male partners and condom use (Table-49 and Figure 43)

Figure-43 shows the percentages of hijra reporting anal sex and condom use with different sex partners. Sex partners included new and regular clients (in case of sex worker hijra) and non-transactional partners who may be regular or casual (one time). Significantly more sex worker hijra had casual male sex partners than badhai hijra ($p<0.05$). In the last week 78-85% sex worker hijra sold sex (anal) to both new and regular clients. Buying sex from male (receptive anal sex) was uncommon and reported by only 2-5% of hijra.

For badhai hijra, condom use in last sex ranged from 22.5-33.3% with different type of sex partners and for sex worker hijra the range was from 17.9-39.9%. For sex worker hijra, condom use was lowest with non-transactional male sex partners compared with new/regular/non-transactional sex partners ($p<0.05$ for all).

Figure-43: Hijra reporting anal sex in the last week/month and condom use during last anal intercourse



More sex worker than badhai hijra reported ever using condom during anal intercourse ($p<0.05$). Condom use in last sex with a male sex partner in the last year was significantly lower among badhai hijra ($p<0.05$). Condom breakage while having sex with a condom in the last month was reported by 15.4% of hijra.

Table-49: Overall use of condom

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Ever used condom during anal sex, % (95% CI)	84.0 (78.0-88.6)	98.2 (96.2-99.1)	<0.05	93.5 (91.2-95.3)
Used condom in the last anal sex act with a male sex partner in last 12 months (Denominator is who ever had anal sex with male sex partner in the last 12 months), % (95% CI)	N=159 25.2 (19.0-32.5)	50.7 (45.6-55.7)	<0.05	N=542 43.2 (39.0-47.4)
Used condom in the last anal sex act with a male sex partner, % (95% CI)	21.4 (16.1-27.9)	50.7 (45.6-55.7)	<0.05	41.1 (37.1-45.2)
Reported a condom break in the last month (Denominator is who had sex and used condom in the last month), % (95% CI)	N=54 5.6 (1.8-15.9)	N=317 17.0 (13.3-21.6)	NS	N=371 15.4 (12.0-19.4)

Frequency of condom use during anal intercourse with different sex partners in the last week (for clients) or month (for non-transactional sex partners or while buying sex) are presented in Figure-44. In general, consistent use of condom in the last week/month ranged from 20.2-26.7% in badhai and 14-29.3% for sex worker hijra.

Figure-44: Frequency of condom use during anal intercourse among hijra in the last week/month

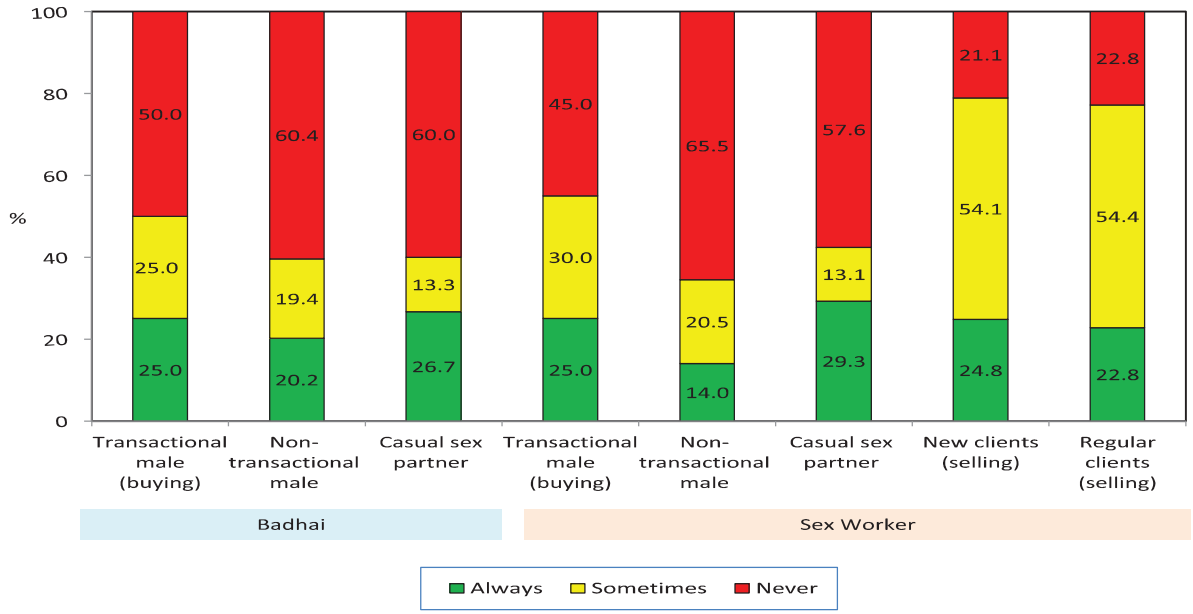


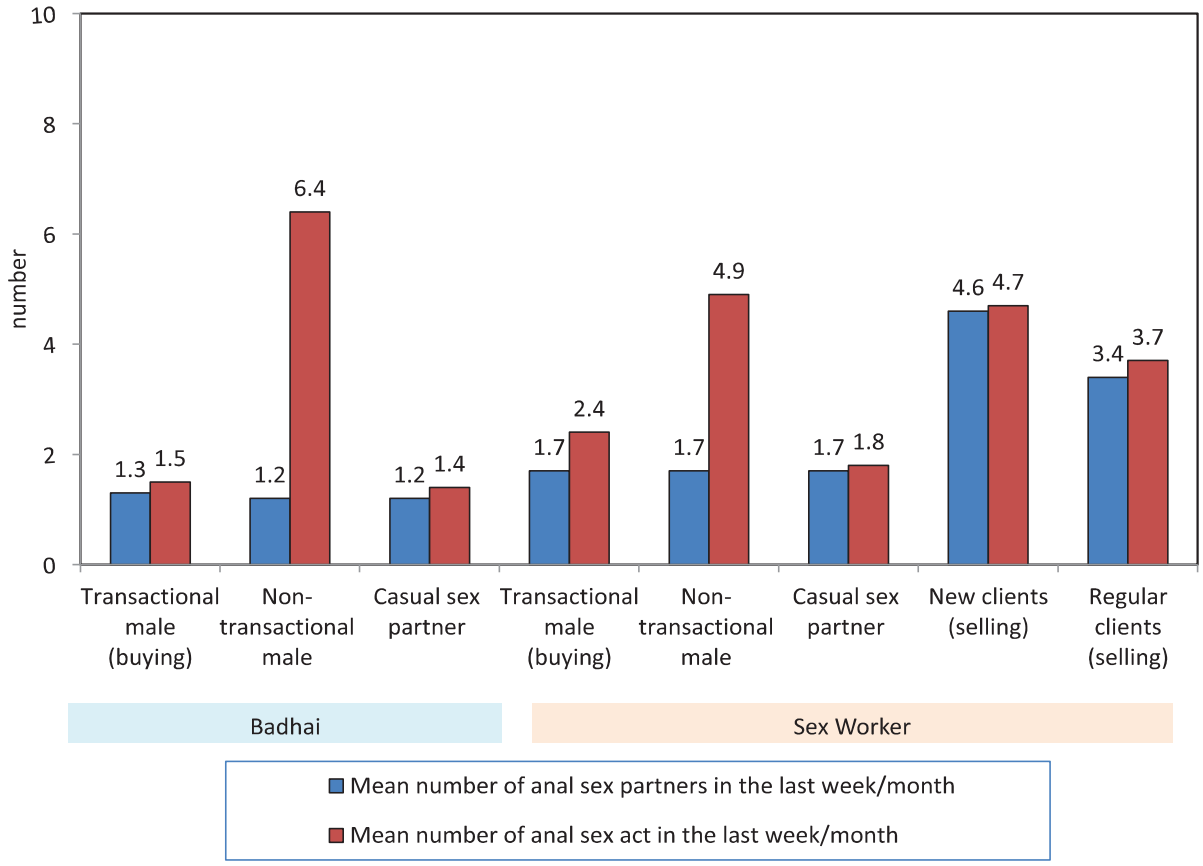
Figure-45 presents the mean number of anal sex partners and anal sex acts in hijra with clients (last week) and while buying sex or having non-transactional sex (last month). Irrespective of partner type, the average

number of sex partners for badhai hijra was less than two in the last month. Multiple sex acts were reported by both badhai and sex worker hijra with each partner type. For non-transactional sex, badhai hijra reported a greater number of sex acts than sex worker hijra ($p<0.05$). Sex worker hijra reported significantly more anal sex acts with new than regular clients by ($p<0.05$ for both).

Taking both new and regular clients into consideration, 92.2% (95% CI: 89.0-94.5) sex worker hijra said they had taken clients last week. Among those who had clients, the average number in the last week was 9.2 (95% CI: 8.5-9.9). Non-penetrative sex with these clients was reported by 24.5% (95% CI: 20.5-29.1) of sex worker hijra.

The mean number of anal sex acts in the last week/month with males whether transactional or non-transactional was 10.3 (95% CI: 9.8-10.9).

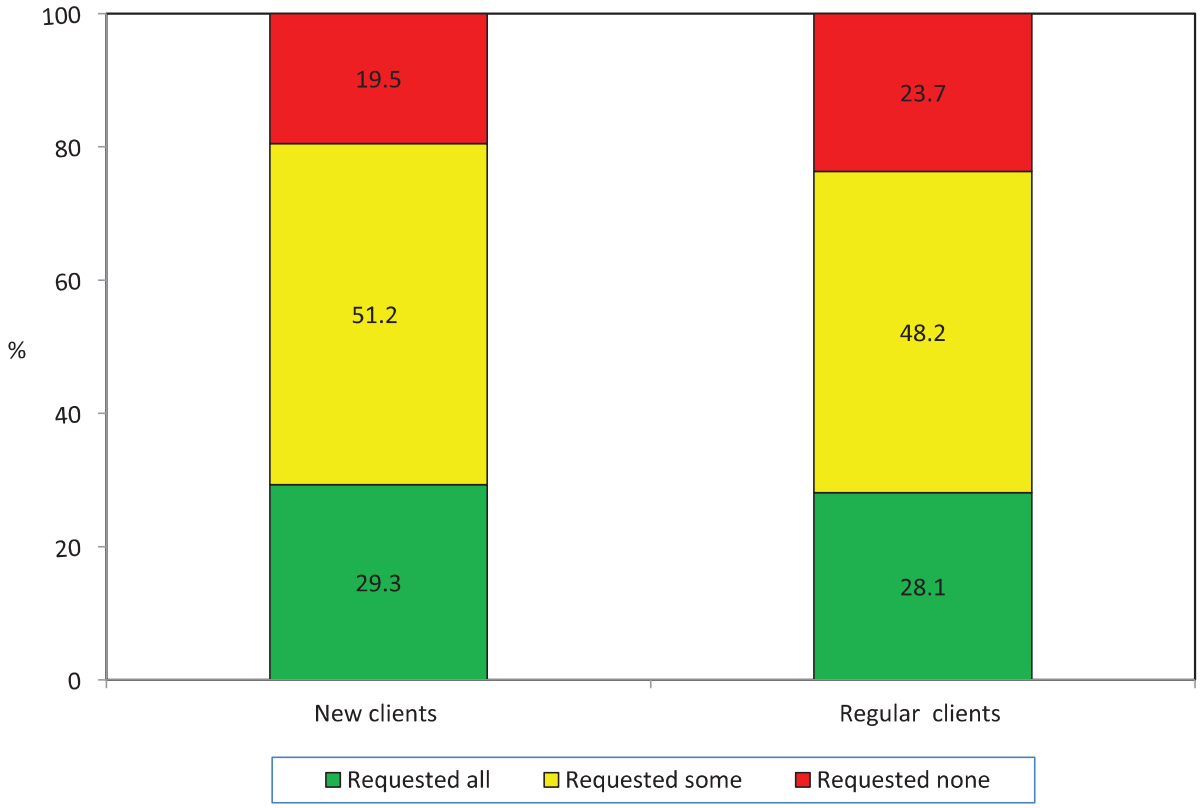
Figure-45: Mean number of sex partners (anal) and anal sex acts in the last week/month



Sex worker hijra requested clients to use condoms in the last week (Figure-46)

Approximately, 20-24% of the sex worker hijra said they had asked their new or regular clients to use condoms in the last week. However, approximately 30% reported never doing so.

Figure-46: Requested clients to use condoms



History of oral sex (Table-50)

Approximately half of sex worker hijra reported having oral sex with new or regular clients in the last week with an average of three male sex partners. With other partner types, oral sex was not common. More than 60% of sex worker hijra reported never using condoms during oral sex.

Table-50: History of oral sex with male sex partners

Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
New clients				
Had oral sex with new clients in the last week, % (95% CI)	-	55.9 (50.8-60.8)	-	-
Number of new clients in the last week with whom hijra had oral sex (Denominator is who had oral sex with new clients in the last week) Mean (95% CI) Median (IQR)	-	N=214 3.5 (3.2-3.9) 3.0 (2.0-5.0)	-	-
Frequency of condom use in oral sex		N=62		

Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
with new clients in the last week (Denominator is who had oral sex with new clients in the last week), % (95% CI)				
Always	-	22.6 (13.7-35.0)	-	-
Sometimes		14.5 (7.6-26.0)		
Never		62.9 (50.0-74.2)		
Regular clients				
Had oral sex with regular clients in the last week, % (95% CI)	-	48.3 (43.3-53.3)	-	-
Number of regular clients with whom hijra had oral sex in the last week (Denominator is who had oral sex with regular clients in the last week)		N=164		
Mean (95% CI)	-	2.8 (2.5-3.0)	-	-
Median (IQR)		2.0 (2.0-3.0)		
Frequency of condom use in oral sex with regular clients in the last week (Denominator is who had oral sex with regular clients in the last week), % (95% CI)		N=43		
Always	-	16.3 (7.7-31.1)	-	-
Sometimes		9.3 (3.4-23.1)		
Never		74.4 (58.8-85.6)		
Buying sex from males				
Had oral sex while buying sex from males in the last month up to ejaculation, % (95% CI)	0	0.2 (0.0-1.2)	-	0.2 (0.0-1.2)
Number of male sex partners with whom hijra had oral sex in the last month (Denominator is who bought sex from male sex partners in the last month and had oral sex) up to ejaculation		N=1		
Mean (95% CI)	-	1.0	-	-
Median (IQR)		1.0 (1.0-1.0)		
Sex with non-transactional males				
Had oral sex with non-transactional male sex partners in the last month up to ejaculation, % (95% CI)	1.1 (0.5-2.3)	2.6 (1.6-4.3)	NS	3.7 (2.4-5.6)
Number of non-transactional male sex partners with whom had oral sex in the last month (Denominator is who had oral sex with non-transactional male sex partners in the last month) up to ejaculation	N=6	N=15		N=21
Mean (95% CI)	1.0	1.2 (1.0-1.4)	-	1.1 (1.0-1.3)
Median (IQR)	1.0 (1.0-1.0)	1.0 (1.0-1.0)		1.0 (1.0-1.0)
Frequency of condom use in oral sex				

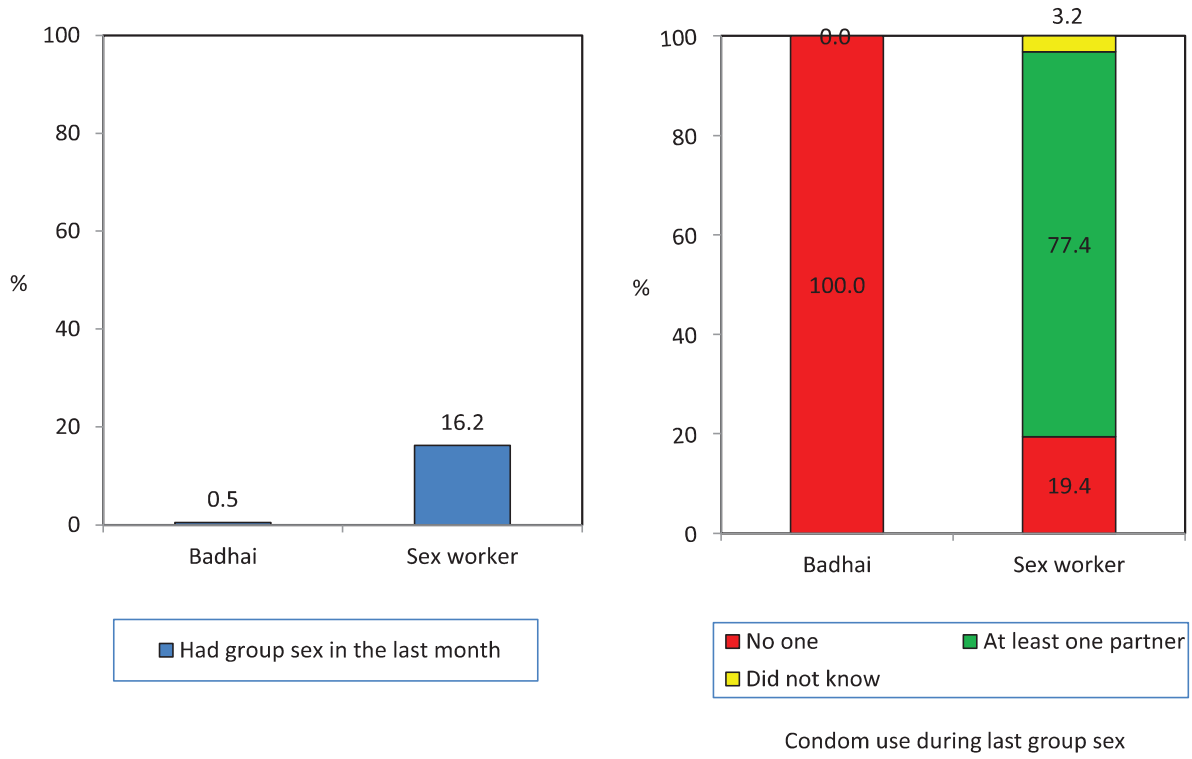
Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
with non-transactional male sex partners in the last month (Denominator is who had anal sex with non-transactional male in the last month) up to ejaculation, % (95% CI)	N=6	N=15		N=21
Always	33.0 (7.3-76.1)	0	-	9.5 (2.1-34.0)
Sometimes	16.7 (1.9-67.5)	6.7 (0.8-39.5)	NS	9.5 (2.1-34.0)
Never	50.0 (14.9-85.1)	93.3 (60.5-99.3)	NS	81.0 (56.4-93.3)
Sex with casual males				
Had oral sex with casual male sex partners in the last month up to ejaculation, % (95% CI)	0	1.6 (0.8-3.0)	-	1.6 (0.8-3.0)
Number of casual male partners with whom hijra had oral sex in the last month (Denominator is who had oral sex with casual male sex partners in the last month) up to ejaculation		N=9		
Mean (95% CI)	-	1.1 (0.9-1.4)	-	-
Median (IQR)		1.0 (1.0-1.0)		
Frequency of condom use in oral sex with casual male sex partners in the last month (Denominator is who had anal sex with casual male in the last month) up to ejaculation, % (95% CI)		N=9		
Always	-	44.4 (13.4-80.5)	-	-
Sometimes		0		
Never		55.6 (19.5-86.6)		

IQR refers to inter quartile range
NS refers to not significant

History of group sex (Figure-47)

Group sex was more common among sex worker compared to badhai hijra ($p<0.05$). In both groups of hijra, mean number of sex partners in the last group sex was 2-3, excluding the respondent. Condom use by at least one sex partner of the group was reported by 77.4% (95% CI: 65.0-86.3) of sex worker hijra and no one among the badhai hijra used condom.

Figure-47: Group sex and condom use during last group sex



Access to condoms (Table-51)

Everyone knew where condoms were available. Significantly more sex worker hijra (95.0%) mentioned DIC/NGO/Depot holder, i.e. HIV prevention programmes as a source of condoms than badhai hijra (87.2%) ($p<0.05$) and this was the main source of condoms for all hijra who had sex and used condom in the last month. Among those who had sex in the last month, approximately 40% mentioned that they did not have easy access to condoms and this was higher in sex worker hijra than badhai hijra ($p<0.05$). The main reason for not having easy access to condoms in the last month was because the DIC was far away or closed or that the outreach worker was not available.

Table-51: Access to condoms and ease of access

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Knowledge on the sources of condom*				
HIV Prevention programmes (DIC/Depot holder/Outreach workers)	87.2 (81.5-91.3)	95.0 (92.3-96.8)	<0.05	92.5 (90.0-94.4)
Pharmacy	78.6 (72.1-83.9)	74.2 (69.5-78.3)	NS	75.6 (71.9-79.0)
Shop	42.2 (35.3-49.5)	28.7 (24.4-33.5)	<0.05	33.2 (29.4-37.1)
Sex partner	2.1 (0.8-5.6)	32.9 (28.4-37.8)	<0.05	22.8 (19.5-26.4)
Friends	4.8 (2.5-9.0)	14.1 (11.0-18.0)	<0.05	11.1 (8.7-13.9)
Health centre (besides DIC)	4.3 (2.1-8.3)	4.2 (2.6-6.7)	NS	4.2 (2.8-6.2)
Bar/Guest house/Hotel	0	0.3 (0.0-1.8)	-	0.2 (0.0-1.2)
Sources of condom* (Denominator is who had sex and used condom in the last month)	N=54	N=317		N=371
HIV Prevention programmes (DIC/Depot holder/Outreach workers)	79.6 (66.8-88.4)	70.3 (65.1-75.1)	NS	71.7 (66.9-76.1)
Sex partner	25.9 (16.0-39.2)	37.9 (32.7-43.3)	NS	36.1 (31.4-41.2)
Pharmacy	31.5 (20.5-45.0)	30.0 (25.2-35.3)	NS	30.2 (25.7-35.1)
Friends	3.7 (0.9-13.7)	15.5 (11.9-19.9)	NS	13.7 (10.6-17.7)
Shop	18.5 (10.2-31.2)	8.2 (5.6-11.8)	NS	9.7 (7.1-13.2)
Bar/Guest house/Hotel	0	0.3 (0.0-2.2)	-	0.3 (0.0-1.9)
Had easy access to condoms in the last one month	78.1 (71.6-83.4)	53.8 (48.8-58.7)	<0.05	61.8 (57.7-65.7)
Had easy access to condoms in the last one month (Denominator is who used condom in last month)	N=54	N=317		N=371
Yes	83.3 (70.9-91.1)	56.5 (50.9-61.9)	<0.05	60.4 (55.3-65.3)
No	16.7 (8.9-29.1)	43.5 (38.1-49.1)	<0.05	39.6 (34.7-44.7)
Reasons for not having easy access to condoms in the last month* (Denominator is who reported not having easy access to condoms in the last month)	N=9	N=138		N=147
DIC is far away	44.4 (17.5-75.2)	78.3 (70.5-84.4)	NS	76.2 (68.5-82.5)
Peer educator not available	55.6 (24.8-82.5)	61.6 (53.1-69.4)	NS	61.2 (53.0-68.8)
DIC/Depot is closed	33.3 (11.0-67.0)	61.6 (53.1-69.4)	NS	59.9 (51.7-67.6)
Feel ashamed/Troublesome/Afraid to buy	33.3 (11.0-67.0)	13.8 (8.9-20.7)	NS	15.0 (10.0-21.8)
Cost is too high	0	10.9 (6.6-17.3)	-	10.2 (6.2-16.3)
Not willing to carry	11.1 (1.5-50.6)	3.6 (1.5-8.5)	NS	4.1 (1.8-8.9)
Shop/Pharmacy is far away	22.2 (5.5-58.4)	1.4 (0.4-5.7)	NS	2.7 (1.0-7.1)
Shop/Pharmacy is closed	0	2.9 (1.1-7.5)	-	2.7 (1.0-7.1)
Do not know where to buy	11.1 (1.5-50.6)	0	-	0.7 (0.1-4.8)

*Multiple responses
NS refers to not significant

Knowledge and use of lubricants (Table-52)

Approximately 97% of hijra had ever heard about lubricants and most knew about the lubricant brand 'Lubricating gel/Shathi'. Approximately 97% hijra ever used lubricants while having anal intercourse, which was more common among sex worker than badhai hijra ($p<0.05$). More sex worker hijra reported ever using lubricant with a condom during last anal sex in the last 12 months ($p<0.05$). On the other hand, more sex worker hijra than badhai hijra mentioned 'shortage of supply' and more badhai hijra than sex worker hijra mentioned feeling not good for never using lubricants together with condoms ($p<0.05$ for both).

Table-52: Knowledge and use of lubricants

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Ever used lubricant while having anal intercourse	91.4 (86.5-94.7)	99.0 (97.2-99.6)	<0.05	96.5 (94.6-97.7)
Type of lubricant used in the last 12 months* (Denominator is who used lubricant in last 12 months)	N=152	N=379		N=531
Water based lubricant	80.3 (73.1-85.9)	78.6 (74.2-82.5)	NS	79.1 (75.4-82.4)
Saliva	28.9 (22.3-36.7)	39.1 (34.2-44.1)	NS	36.2 (32.2-40.3)
Oil	5.9 (3.1-11.0)	6.1 (4.1-9.0)	NS	6.0 (4.3-8.4)
Ordinary lotion/Vaseline/Petroleum jelly/Beauty cream	5.9 (3.1-11.0)	5.3 (3.4-8.0)	NS	5.5 (3.8-7.8)
Antiseptic cream	2.0 (0.6-6.0)	2.4 (1.2-4.5)	NS	2.3 (1.3-3.9)
Shampoo/Soap	0	0.3 (0.0-1.9)	-	0.2 (0.0-1.3)
Ever heard about lubricant made especially for use with condoms	94.1 (89.7-96.7)	98.7 (96.9-99.5)	<0.05	97.2 (95.5-98.3)
Was able to mention brand name of such product (Denominator who ever heard about lubricant)	N=176 96.0 (91.9-98.1)	N=378 96.0 (93.5-97.6)	NS	N=554 96.0 (94.0-97.4)
Name of brand (Denominator is who mentioned the brand name)	N=169	N=363		N=532
Lubricating gel	58.6 (51.0-65.8)	68.6 (63.6-73.2)	-	65.4 (61.3-69.3)
Shathi	41.4 (34.2-49.0)	31.4 (26.8-36.4)		34.6 (30.7-38.7)
Used lubricant with condom during the last anal intercourse in the last 12 months (Denominator is who used lubricant in last 12 months)	N=152 25.0 (18.7-32.5)	N=379 37.7 (33.0-42.7)	<0.05	N=531 34.1 (30.2-38.2)
Frequency of using lubricant together with a condom during anal intercourse in the last month (Denominator is who had heard about special lubricant product for use with condoms and had anal intercourse in the last month)	N=130	N=373		N=503
Always	15.4 (10.1-22.7)	20.4 (16.6-24.8)	NS	19.1 (15.9-22.8)
Sometimes	26.9 (20.0-35.2)	63.5 (58.5-68.3)	<0.05	54.1 (49.7-58.4)
Never	57.7 (49.0-65.9)	16.1 (12.7-20.2)	<0.05	26.8 (23.1-30.9)

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Reasons for not using lubricant together with a condom never or sometimes in the last month (Denominator is who never or sometimes used condom and lubricant in the last month)*	N=110	N=297		N=412
Does not feel good	69.1 (59.8-77.0)	50.5 (44.8-56.2)	<0.05	55.5 (50.6-60.3)
Shortage of supply	15.5 (9.8-23.5)	55.2 (49.5-60.8)	<0.05	44.5 (39.7-49.4)
Use other cream	10.0 (5.6-17.2)	15.2 (11.5-19.7)	NS	13.8 (10.7-17.5)
Not easy to carry	5.5 (2.5-11.6)	13.8 (10.3-18.2)	NS	11.5 (8.8-15.0)
DIC closed	0	4.4 (2.6-7.4)	-	3.2 (1.9-5.4)
Sex partner/Client did not want to use	0.9 (0.1-6.2)	4.0 (2.3-7.0)	NS	3.2 (1.9-5.4)
Feel ashamed/Troublesome/Afraid to buy	3.6 (1.4-9.3)	2.4 (1.1-4.9)	NS	2.7 (1.5-4.8)
Do not know where to buy	0.9 (0.1-6.2)	2.0 (0.9-4.4)	NS	1.7 (0.8-3.6)
Cost is too high	0	1.7 (0.7-4.0)	-	1.2 (0.5-2.9)
Reasons for always using condom and lubricant in the last month (Denominator is who always used condom and lubricant in the last month)*	N=20	N=76		N=100
Increased sensation	90.0 (67.0-97.6)	88.2 (78.6-93.8)	NS	88.5 (80.3-93.6)
Decrease risk of condom breakage	90.0 (67.0-97.6)	76.3 (65.3-84.7)	NS	79.2 (69.7-86.3)
To avoid HIV/AIDS/STIs	70.0 (46.8-86.1)	64.5 (52.9-74.5)	NS	65.6 (55.4-74.6)
Decrease pain/Inflammation	20.0 (7.6-43.3)	47.4 (36.3-58.7)	NS	41.7 (32.1-51.9)

*Multiple responses

NS refers to not significant

Knowledge of STIs, self-reported STIs and care-seeking behaviour (Table-53)

The most common STI symptom that hijra knew about was burning pain on urination and genital ulcer/sore. Suffering from at least one STI symptom in the last year was reported by more sex worker than badhai hijra ($p<0.05$). Approximately 60% of hijra availed treatment from qualified practitioners which included from NGOs.

Table-53: Knowledge of STIs, self-reported STIs and care-seeking behaviour

Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
Knowledge about STIs symptoms*, % (95% CI)				
Genital ulcer/Sore	64.7 (57.6-71.2)	62.1 (57.2-66.9)	NS	63.0 (58.9-66.9)
Burning pain on urination	49.7 (42.6-56.9)	66.1 (61.2-70.6)	<0.05	60.7 (56.6-64.6)
Discharge from penis	53.5 (46.3-60.5)	60.1 (55.0-64.9)	NS	57.9 (53.8-61.9)
Anal ulcer/Sore	36.9 (30.3-44.1)	65.0 (60.1-69.6)	<0.05	55.8 (51.7-59.8)
Anal discharge	25.1 (19.4-31.9)	19.6 (15.9-23.9)	NS	21.4 (18.2-25.0)
Swellings in groin area	8.6 (5.3-13.5)	7.8 (5.5-11.0)	NS	8.1 (6.1-10.6)
Itching	0	0.3 (0.0-1.8)	-	0.2 (0.0-1.2)
Complained of urethral discharge in the last year, % (95% CI)	0	3.4 (2.0-5.8)	-	2.3 (1.3-3.9)
Complained of anal discharge in the last year, % (95% CI)	2.1 (0.8-5.6)	3.1 (1.8-5.4)	NS	2.8 (1.7-4.5)
Complained of ulcer/sore in the last year, % (95% CI)	2.1 (0.8-5.6)	6.3 (4.2-9.2)	NS	4.9 (3.4-7.0)
Reported having at least one STI symptom in the last year (urethral discharge or anal discharge or genital ulcer/sore in the last year), % (95% CI)	4.3 (2.1-8.3)	11.5 (8.7-15.1)	<0.05	9.1 (7.0-11.8)
The first choice of source of treatment for the last STI episode (Denominator is who reported STIs in last 12 months), % (95% CI)	N=8	N=44		N=52
NGO clinic	50.0 (19.3-80.7)	50.0 (35.2-64.8)	NS	50.0 (36.3-63.7)
Drug seller	25.0 (6.0-63.6)	29.5 (17.7-45.0)	NS	28.8 (17.9-43.0)
Did not seek treatment	0	9.1 (3.3-22.5)	-	7.7 (2.8-19.3)
Private doctor	25.0 (6.0-63.6)	2.3 (0.3-15.3)	NS	5.8 (1.8-17.0)
Private clinic	0	4.5 (1.1-17.1)	-	3.8 (0.9-14.7)
Self-medication	0	4.5 (1.1-17.1)	-	3.8 (0.9-14.7)
The first choice of source of treatment for the last STI symptom (Denominator is who reported STIs in last 12 months), % (95% CI)	N=8	N=44		N=52
Qualified practitioner[θ]	75.0 (36.4-94.0)	56.8 (41.5-70.9)	NS	59.6 (45.4-72.4)
Un-qualified practitioner[¶]	25.0 (6.0-63.6)	34.1 (21.3-49.6)	NS	32.7 (21.1-46.9)
No treatment	0	9.1 (3.3-22.5)	-	7.7 (2.8-19.3)
Waiting days till seeking treatment for the last STI episode (Denominator is who sought STI treatment in last one year)	N=8	N=40		N=48
Mean (95% CI)	12.1 (6.9-17.3)	7.3 (6.1-8.5)	NS	8.1 (6.7-9.5)
Median (IQR)	10.0 (8.0-12.5)	7.0 (5.0-10.0)		7.0 (5.0-10.0)
Expenditure (in taka) for the last STI treatment in the last year	N=8	N=40		N=48

Indicators	Badhai	Sex worker	Comparison p-value	Total
	N=187, unless otherwise stated	N=383, unless otherwise stated		N=570, unless otherwise stated
(Denominator is who reported STI last year and sought treatment)				
Mean (95% CI)	625.0 (362.1-887.9)	285.8 (174.9-396.6)	NS	342.3 (233.6-451.0)
Median (IQR)	525.0 (350.0-950.0)	185.0 (0.0-500.0)		200.0 (0.0-500.0)

θQualified practitioner refers to hospital, private clinic, private doctor and NGO clinic
¶ Un-qualified practitioner refers to drug seller, canvasser/traditional healer, advice/treatment from friends and self-medication
*Multiple responses
IQR refers to inter quartile range
NS refers to not significant

Knowledge of HIV and its modes of prevention and transmission (Table-54)

Almost all hijra had heard of HIV/AIDS. However, misconceptions about the transmission of HIV especially that HIV can be transmitted by mosquito bites and sharing food with an HIV infected person, was not uncommon. Only one-third had comprehensive knowledge of HIV.

Table-54: Knowledge of HIV and modes of HIV prevention and transmission

Indicators	Badhai	Sex worker	Comparison p-value	Total
	N=187, unless otherwise stated % (95% CI)	N=383, unless otherwise stated % (95% CI)		N=570, unless otherwise stated % (95% CI)
Heard about HIV/AIDS	99.5 (96.3-99.9)	100.0	-	99.8 (98.8-100.0)
Mentioned condom use (correctly and consistently in any type of sex) as a mode of prevention	92.0 (87.1-95.1)	90.1 (86.6-92.7)	NS	90.7 (88.0-92.8)
Mentioned avoiding anal sex as a mode of prevention	57.8 (50.5-64.7)	44.4 (39.5-49.4)	<0.05	48.8 (44.7-52.9)
Mentioned avoiding multiple sex as a mode of prevention	65.2 (58.1-71.7)	45.4 (40.5-50.5)	<0.05	51.9 (47.8-56.0)
Mentioned AIDS can be transmitted by mosquito bites	18.7 (13.7-25.0)	16.2 (12.8-20.2)	NS	17.0 (14.1-20.3)
Mentioned AIDS can be transmitted by sharing food with an HIV infected person	22.5 (17.0-29.0)	13.1 (10.0-16.8)	<0.05	16.1 (13.3-19.4)
Mentioned not sharing needles as a mode of prevention	85.6 (79.7-89.9)	92.2 (89.0-94.5)	NS	90.0 (87.2-92.2)
Mentioned one can tell by looking at someone whether they are infected with HIV	12.3 (8.3-17.8)	9.9 (7.3-13.4)	NS	10.7 (8.4-13.5)

Indicators	Badhai	Sex worker	Comparison p-value	Total
	N=187, unless otherwise stated % (95% CI)	N=383, unless otherwise stated % (95% CI)		N=570, unless otherwise stated % (95% CI)
Had comprehensive knowledge of HIV[§]	36.4 (29.8-43.5)	34.7 (30.1-39.6)	NS	35.3 (31.4-39.3)

NS refers to not significant

[§]This indicator was computed by correct answers to five questions:

1. Can people reduce their risk of HIV by using a condom correctly and consistently in any type of sex,
2. Can people reduce their risk of HIV by avoiding sex with multiple partners,
3. Can a person get HIV through mosquito bites,
4. Can a person get HIV by sharing a meal with someone who is HIV infected and
5. Can you tell by looking at someone whether s/he is infected with HIV.

Confidential HIV testing (Table-55)

Approximately 92% of the respondents knew where HIV could be tested confidentially with pre and post counselling facilities. Of these, 77.5% had been tested at some time in their lives and the percentage was higher in sex worker hijra than badhai hijra (p<0.05). Among those who had been tested, the majority were tested at the HIV prevention NGOs and more than half went on their own volition. In the last one year, overall 35.1% of hijra were tested for HIV and knew the result.

Table-55: Confidential HIV testing

Indicators	Badhai	Sex worker	Comparison p-value	Total
	N=187, unless otherwise stated % (95% CI)	N=383, unless otherwise stated % (95% CI)		N=570, unless otherwise stated % (95% CI)
Knew where HIV can be tested confidentially	87.7 (82.2-91.7)	94.0 (91.1-96.0)	NS	91.9 (89.4-93.9)
Ever tested for HIV	64.7 (57.6-71.2)	83.8 (79.8-87.2)	<0.05	77.5 (73.9-80.8)
Name of HIV testing facilities (Denominator is who had ever tested for HIV)	N=121	N=321		N=442
Government hospital	0	0	-	0
HIV prevention NGOs	98.3 (93.6-99.6)	99.1 (97.1-99.7)	NS	98.9 (97.3-99.5)
HTC centres in other NGOs	1.7 (0.4-6.4)	0.9 (0.3-2.9)	NS	1.1 (0.5-2.7)
Motivation for testing HIV (Denominator is who had ever tested for HIV)	N=121	N=321		N=442
Self	40.5 (32.1-49.5)	58.6 (53.1-63.9)	<0.05	53.6 (48.9-58.2)
Someone advised	59.5 (50.5-67.9)	41.4 (36.1-46.9)	<0.05	46.4 (41.8-51.1)
Who inspired testing for HIV (Denominator is who had ever tested for HIV and someone advised)	N=72	N=133		N=205
NGO worker	91.7 (82.6-96.2)	82.0 (74.4-87.6)	NS	85.4 (79.8-89.6)

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Friends	6.9 (2.9-15.7)	11.3 (6.9-17.9)	NS	9.8 (6.4-14.7)
Guru	1.4 (0.2-9.3)	6.8 (3.5-12.6)	NS	4.9 (2.6-8.9)
Received HIV testing result (Denominator is who had ever tested for HIV)	N=121 95.0 (89.4-97.8)	N=321 98.4 (96.3-99.4)	NS	N=442 97.5 (95.6-98.6)
Time since the most recent HIV test (Denominator is who had ever tested for HIV)	N=121	N=321		N=442
Within one year	46.3 (37.6-55.2)	45.5 (40.1-51.0)	NS	45.7 (41.1-50.4)
More than one year ago	53.7 (44.8-62.4)	54.5 (49.0-59.9)	NS	54.3 (49.6-58.9)
Received HIV testing and counselling in the last year and knew the result[ϕ]	28.9 (22.8-35.8)	38.1 (33.4-43.1)	NS	35.1 (31.3-39.1)

[ϕ]This indicator was computed by combining responses from two questions:

5. Have you been tested for HIV in the last 12 months?
6. If yes, I don't want to know the results, but did you receive the results of that test?

NS refers to not significant

Self-perception of risk of HIV and reasons for those perceptions (Table-56)

More sex worker than badhai hijra perceived themselves to be at high risk for HIV ($p<0.05$) of whom majority stated irregular use of condoms. On the other hand, more badhai hijra perceived themselves to be at little or no risk than sex worker hijra ($p<0.05$).

Table-56: Self-perception of risk and their reason

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Considered themselves to be at risk for HIV				
High risk	7.5 (4.5-12.3)	18.5 (14.9-22.8)	<0.05	14.9 (12.2-18.1)
Medium risk	9.6 (6.1-14.8)	17.8 (14.2-21.9)	NS	15.1 (12.4-18.3)
Little/no risk	75.4 (68.7-81.1)	59.5 (54.5-64.3)	<0.05	64.7 (60.7-68.6)
Not able to assess	7.5 (4.5-12.3)	4.2 (2.6-6.7)	NS	5.3 (3.7-7.4)
Reasons for perceiving themselves to be at high or medium risk (Denominator who thought they were at high or medium risk)*	N=32	N=139		N=171
Irregular use of condoms	56.3 (38.8-72.2)	71.2 (63.1-78.2)	NS	68.4 (61.0-75.0)
Risky profession	37.5 (22.6-55.3)	41.7 (33.7-50.2)	NS	40.9 (33.7-48.5)
Frequent anal sex	46.9 (30.4-64.0)	33.8 (26.4-42.1)	NS	36.3 (29.3-43.8)
Do not use condom	31.3 (17.6-49.2)	13.7 (8.9-20.5)	NS	17.0 (12.0-23.4)

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Reasons for assessing themselves to be at little or no risk (Denominator who perceived themselves to be at little or no risk)*	N=141	N=228		N=369
Irregular use of condoms	9.2 (5.4-15.3)	60.1 (53.6-66.3)	<0.05	40.7 (35.7-45.8)
Be neat and clean	35.5 (28.0-43.7)	39.0 (32.9-45.5)	NS	37.7 (32.8-42.8)
Have less sex	57.4 (49.1-65.4)	21.9 (17.0-27.8)	<0.05	35.5 (30.8-40.5)
Wash genitals after sex	24.1 (17.7-31.9)	39.9 (33.7-46.4)	<0.05	33.9 (29.2-38.9)
Always used condom	20.6 (14.7-28.1)	27.6 (22.2-33.8)	NS	24.9 (20.8-29.6)
Have sex with trusted partner	53.9 (45.6-62.0)	5.3 (3.0-9.1)	<0.05	23.8 (19.8-28.5)
Have sex with clean/Healthy sex partners	6.4 (3.3-11.8)	28.9 (23.4-35.2)	<0.05	20.3 (16.5-24.8)
Be alert	2.1 (0.7-6.4)	2.2 (0.9-5.2)	NS	2.2 (1.1-4.3)

*Multiple responses
NS refers to not significant

Measures taken to avoid STIs and HIV (Table-57)

Significantly more badhai hijra compared to sex worker hijra mentioned that they did nothing to avoid STIs and HIV ($p<0.05$ for both). Compared to badhai hijra, significantly more sex worker hijra used condoms sometimes to avoid both STI and HIV ($p<0.05$).

Table-57: Measures taken to avoid STIs and HIV

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Steps taken to avoid STIs*				
Sometimes used condoms	16.6 (11.9-22.6)	68.4 (63.6-72.9)	<0.05	51.4 (47.3-55.5)
Wash genital organs with water/Soap/Dettol/Urine	25.1 (19.4-31.9)	35.2 (30.6-40.2)	NS	31.9 (28.2-35.9)
Have sex with clean/Healthy partners	7.0 (4.1-11.6)	32.1 (27.6-37.0)	<0.05	23.9 (20.5-27.5)
Always used condoms	17.6 (12.8-23.8)	17.8 (14.2-21.9)	NS	17.7 (14.8-21.1)
Nothing	34.8 (28.3-41.9)	5.2 (3.4-8.0)	<0.05	14.9 (12.2-18.1)
Have sex with trusted partner	11.8 (7.9-17.2)	0	-	3.9 (2.6-5.8)
Steps to taken to avoid HIV*				
Sometimes used condoms	17.1 (12.4-23.2)	69.7 (64.9-74.1)	<0.05	52.5 (48.3-56.5)
Wash genital organs with water/ Soap/Dettol/Urine	25.1 (19.4-31.9)	33.9 (29.4-38.8)	NS	31.1 (27.4-35.0)
Have sex with clean/healthy partners	10.8 (7.0-16.1)	35.2 (30.6-40.2)	<0.05	27.2 (23.7-31.1)
Always used condoms	18.2 (13.3-24.4)	17.8 (14.2-21.9)	NS	17.9 (15.0-21.3)
Do nothing	29.9 (23.8-36.9)	5.2 (3.4-8.0)	<0.05	13.3 (10.8-16.4)
Sex with trusted partner	12.8 (8.7-18.5)	0	-	4.2 (2.8-6.2)

*Multiple responses
NS refers to not significant

Violence against hijra (Table-58)

Overall approximately one third of hijra were beaten in the last year and the majority said that they were beaten by parik/lover followed by Guru. Significantly more sex worker hijra were raped last year compared to badhai hijra ($p<0.05$). The most common perpetrator of rape of sex worker hijra was hoodlums followed by local people and men in uniform. Only nine hijra reported that they had been jailed in the last year and most were jailed for conflict with Guru/local people/police.

Table-58: Violence

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Was beaten in the last year	28.3 (22.3-35.2)	33.7 (29.1-38.6)	NS	31.9 (28.2-35.9)
Beating was perpetuated by* (Denominator is who was beaten in the last year)	N=53	N=129		N=182
Parik/Lover	64.2 (50.4-75.9)	35.7 (27.8-44.4)	<0.05	44.0 (36.9-51.3)
Guru	39.6 (27.4-53.4)	41.9 (33.6-50.6)	NS	41.2 (34.2-48.6)
Mastans (Hoodlums)	5.7 (1.8-16.3)	34.9 (27.1-43.6)	<0.05	26.4 (20.4-33.3)
Men in uniform	0	23.3 (16.7-31.4)	-	16.5 (11.7-22.7)
Hijra	18.9 (10.4-31.8)	13.2 (8.3-20.3)	NS	14.8 (10.3-20.8)
Local people	5.7 (1.8-16.3)	10.1 (5.9-16.7)	NS	8.8 (5.4-13.9)
Relatives	1.9 (0.3-12.4)	1.6 (0.4-6.1)	NS	1.6 (0.5-5.0)
Was raped in the last year	1.6 (0.5-4.9)	14.1 (11.0-18.0)	<0.05	10.0 (7.8-12.8)
Was beaten or raped in the last year	29.4 (23.3-36.4)	38.9 (34.1-43.9)	NS	35.8 (31.9-39.8)
Rape perpetuated by* (Denominator is who was raped in the last year)	N=3	N=54		N=57
Mastans (Hoodlums)	33.3 (4.0-85.6)	79.6 (66.4-88.6)	NS	77.2 (64.1-86.5)
Local people	100.0	24.1 (14.3-37.6)	-	28.1 (17.7-41.5)
Men in uniform	0	16.7 (8.7-29.5)	-	15.8 (8.3-28.1)
New clients	0	1.9 (0.2-12.7)	-	1.8 (0.2-12.1)
Students	0	1.9 (0.2-12.7)	-	1.8 (0.2-12.1)
Was jailed in the last year	1.6 (0.5-4.9)	1.6 (0.7-3.5)	NS	1.6 (0.8-3.0)

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Reasons for being sent to jail in the last year (Denominator is who was jailed in the last year)	N=3	N=6		N=9
Conflict with Guru/Local People/Police	100.0	50.0 (12.0-88.0)	-	66.7 (26.2-91.9)
Sex work in hotel/Spot	0	33.3 (5.7-80.6)	-	22.2 (3.9-67.0)
Stealing	0	16.7 (1.4-74.5)	-	11.1 (0.9-62.6)

*Multiple responses
When police may arrest without any warrant for any suspicious behaviour
NS refers to not significant

Mobility (Table-59)

Almost half of the hijra travelled to another city in the last year. Among the sex worker hijra who travelled to another city 44.8% sold sex of whom 29.1% used a condom during the last sex. Buying sex while in another city was relatively uncommon. Both groups of hijra (overall 31.4%) had non-transactional sex while travelling and 19.8% used condom during last sex in the last year while in another city.

The total number of hijra who travelled abroad in the last year was 58 and which was more common in badhai hijra compared to sex-worker hijra ($p<0.05$). Of the sex worker hijra who travelled abroad in the last year (N=29), 48.3% sold sex while in India and of these 57.1% used a condom in the last sex act (while selling sex). Although buying sex while abroad was reported only by three sex worker hijra (10.3%), every one used condom while buying sex last time. Only five hijra had non-transactional sex while abroad in the last year.

Table-59: Mobility

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Visited another city in the last year	43.9 (36.9-51.1)	50.1 (45.1-55.1)	NS	48.1 (44.0-52.2)
Sold sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=82 0	N=192 44.8 (37.9-51.9)	-	N=274 31.4 (26.1-37.2)
Used condom during last sex while selling sex in another city in the last year (Denominator is who visited another city and sold sex in the last year)	-	N=86 29.1 (20.3-39.7)	-	-
Bought sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=82 1.2 (0.2-8.2)	N=192 0.5 (0.1-3.6)	NS	N=274 0.7 (0.2-2.9)

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Used condom in the last sex while buying sex in another city in the last year (Denominator is who visited another city and bought sex in the last year)	N=1 0	N=1 0	-	N=2 0
Had non-transactional sex while visiting another city in the last year (Denominator is who visited another city in the last year)	N=82 17.1 (10.3-26.9)	N=192 37.5 (30.9-44.6)	<0.05	N=274 31.4 (26.1-37.2)
Used condom during the last non-transactional intercourse while visiting another city in the last year (Denominator is who visited another city and had non-transactional sex in the last year)	N=14 14.3 (3.5-43.4)	N=72 20.8 (12.8-32.0)	NS	N=86 19.8 (12.5-29.7)
Travelled abroad in the last year	15.5 (11.0-21.4)	7.6 (5.3-10.7)	<0.05	10.2 (7.9-12.9)
Sold sex while travelling abroad in the last year (Denominator is who travelled abroad in the last year)	N=29 0	N=29 48.3 (30.6-66.4)	-	N=58 24.1 (14.6-37.2)
Used condom in the last sex act during selling sex while abroad in the last year (Denominator is who travelled abroad and sold sex in the last year)	-	N=14 57.1 (28.4-81.7)	-	-
Bought sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=29 0	N=29 10.3 (3.3-28.3)	-	N=58 5.2 (1.6-15.3)
Used condom while buying sex when abroad last time in the last year (Denominator is who travelled abroad and bought sex in the last year)	-	Only 3 Persons	-	-
Had non-transactional sex while abroad in the last year (Denominator is who travelled abroad in the last year)	N=29 3.4 (0.5-21.8)	N=29 13.8 (5.1-32.2)	NS	N=58 8.6 (3.5-19.5)
Used condom during last non-transactional intercourse while abroad in the last year (Denominator is who travelled abroad and had non-transactional sex in the last year)	N=1 0	N=4 50.0 (4.3-95.7)	-	N=5 40.0 (3.8-91.9)

NS refers to not significant

Exposure to HIV/AIDS prevention programmes (Table-60)

Most hijra interviewed (91.4%) said that they had participated in different activities of HIV/AIDS prevention programmes at some time in their lives. More sex worker than badhai hijra participated in HIV/AIDS prevention programmes in the last year ($p<0.05$). The most common service received in the last month by the hijra who participated in the prevention programme was receiving condoms and lubricants. Among those who participated in prevention programmes in the last year, 91.6% said that they had learnt about HIV/AIDS/STI/safe sex and correct use of condoms through the programmes.

Table-60: Exposure to HIV/AIDS prevention programme

Indicators	Badhai	Sex worker	Comparison p-value	Total
	N=187, unless otherwise stated	N=383, unless otherwise stated		N=570, unless otherwise stated
Ever participated in HIV/AIDS prevention programmes, % (95% CI)	84.5 (78.6-89.0)	94.8 (92.0-96.6)	<0.05	91.4 (88.8-93.4)
Time (in months) since last participation in HIV/AIDS prevention programmes (Denominator is who had ever participated in any HIV/AIDS prevention programmes)	N=157	N=363		N=520
Mean (months) (95% CI)	16.7 (12.9-20.6)	8.1 (6.7-9.6)	<0.05	10.7 (9.1-12.3)
Median (IQR)	6.0 (1.0-24.0)	1.0 (0.0-12.0)		2.0 (0.0-14.0)
Duration (in months) of involvement with HIV/AIDS prevention programmes (Denominator is who had ever participated in any HIV/AIDS prevention programmes)	N=158	N=363		N=521
Mean (months) (95% CI)	79.9 (72.6-87.2)	76.3 (71.7-80.9)	NS	77.4 (73.5-81.3)
Median (IQR)	72.0 (48.0-120)	60.0 (48.0-96.0)		72.0 (48.0-108.0)
Participated in any HIV/AIDS prevention programmes in the last year, % (95% CI)	48.7 (41.6-55.8)	66.1 (61.2-70.6)	<0.05	60.4 (56.3-64.3)
Participated in any HIV/AIDS prevention programmes in the last three months, 95% CI	27.8 (21.8-34.7)	55.9 (50.8-60.8)	<0.05	46.7 (42.6-50.8)
Participated in any HIV/AIDS prevention programmes in the last month, 95% CI	20.9 (15.6-27.3)	47.0 (42.0-52.0)	<0.05	38.4 (34.5-42.5)
Number of times participated in the prevention programmes in the last month (Denominator is who participated in HIV/AIDS prevention programmes in the last month)	N=39	N=180		N=219
Mean (95% CI)	1.1 (0.9-1.2)	1.6 (1.4-1.7)	<0.05	1.5 (1.4-1.6)
Median (IQR)	1.0 (1.0-1.0)	1.0 (1.0-2.0)		1.0 (1.0-2.0)
Reported being involved with different types of prevention programmes in the last month* (Denominator is who had ever	N=39	N=180		N=219

Indicators	Badhai N=187, unless otherwise stated	Sex worker N=383, unless otherwise stated	Comparison p-value	Total N=570, unless otherwise stated
participated in any prevention programme in the last month), % (95% CI)				
Received lubricants	97.4 (83.7-99.6)	98.9 (95.6-99.7)	NS	98.6 (95.8-99.6)
Received condoms	92.3 (78.5-97.5)	100.0	-	98.6 (95.8-99.6)
Received HTC	79.5 (63.9-89.5)	93.3 (88.6-96.2)	NS	90.9 (86.2-94.1)
Attended educational programmes	61.5 (45.5-75.4)	65.0 (57.7-71.7)	NS	64.4 (57.8-70.5)
Received treatment for general health problems	61.5 (45.5-75.4)	60.6 (53.2-67.5)	NS	60.7 (54.1-67.0)
Attended DIC for rest and recreation	74.4 (58.4-85.7)	53.3 (46.0-60.6)	NS	57.1 (50.4-63.5)
Received treatment for STIs	28.2 (16.3-44.2)	57.2 (49.8-64.3)	<0.05	52.1 (45.4-58.6)
Reported being involved with different types of prevention programmes in the last year* (Denominator is who had ever participated in any prevention programme in the last year), % (95% CI)	N=97	N=253		N=344
Received lubricants	94.5 (87.4-97.7)	99.2 (96.9-99.8)	NS	98.0 (95.8-99.0)
Received condoms	89.0 (80.7-94.0)	100.0	NS	97.1 (94.7-98.4)
Received HTC	79.1 (69.5-86.3)	90.1 (85.8-93.2)	-	87.2 (83.2-90.4)
Attended educational programmes	54.9 (44.6-64.9)	65.2 (59.1-70.9)	NS	62.5 (57.2-67.5)
Received treatment for general health problems	53.8 (43.5-63.8)	56.1 (49.9-62.1)	NS	55.5 (50.2-60.7)
Attended DIC for rest and recreation	51.6 (41.4-61.8)	50.6 (44.4-56.7)	NS	50.9 (45.6-56.2)
Received treatment for STIs	25.3 (17.4-35.2)	51.0 (44.8-57.1)	<0.05	44.2 (39.0-49.5)
Received a combination of HIV/AIDS prevention programmes in the last three months[§], % (95% CI)	41.5 (36.7-46.5)	16.6 (11.9-22.7)	<0.05	33.3 (29.6-37.3)
Reached with HIV/AIDS prevention programmes in the last year[ϕ]	41.7 (34.8-48.9)	65.8 (60.9-70.4)	<0.05	57.9 (53.8-61.9)
Benefited from HIV/AIDS prevention programmes in the last year (Denominator is who had participated in any HIV/AIDS prevention programmes in the last year)*, % (95% CI)	N=91	N=253		N=344
Learnt about HIV/AIDS/STI/Safe sex and correct use of condom	81.3 (71.9-88.1)	95.3 (91.8-97.3)	<0.05	91.6 (88.1-94.1)
Received useful information but did not change behaviour	36.3 (27.0-46.6)	45.5 (39.4-51.7)	NS	43.0 (37.9-48.3)
Helped in changing risk behaviour	36.3 (27.0-46.6)	36.0 (30.3-42.1)	NS	36.0 (31.1-41.3)
Information was not relevant to their needs	6.6 (3.0-14.0)	9.5 (6.4-13.8)	NS	8.7 (6.2-12.2)
Information was hard to understand	1.1 (0.2-7.5)	0.4 (0.1-2.8)	NS	0.6 (0.1-2.3)

[§]Who received at least two services in the last three months: condom/lubricant/counselling on condom use and safe sex/STI services from NGOs

ΦThis indicator was computed by combining the responses from two questions:

1. Do you know where you can go if you wish to receive an HIV test?
2. In the last twelve months, have you been given condoms? (e.g. through an outreach service, drop-in centre or sexual health clinic)

*Multiple responses
IQR refers to inter quartile range
NS refers to not significant

Places for sex acts,venues/usual means for meeting friends and sex partners(Table-61)

Approximately, 93.9% of hijra said that they met their friends at home which was also a common venue for hijra sex workers for having sex acts with either new or regular clients in the last week. For contacting clients for sex, cell phone and at home were the most common means or place reported by hijra who sold sex. The internet was used by a small minority (3.7%).

Table-61: Meeting place of friends, sex partners and place of sex act

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Place of sex acts with new clients in the last week* (Denominator is who had new clients in the last week)*		N=328		
Home	-	72.6 (67.5-77.1)	-	-
Road side/Lake side/Brick field		47.0 (41.6-52.4)		
Park		32.3 (27.5-37.6)		
Bus stand		21.3 (17.2-26.1)		
Working place		14.6 (11.2-18.9)		
Car/Launch/Boat		11.6 (8.5-15.5)		
Roof top		7.3 (4.9-10.7)		
Hotel		6.7 (4.4-10.0)		
Market/Bazar		4.9 (3.0-7.8)		
Cinema Hall		0.6 (0.2-2.4)		
Public toilet		0.6 (0.2-2.4)		
Place of sex acts with regular clients in the last week* (Denominator is who had regular clients in the last week)*		N=299		
Home	-	75.6 (70.4-80.1)	-	-
Roadside/Over-bridge/Brickfield/Lake and river side		38.5 (33.1-44.1)		
Park		28.8 (23.9-34.2)		
Bus stand		18.1 (14.1-22.9)		
Working place		13.4 (9.9-17.8)		
Car		9.4 (6.5-13.3)		
Roof top		8.0 (5.4-11.7)		
Hotel		6.0 (3.8-9.4)		

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Market/Bazaar		3.7 (2.0-6.5)		
Cinema Hall		1.0 (0.3-3.1)		
Public toilet		0.7 (0.2-2.7)		
Usual meeting place with hijra friends*				
Home	96.3 (92.3-98.2)	92.7 (89.6-94.9)	NS	93.9 (91.6-95.6)
Guru's house	96.8 (93.0-98.6)	92.4 (89.3-94.7)	NS	93.9 (91.6-95.6)
On the street	52.4 (45.2-59.5)	45.4 (40.5-50.5)	NS	47.7 (43.6-51.8)
Working place	20.3 (15.1-26.7)	44.6 (39.7-49.7)	<0.05	36.7 (32.8-40.7)
Cruising spot	3.7 (1.8-7.7)	48.3 (43.3-53.3)	<0.05	33.7 (29.9-37.7)
Club/Party	12.3 (8.3-17.8)	24.3 (20.2-28.8)	<0.05	20.4 (17.2-23.9)
Tea stall/Bazaar/Market	20.3 (15.1-26.7)	25.8 (21.7-30.5)	NS	24.0 (20.7-27.7)
Hotel/Boarding	0	0.3 (0.0-1.8)	NS	0.2 (0.0-1.2)
Venues/usual means for contacting male sex partners* (Denominator is who ever sold sex)				
Cell phone	-	97.9 (95.9-99.0)	-	-
Home		74.4 (69.8-78.6)		
On the street		51.4 (46.4-56.4)		
Cruising spot		47.8 (42.8-52.8)		
Working place		29.0 (24.6-33.7))		
Tea stall/Bazaar/Market		18.0 (14.4-22.2)		
Friends		9.4 (6.8-12.8)		
Club/Party		4.4 (2.8-7.0)		
Internet (Social media, Email)		3.7 (2.2-6.1)		
Broker		1.3 (0.5-3.1)		
Hotel/Boarding		1.0 (0.4-2.8)		

*Multiple responses
NS refers to not significant

Using illicit drugs (Table-62)

Taking illicit drugs (except alcohol and cannabis) in the last year was reported by 15.1% hijra. Among those who had taken illicit drugs in the last year, methamphetamine was the most common (66.3%) followed by codeine containing cough syrup (52.3%). No one reported injecting drugs in the last year. When asked whether their partners injected drugs, a greater percentage of sex worker hijra reported that clients rather than regular partners/parik injected drugs ($p<0.05$).

Table-62: Using illicit drugs

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Took any illicit drugs (except alcohol and cannabis) in the last 12 months	11.8 (7.9-17.2)	16.7 (13.3-20.8)	NS	15.1 (12.4-18.3)
Type of drugs taken in the last year* (Denominator is who took illicit drugs in the last year)	N=22	N=64		N=86
Methamphetamine (Yaba)	77.3 (55.1-90.4)	62.5 (49.9-73.6)	NS	66.3 (55.5-75.6)
Codeine containing cough syrup (Phensidyl)	40.9 (22.5-62.2)	56.3 (43.7-68.0)	NS	52.3 (41.6-62.8)
Heroin	4.5 (0.6-26.9)	0	-	1.2 (0.2-8.1)
Jhakki[§]	0	0.7 (0.1-5.1)	-	0.5 (0.1-3.7)
Injected drugs in the last year	0	0	-	0
Had parik who injected drugs	N=171 0	N=340 0.9 (0.3-2.7)	-	N=511 0.6 (0.2-1.8)
Knew that their new/regular clients injected drugs	-	6.5 (4.4-9.5)	-	-

*Multiple responses
[§]This is a mixture of soft drinks with sleeping pills
NS refers to not significant

History of selling blood

No one sold blood for money in the last one year.

History of taking female hormones (Table-63)

Three in every four hijra said they had taken oestrogen and progesterone containing hormone tablets and injections some time in their lives and in the last three months 34.7% had done so. Their purpose for taking these hormones were mostly for the enhancement of breast size followed by increasing smoothness of the skin.

Table-63: History of taking female hormone

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Ever took female hormones	81.3 (75.0-86.3)	71.0 (66.3-75.4)	NS	74.4 (70.6-77.8)
Took female hormones in the last 3 months (Denominator is who ever taken female hormone)	N=152 34.9 (27.7-42.8)	N=272 34.6 (29.1-40.4)	NS	N=424 34.7 (30.3-39.3)
Reasons for taking female hormones* (Denominator is who had taken female hormones in the last three months)	N=53	N=94		N=147
Enhancing breast size	92.5 (81.4-97.2)	94.7 (87.7-97.8)	NS	93.9 (88.6-96.8)
Increasing smoothness of skin	56.6 (42.9-69.3)	38.3 (29.0-48.6)	NS	44.9 (37.0-53.1)
Suppressing growth of facial hair	39.6 (27.3-53.4)	23.4 (15.9-33.1)	NS	29.3 (22.4-37.2)
Improving shape of thigh/hip	17.0 (9.0-29.7)	12.8 (7.3-21.3)	NS	14.3 (9.5-21.0)

*Multiple responses
NS refers to not significant

Profile of clients as identified by hijra (Table-64)

The majority of the clients of sex worker hijra were service holders (33.2%) whom they characterized as belonging largely to the general population (68.8%). The most common characterisation of the last casual partner by sex worker hijra was also as men who belonged to the general population. Most of their parik (for both groups of hijra) wereservice holders and businessmen.

Table-64: Occupational profile/characterization of different sex partners

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Commonly reported occupation of clients (both new and regular clients)				
Service holder	-	33.2 (28.6-38.1)	-	-
Business		19.6 (15.9-23.9)		
Motor driver		18.5 (14.9-22.8)		
Day labourer		17.5 (14.0-21.6)		
Rickshaw puller		7.6 (5.3-10.7)		
Student		2.9 (1.6-5.1)		
Men in uniform		0.8 (0.3-2.4)		

Indicators	Badhai N=187, unless otherwise stated % (95% CI)	Sex worker N=383, unless otherwise stated % (95% CI)	Comparison p-value	Total N=570, unless otherwise stated % (95% CI)
Characterisation of the last new/regular client in the last week (Denominator is who had new or regular clients in the last week)		N=353		
General person	-	68.8 (63.8-73.5)	-	-
Female sex worker		17.6 (13.9-21.9)		
MSM		11.0 (8.2-14.8)		
Cannot remember		2.5 (1.3-4.8)		
Characterisation of last casual male sex partner in the last month (Denominator who had casual sex in the last month)	N=15	N=99		N=114
General Person	80.0 (52.5-93.5)	72.7 (63.0-80.7)	NS	73.7 (64.7-81.0)
Client of female sex worker	6.7 (0.9-35.9)	14.1 (8.5-22.6)	NS	13.2 (8.0-20.8)
Cannot remember	6.7 (0.9-35.9)	7.1 (3.4-14.2)	NS	7.0 (3.5-13.5)
MSM	6.7 (0.9-35.9)	6.1 (2.7-13.0)	NS	6.1 (2.9-12.4)
Main occupation of parik (Denominator who had parik)	N=130	N=218		N=348
Service holder	28.5 (21.3-36.8)	34.9 (28.8-41.5)	NS	32.5 (27.7-37.6)
Business	31.5 (24.1-40.1)	26.6 (21.1-32.9)	NS	28.4 (23.9-33.4)
Motor driver	11.5 (7.1-18.3)	12.4 (8.6-17.5)	NS	12.1 (9.0-16.0)
Unemployed	12.3 (7.7-19.2)	8.3 (5.3-12.7)	NS	9.8 (7.1-13.4)
Student	8.5 (4.7-14.7)	10.1 (6.7-14.9)	NS	9.5 (6.8-13.1)
Day labour	3.1 (1.2-7.9)	3.7 (1.8-7.2)	NS	3.4 (2.0-6.0)
Rickshaw puller	3.1 (1.2-7.9)	2.8 (1.2-6.0)	NS	2.9 (1.5-5.3)
Men in uniform	0.8 (0.1-5.3)	0.9 (0.2-3.6)	NS	0.9 (0.3-2.7)
Singer	0	0.5 (0.1-3.2)	-	0.3 (0.0-2.0)
Electric Mechanic	0.8 (0.1-5.3)	0	-	0.3 (0.0-2.0)

NS refers to not significant

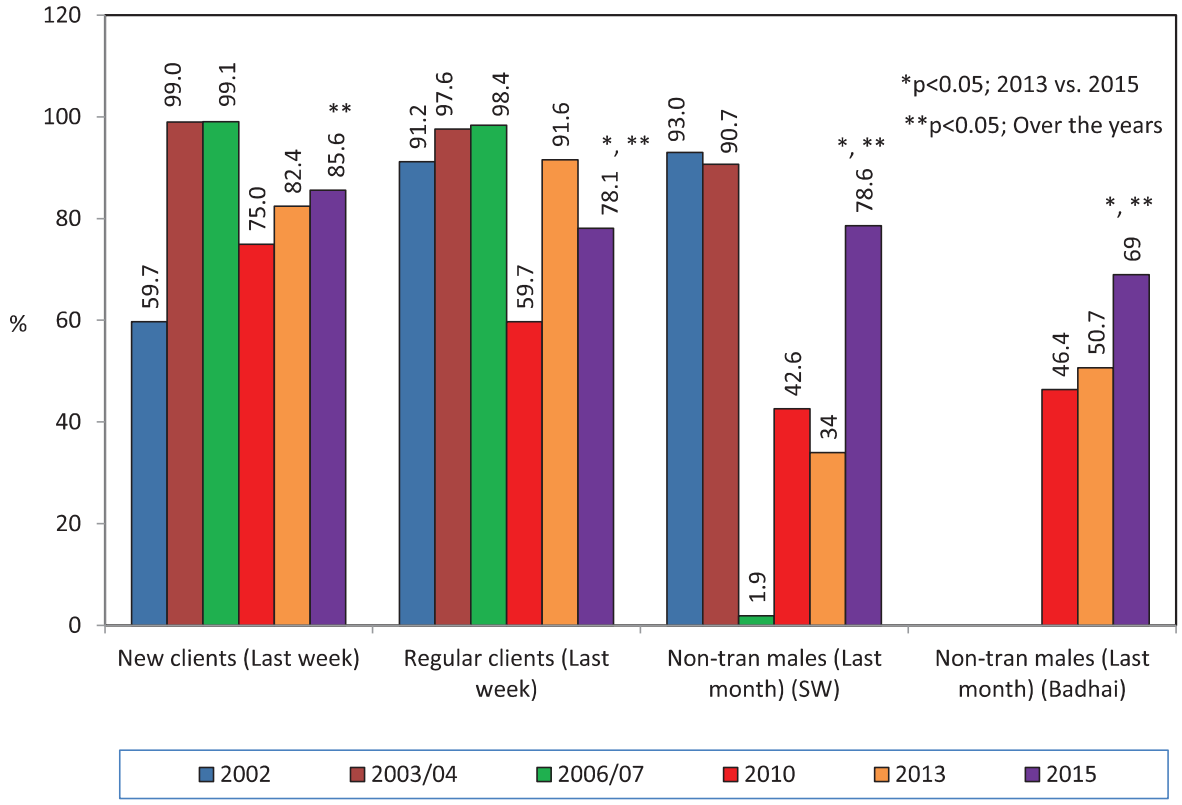
B. Changes in some key risk behaviours over the years of surveillance

Changes in some selected risk behaviours have been compared over the years of BSS from 2002-2015 for sex worker hijra in Dhaka. For badhai hijra, comparisons were done from 2010 only as this group was not sampled in BSS before. Analysis to assess changes between the last and present BSS conducted in 2013 and 2015 respectively was also carried out.

Male sex partners in the last week and month

Figure-48 shows the percentages of hijra reporting sex with different types of male sex partners in Dhaka. Percentages of hijra reporting sex with new clients increased significantly over time while this declined with regular clients over the years ($p<0.05$ for both). Significantly fewer hijra sex workers reported sex with non-transactional partners over the years however when comparing 2013 and 2015, a significant increase was observed ($p<0.05$ for both).

Figure-48: Had sex in the last week/month



Condom use in the last week and month

Condom use both last time and consistently significantly increased over time with all types of sex partners (Figure-49) ($p<0.05$ for all). However, no changes were observed between 2013 and 2015 with new or regular clients. Condom use with non-transactional sex partners significantly declined among both groups of hijra in 2015 compared to 2013 ($p<0.05$). Both sex worker and badhai hijra were also asked whether a condom was used while having anal sex with any male sex partner (irrespective of partner type) last time in

the last one year. The data showed that 50.7% of sex worker hijra and 21.4% of badhai hijra used condom in the last anal sex act with any male partner in the last one year in 2015 (Figure-50). The data also showed that condom use significantly increased over time from 2010 to 2015 in sex worker hijra but declined in badhai hijra ($p<0.05$).

Figure-49: Condom use in the last sex and last week/month

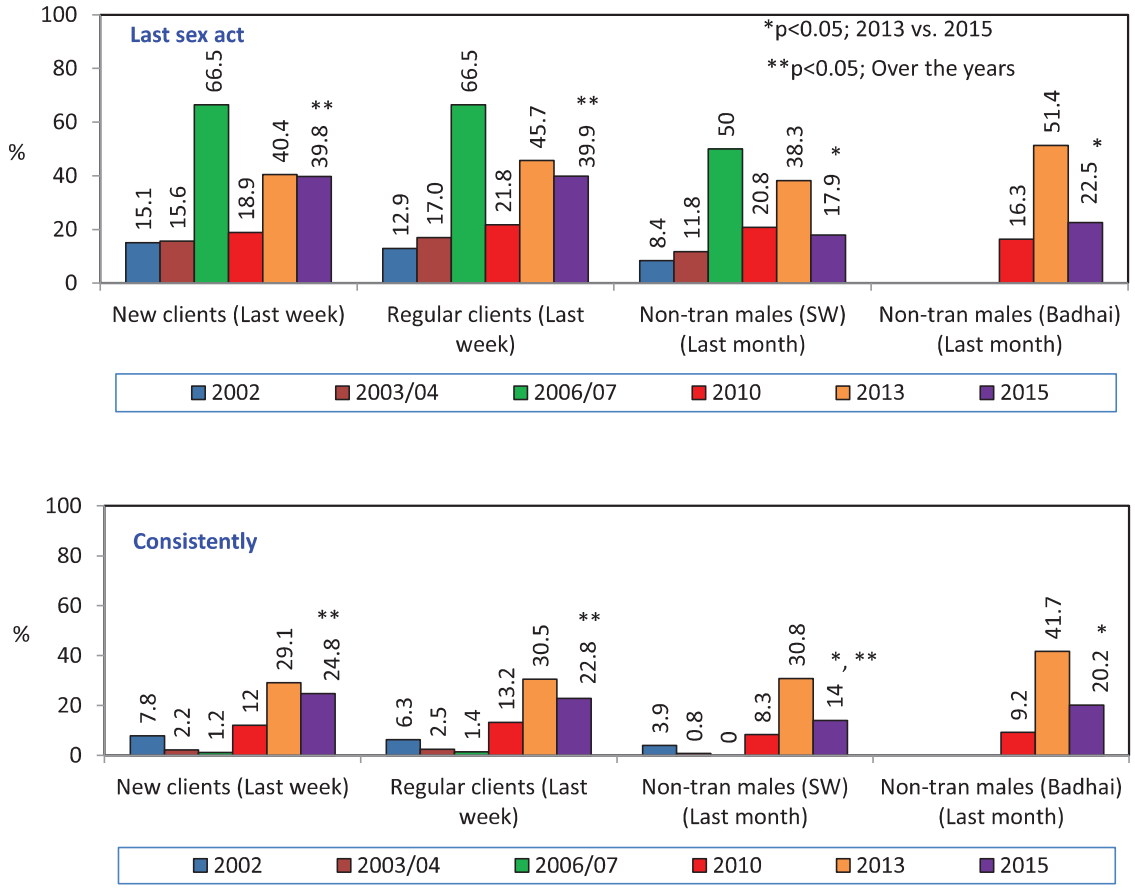
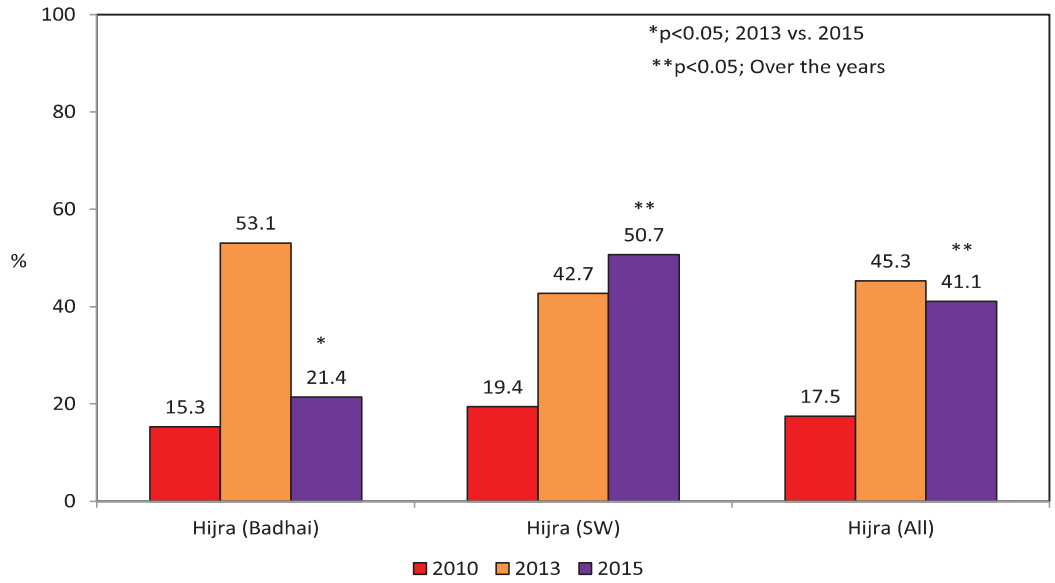


Figure-50: Condom use in the last anal sex act with a male sex partner‡

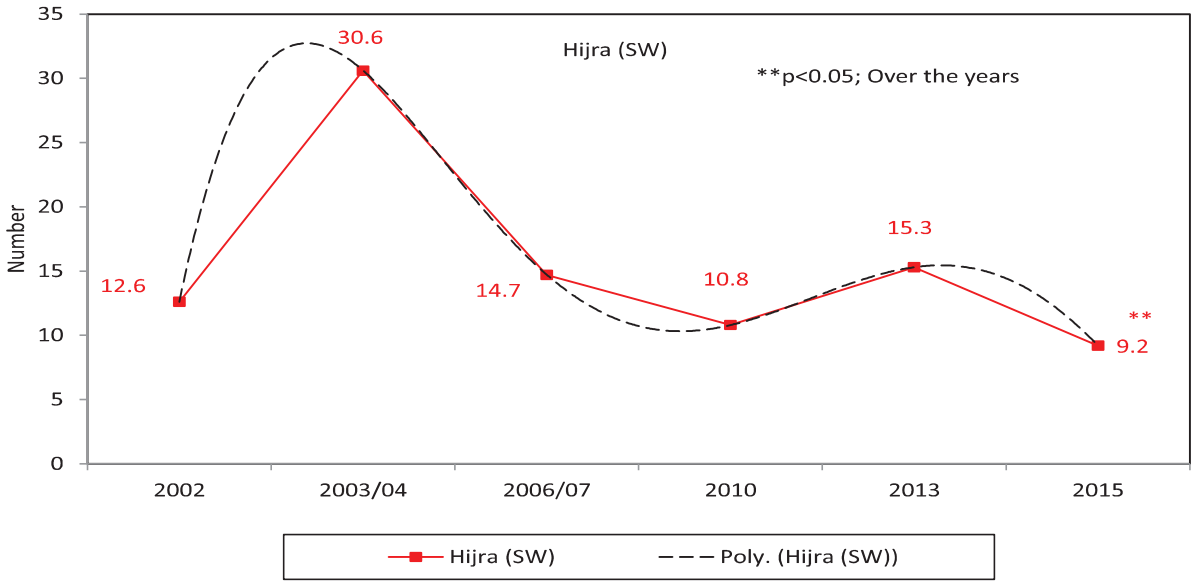


‡For Hijra in the last one year
Note: Information before 2010 not available

Number of clients in the last week (among hijra Sex Workers)

The data over several years show that the mean number of clients of hijra varied. A polynomial trend line [23] denoted by the dashed line in Figure-51 showed that the mean number of male clients increased in 2003/04 and then showed a declining trend ($p<0.05$). However, no changes were observed in 2015 compared to 2013.

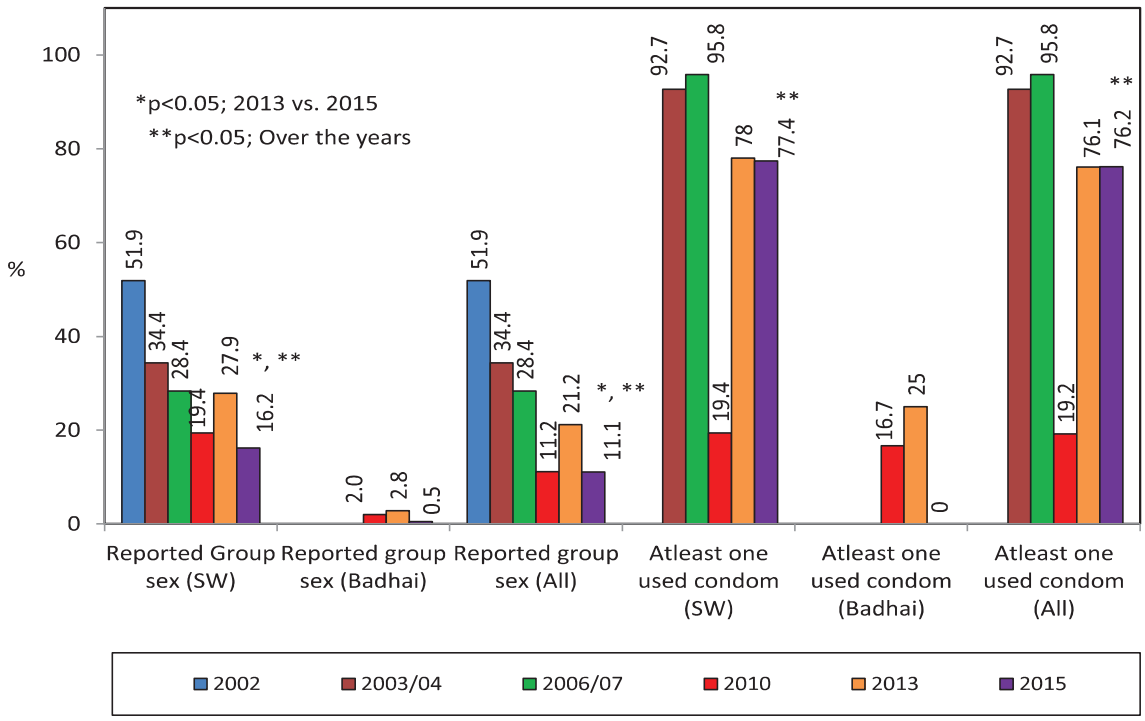
Figure-51: Mean number of male clients (new and regular) in the last week



Group sex and condom use

Over the years, significantly fewer hijra reported group sex and at the same time condom use by at least one partner during last group sex also declined significantly (Figure-52) (p<0.05 for both).

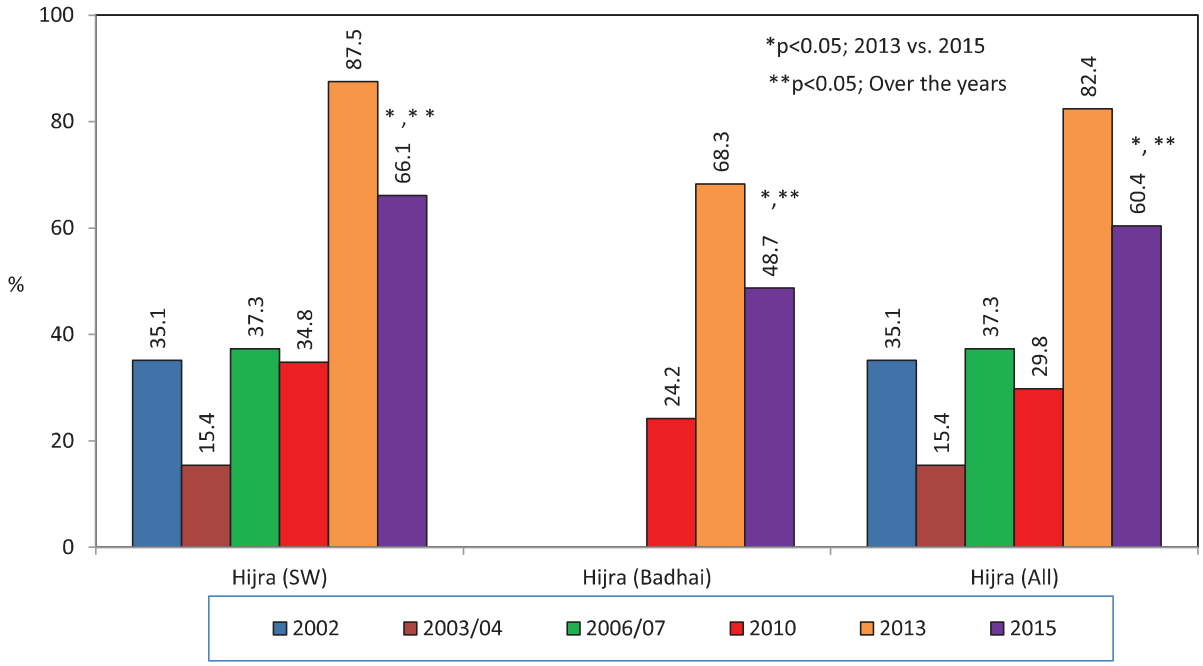
Figure-52: Group sex and condom use during group sex in the last month



Exposure to HIV/AIDS prevention programmes and HIV testing

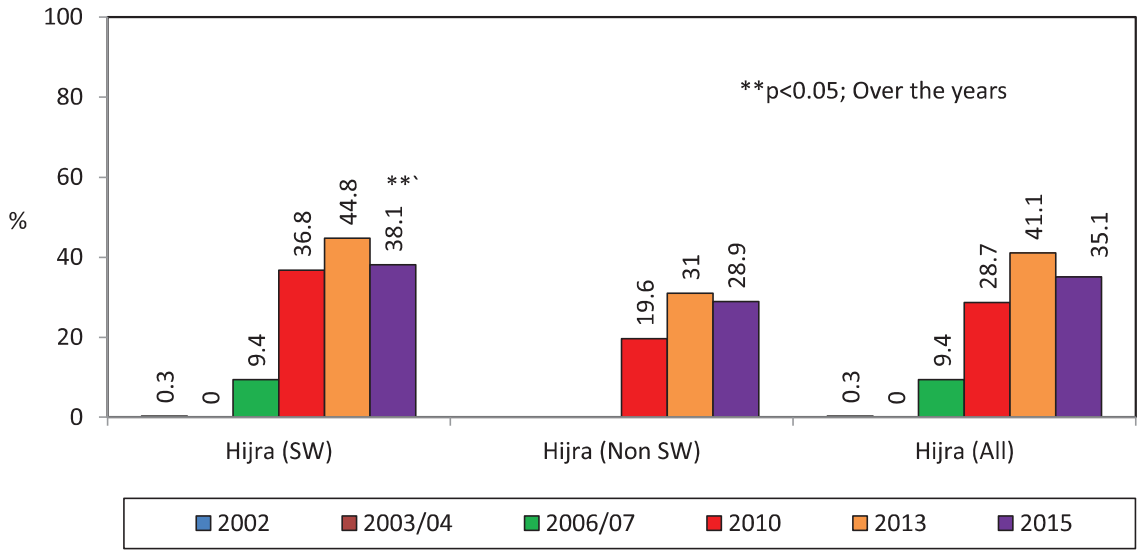
Participation in HIV/AIDS prevention programmes showed an increasing trend over time however, this significantly declined in 2015 compared to 2013 (Figure-53) (p<0.05 for all).

Figure-53: Participated in HIV/AIDS prevention programmes in the last year



Percentages of hijra reporting being tested for HIV and knowing their test result increased significantly over time for only sex worker hijra (p<0.05) but no changes were observed between 2013 and 2015 (Figure-54).

Figure-54: Tested for HIV and knew the result in the last year

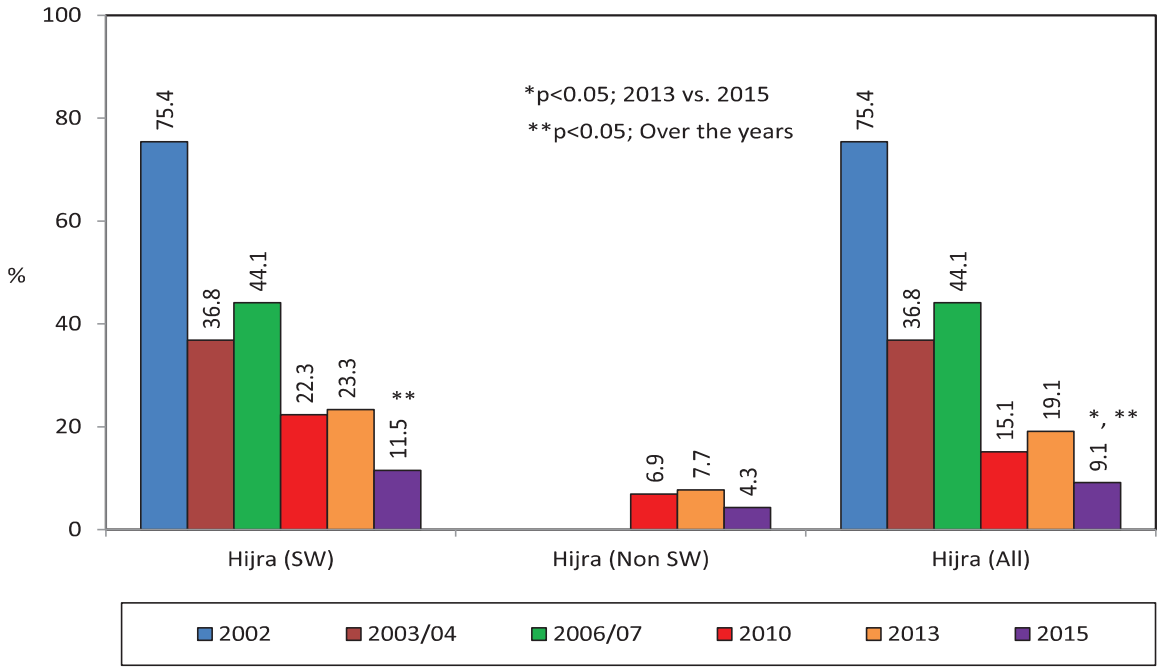


‡ Who replied "yes" to both questions:
1. Have you been tested for HIV in the last 12 months?
2. If yes, I don't want to know the results, but did you receive the results of that test?

Self-reported STIs

The percentages of sex worker hijra reporting at least one STI symptom in the last year declined significantly over time (Figure-55) ($p<0.05$).

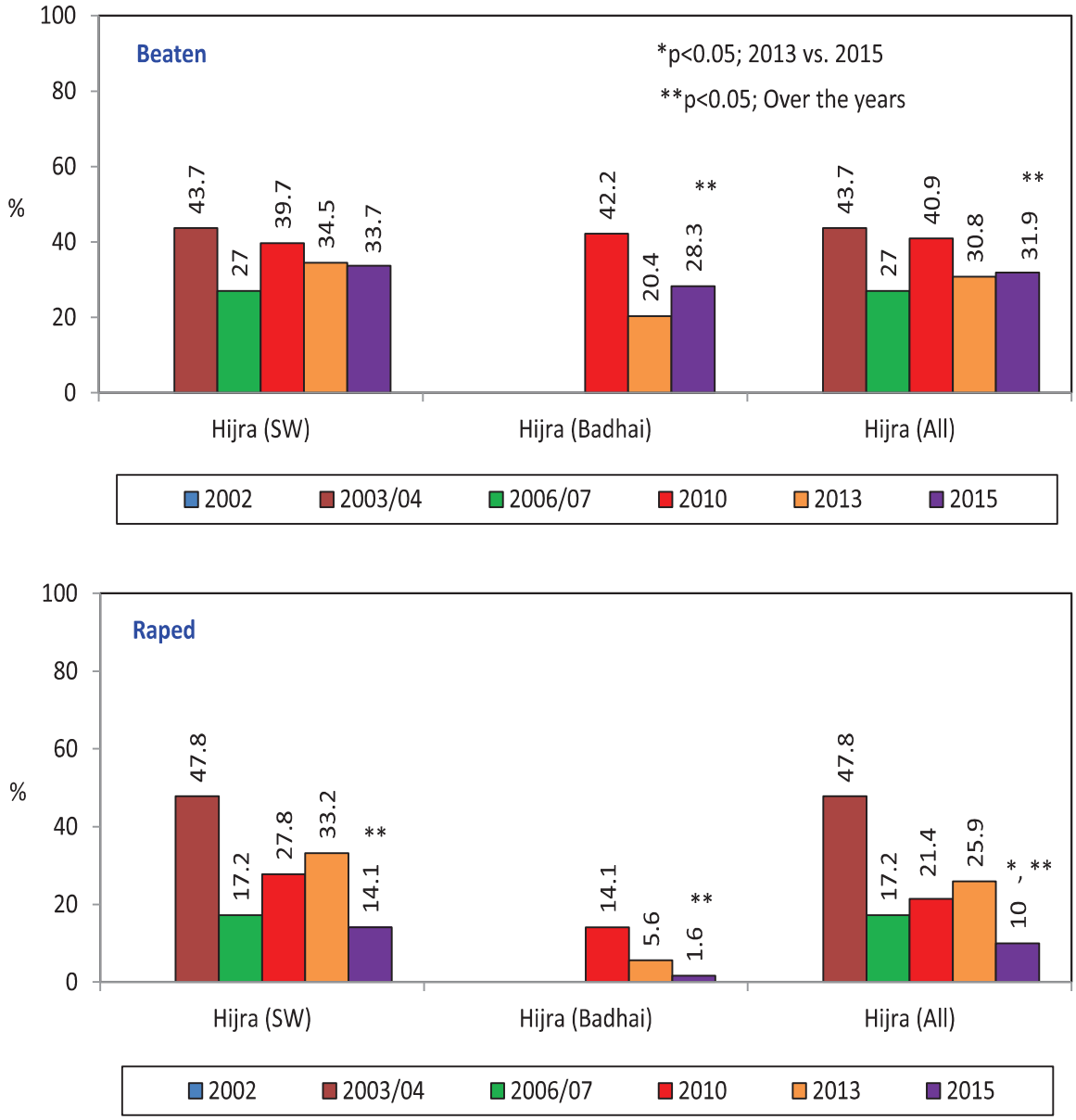
Figure-55: Complained at least one STI symptom in the last year



Violence

Percentages of hijra reporting being beaten or raped in the last year declined significantly (Figure-56) ($p<0.05$ for both).

Figure-56: Beaten and raped in the last one year



SUMMARY OF FINDINGS AND DISCUSSION

Overall, the data from the present surveillance of MSM, MSW and hijra from Dhaka and Hili showed that the prevalence of HIV continues to be low and that of active syphilis has either remained stable at low levels or declined as in the case of MSW and hijra. Along with these low infection levels, in most cases condom use showed a rising trend among MSM, MSW and hijra with different types of sex partners over the years from 2002-2015. However, participation in HIV prevention programmes declined. Thus, data from this survey has revealed both areas of improvements and weaknesses where enhancement of efforts is required and these are discussed in this section.

The methodologies followed here for both serological and behavioural surveys were similar to that of the national serological surveillance and BSS followed in earlier years [24, 25]. There were however, a few differences in the methodologies for sampling hijra; a birit based method was used which had been successfully applied during the exercise for counting hijra [16, 17] and for the baseline survey on hijra that was conducted in 2010 prior to starting the programme activities of the Global Fund project of icddr,b[20]. In addition, in earlier rounds of BSS, only sex worker hijra were interviewed. Since the baseline survey conducted in 2010 both non-sex worker (badhai) and sex worker hijra have been interviewed so that the comparisons for badhai hijra with earlier rounds of BSS were not possible. Such a differentiation between sex worker and badhai hijra was not made in serological surveillance.

This section will focus on some key findings that are presented under broad heads as shown below.

HIV prevalence

As before among these three key populations, HIV prevalence was highest in hijra. In 2011 in Dhaka, 1% of hijra were HIV positive [24] and in this surveillance the prevalence was 0.9%. In Hili, although the percentage appears to be high but the number of hijra sampled was small (n=46) among whom only two were HIV positive. Similarly, the numbers of hijra sampled were very few both in 2011 (n=31) and in 2013 (n=28) and in both years, 1-2 hijra were found positive. Thus, it is apparent that there is HIV in Hili although the numbers are low and this is not only amongst hijra as during the serological surveillance of 2011, HIV was also detected among casual female sex workers and PWID [24]. Thus, Hili as a geographical area appears to be vulnerable to HIV which may be related to it being a border city and the frequent travel across to India where HIV has been documented at higher levels. Such mobility was found not only in this survey but also in previous rounds of serological surveillance [24] and a mobility study on hijra [26].

STIs

Active syphilis among all groups was below 5% and the significant decline in prevalence among hijra and MSW of Dhaka suggests either effective treatment for syphilis or adoption of safer behaviours or both. This surveillance only assessed active syphilis in blood but it is well known that rectal and oropharyngeal STIs are common among MSM and has been reported at high levels from other countries such as Indonesia where the prevalence of rectal gonorrhoea or chlamydia was approximately 32% in three cities [27]. A recent study (in 2015) assessing aetiological diagnosis of STIs among MSW and hijra attending DICs in Dhaka showed that the prevalence of gonorrhoea from different anatomical sites (oropharyngeal, urinary tract, anorectal) was 15.9% and 15.4% respectively while that of chlamydia was around 4% in both groups (unpublished). Any STI (active syphilis, gonorrhoea or chlamydia) was detected in 20.7% and 21.3% of MSW and hijra respectively with gonorrhoea being the most common infection identified. The study also showed that the most common site of infection was the oropharyngeal region with more than 10% MSW and hijra being positive for gonorrhoea. Oral STIs is a common problem among those who practice male to male sex and has been reported in different settings [28]. Condom use in oral sex was not commonly reported in the present survey and this is an issue that needs urgent attention.

Coverage of HIV prevention program and unsafe sex

Fewer MSM, MSW and hijra reported receiving HIV prevention services in 2015 compared to 2013. HIV prevention services for MSW, hijra and their clients (male sex partners) was provided through the Global Fund project and fhi360 with USAID funds. However, the services provided by fhi360 was curtailed in July 2014 [29] which is probably the reason for the decline in coverage in 2015. However, despite declining coverage, the percentage of MSM, MSW and hijra sex workers using condoms remained the same in 2015 compared to 2013. At the same time, many especially MSM, said that they cited other sources of condoms including pharmacies (by the majority of MSM) and also sex partners were mentioned by all three groups. This is encouraging because it suggests that awareness regarding protection against HIV/STIs is high and the message of safe sex has likely been internalised by many. These positive aspects of the programme need to be understood further and utilised so that the programme can be made sustainable. However, it is apparent that many MSM, MSW and hijra never use condoms with their clients or non-transactional partners. A better understanding of the characteristics of men and hijra who do not use condoms is required so that special attention can be given to their needs.

HTC

An important component of the HIV prevention programmes is provision of HTC. The coverage of MSW and hijra (>30%) with HTC in the last year was better than for MSM (10.6%). Expansion of HTC services is required so that those in need can be provided treatment.

Young age and male to male sex

Age at first sex was below 15 years on average for hijra and MSW and it was just over 15 years for MSM. Very young age at sex has also been reported for other key populations in Bangladesh such as female sex workers but it is more common among MSM, MSW and hijra [30]. Similar findings have also been reported from the US in a study of high school youth where it was found that young age (before 13 years) at first sex was associated with a self-identity of being gay, lesbian or bisexual [31]. Sexual debut at a very young age especially when adults are engaged in the sex act can often be coercive and may also be violent. An ethnographic study on hijra in Bangladesh [13] showed that many hijra were sexually abused in their childhood by older males, some of whom were their relatives. In the current survey, all hijra said their first sex partner was male and this was also true for the vast majority of MSW. These behaviours are hidden and often go unrecognised. More recently however, for older adolescents who are vulnerable to HIV it has become possible to reach out to them as recently Bangladesh has developed a HIV risk reduction strategy for most at risk adolescents [32] that recommends providing information as well as HIV/STI prevention and treatment services for adolescents who are engaged in such high risk behaviours. An interim memo issued by the MOHFW allows such services to be made available to all young and adolescent individuals.

Concurrent female sex partners

Many MSM and MSW were married to females and this pattern has been reported consistently from other countries such as China where approximately 17% of MSM were married [33, 34], and India where the proportions married were higher at 35-42% [35, 36]. It has also been documented in Bangladesh not only through BSS but also other research studies [10]. The reason why many MSM marry is usually related to traditional cultural and family values [33, 37]. In addition to wives, married MSM have other female sex partners including girlfriends and female sex workers.

The worrisome issue here is the vulnerability of the female sex partners who are often unaware of their male partners' male to male sexual behaviour as such behaviour is stigmatised and hidden. Thus, partner notification which is an important component of HIV and STI prevention is difficult which make women

vulnerable to infections through such relationships. This is a well-recognised problem globally but given the stigma and the sensitive nature of the issue, no well-defined interventions have been developed and implemented. There is an urgent need to work with female partners of MSM so that they can be included as a part of intervention programmes.

Illicit drugs

Illicit drugs were used in the last year by approximately 12-17% of the MSM, MSW and hijra sampled in this survey. The drugs most commonly used were methamphetamine (Yaba) and the codeine containing cough syrup (Phensidyl) which are not injected. It is fortunate that very few of the MSM, MSW and hijra sampled in this survey said that they injected drugs. The use of stimulants such as methamphetamine, ecstasy and others are common among MSM globally (42). A better understanding of the context of illicit drug use amongst the community of MSM and hijra in Bangladesh is required in order to be able to provide effective services.

Female hormones

Taking female hormones was very commonly reported by feminine MSW (known as kothi) and more so by hijra. In the Asia Pacific region, many transgender women use a range of hormones without medical supervision; for example 88.6% transgender women in Thailand reported that they used hormones [38, 39]. This practice often begins at an early age and is unregulated so that the potential serious side-effects are not considered [40]. Another danger with injectable hormones is sharing of injection equipment as has been reported from South East Asia [41]. A comprehensive approach to HIV prevention that understands and considers different aspects of lives of hijra is essential in order to provide more effective services.

Use of social media to reach MSM and MSW

Male to male sexual behaviour is highly stigmatised and hence hidden which is unlikely to change in the near future. For HIV prevention programmes to be able to reach more MSM, MSW and hijra alternative strategies need to be explored. The present survey showed that a substantial proportion of MSM (18%) contacted their sex partners through social media and 12.7% of MSW used social media to contact their clients. Use of social media was less common among hijra (3.7%). Using social media for HIV prevention services has been tried in other settings [42-44]and needs to be explored in Bangladesh.

The issues highlighted here along with some other issues such as violence are ones that require special attention. Some are positive findings and lessons learnt can help improve programmes further while others reveal shortcomings for each of which an in-depth understanding is required that will enable programme improvement.

LIMITATIONS OF THE STUDY

There were some limitations to the present surveillance conducted among MSM, MSW and hijra and these are discussed here:

1. Sampling was limited to only two geographical areas; Dhakaand Hili. Therefore, results may not be generalizable for all MSM, MSW and hijra in Bangladesh.

2. Sampling for BSS was conducted using TLS and was restricted topeople who were present in public venues; it did not take into account those members of key populations who are more hidden and do not come to such venues. Whether those individuals who do not present themselves at public venues practice riskier behaviours is not known.

However, TLS has been utilised over the years to ensure comparability.

3. Sampling for serological surveillance in areas whereprevalence is low has been carried out through intervention organisations on a first come first served basis. There remains the possibility of a bias towards those who are negative as this is carried out with the help of intervention programmes. However, such an approach has been proposed in the revised guidelines of the second-generation surveillance system [7] because it takes into consideration limitations of funding and the low likelihood of identifying an epidemic using a random sampling technique. This is because while selecting the key populations and geographical areas for sampling, data are triangulated from multiple sources including HIV case detection and any indicator for enhanced risk and vulnerability.

CONCLUSION

Overall the data obtained in this surveillance round and the trends observed over the years show continued low prevalence of infections with a rising trend of condom use. However, condom use needs to be improved further and HTC coverage needs to be expanded. In addition, other issues such as those on violence, barriers to accessing services are still of concern and need attention. The information presented in this surveillance report is of relevance to HIV intervention programmes as well as policy makers as the data can be used to enhance ongoing programmes. Continuation of services for these hidden and stigmatised key populations is required to improve their lives but much still remains to be done to ensure healthy lives.

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