HIV AND SYPHILIS SURVEILLANCE SURVEY REPORT, 2017

Country: Mongolia

Ulaanbaatar
2018

This survey has been jointly conducted by the School of Public Health of Mongolian National University of Medical Sciences (MNUMS) and National Centre for Communicable Disease (NCCD) with financial support from the Global Fund-Supported Project on AIDS and Tuberculosis (Global Fund).

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ELISA	Enzyme Linked Immunosorbent Assay
FHC	Family Health Centre
FSW	Female Sex Worker
HC	Health Center
HD	Health Department
HIV	Human immunodeficiency virus
ILS	Integrated Laboratory Services
LWBP	Liberal Women's Brain Pool
MEIAD	Monitoring and Evaluation and Internal Auditing Department
MNUE	Mongolian National University of Education
MNUMS	Mongolian National University of Medical Sciences
MOH	Ministry of Health
MS	Medical Sciences
MSM	Men who have sex with men
NCCD	National Centre for Communicable Disease
NGO	Non-Governmental Organization
PH	Public Health
PHD	Public Health Division
RDTC	Regional Diagnostic and Treatment Centre
RPR	Rapid Plasma Reagin Test
SPH	School of Public Health
STI	Sexually Transmitted Infections
TCS	Treatment, care and services
SS	Surveillance Survey
TPHA	Treponema pallidum haemagglutination test (to confirm syphilis)
TVET	Technical and Vocational Education and Training
UN	United Nations
WHO	World Health Organization

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SUMMARY

The surveillance survey (SS) has been conducted with an aim to estimate the prevalence of Sexually Transmitted Infections (STIs) and Human Immunodeficiency Virus (HIV) among key populations at risk of contracting STIs and HIV (KPs) and to assess their sexual behaviors and knowledge on and attitude towards HIV and AIDS.

KPs were represented by Female Sex Workers (n=458) and Men who have Sex with Men (n=261), and the population group of youth and students aged 15-24 years (n=1875) was also surveyed as recommended by MOH and the Steering Committee of the Surveillance Survey.

Time-Location Sampling (TLS) method was used for sampling of Female Sex Workers (FSWs) and the FSWs were selected from Ulaanbaatar city and the aimags of Darkhan-Uul, Dornod, Orkhon and Khuvsgul. Respondent-Driven Sampling (RDS) method was used for sampling of Men who have sex with Men (MSM) and the survey was conducted in Ulaanbaatar city. The youth and students' survey was conducted in Ulaanbaatar city and involved youth and students aged 15-24 years who study in state and private universities, colleges and technical and vocational education and training (TVET) centers.

STI and HIV prevalence. The prevalence of syphilis among FSWs was 24.5 percent, which is 4.7 percentage points lower than the result of the Surveillance Survey of 2014. In all locations (Ulaanbaatar city and the aimags) of the survey, the results presented a decrease of syphilis prevalence in comparison to 2014. No cases of HIV infection were detected among FSWs.

Syphilis prevalence, which was 7.1 percent among MSM in 2014, increased to 9.2 percent in 2017. The prevalence of HIV in this population group was 9.2 percent, which is a result of a 2.8 percentage point decrease since 2014.

The prevalence of syphilis was 0.6 percent among college students. No cases of HIV infection were detected among the students who were tested.

Knowledge of STI, HIV and AIDS prevention. The proportion of respondents who correctly identified the major ways of preventing the transmission of HIV and rejected the misconceptions about HIV transmission was 25.3 percent in FSWs, 55.6 percent in MSM and 21.4 percent in students respectively.

Condom use. Percentage of FSWs who reported using condoms consistently while having paid sex for the last 12 months was 51.3, which is 5.6 percentage points lower than in 2014. Consistent condom use of FSWs during non-paid sexual intercourse has increased by 6.7 percentage points compared to 2014. Furthermore, the rate of consistent condom use during sexual intercourse with regular sexual partners was 15.6 percent in FSWs.

Percentage of MSM who reported using condoms consistently while having sexual intercourse for the last 12 months was 55.9 percent, which is 10.4 percentage points higher than in 2014. Percentage of MSM who reported having consistent condom use during sexual intercourse with men was 60.2, which shows an increase of 15.3 percentage points since 2014.

Percentage of youth and students who reported having consistent condom use during sexual intercourse was 57.4.

STI Symptoms. Of the surveyed FSWs, 41.9 percent reported having STI symptoms in the last 12 months. This is an increase of 12 percentage points since 2014. Among the FSWs who reported having symptoms, 57.8 percent sought medical treatment.

Of the surveyed MSM, 8.4 percent reported having STI symptoms in the last 12 months and 54.5 percent of those who had symptoms received medical treatment in state owned or private clinics.

Among the surveyed students, 6.9 percent reported having STI symptoms in the last 12 months and 46.9 percent of those who had symptoms sought medical treatment in hospitals. While 2.8 percent of the overall surveyed male students reported having STI symptoms and 58.3 percent of those who had symptoms sought medical treatment, 10.5 percent of the female students reported having STI symptoms and 44.3 percent of those who had symptoms received medical treatment.

ONE. PREFACE

1.1 Survey Rationale

This surveillance survey (SS) aims at estimating the prevalence of HIV and syphilis among KPs including FSWs, MSM and youth and students aged 15-24 years and assessing their sexual behaviors and knowledge of and attitude towards HIV and AIDS.

The findings of the Surveillance Survey are widely used as the main source of information in planning interventions to prevent HIV, AIDS and STIs, to contain and reverse their spread, and to assess the feasibility of prevention and care programs and projects on HIV, AIDS, STI, and in reporting to Global AIDS Response Progress Reporting (GARPR), as well as reporting on outcome and impact indicators for the National level response.

Since 2002, eight rounds of HIV and STI surveillance survey (SS) have been conducted in Mongolia. The SS 2009 recommended to conduct the survey every 4 years among low risk groups and biennially among KPs. Therefore, in 2017 the SS was conducted among the KPs represented by FSWs and MSM. In accordance with the development agenda of Government of Mongolia, youth and students aged 15-24 years representing general population were also included in the survey.

1.2 Goal and Objectives

The goal of the survey is to estimate the prevalence of HIV and syphilis among specific population groups and to assess their sexual behaviors and knowledge of and attitude towards the infections.

Objectives:

- To estimate the prevalence of HIV and syphilis in KPs;
- To assess STI, HIV and AIDS knowledge and attitude, sexual behaviors, and the dynamics in KPs;
- To estimate the prevalence of HIV and syphilis among students aged 15-24 years;
- To assess STI, HIV and AIDS knowledge and attitude, sexual behaviors, and the dynamics in youth and students aged 15-24 years

TWO. SURVEY DATA AND METHODOLOGY

2.1 Survey Design

The SS had a cross-sectional design and the data was collected through questionnaire and lab-testing methods.

2.2 Study Populations

Study populations included KPs at risk of contracting STIs and HIV: 1) FSWs; 2) MSM; and 3) youth and students. Definitions of the study populations are presented in Table 2.1.

Table 2.1 Definition of study populations

Study Populations	Definition
Female sex workers (FSWs)	Women aged over 15 years, who willingly exchanged sexual servies for money/gift in the last 12 months
Men who have sex with men (MSM)	Men aged over 15 years, who had anal or oral sex with men in the last 12 months.
Youth and students	Youth and students aged 15-24 years who study in universities, colleges and TVET centers.

2.3 Sample Size and Scope of the Survey

2.3.1 Female Sex Workers

FSWs were recruited from Ulaanbaatar city, and the aimags of Darkhan-Uul, Dornod, Orkhon and Khuvsgul. The required sample size was calculated on the basis of the proportion of FSWs (0.33 percent) among women of reproductive age (15-49 years) as estimated by the "Female sex worker population size estimation, venue mapping and health service assessment in Ulaanbaatar, Mongolia, 2015-2016" survey (A.Bulbul et al., 2015),) and the prevalence of syphilis among FSWs (29.7 percent) empirically estimated by the HIV and STI surveillance survey 2014, and taking into account the design effect of the study (Table 2.2). According to the calculation, which used Formula 1 below, the sample size required for the FSWs' survey was 455.

Formula 1:

$$ss = \frac{Z^2 \times p \times (1-p)}{e^2} \qquad n = \frac{SS}{(1+\frac{(SS-1)}{SWs})} \times DEFF$$

Sampling method

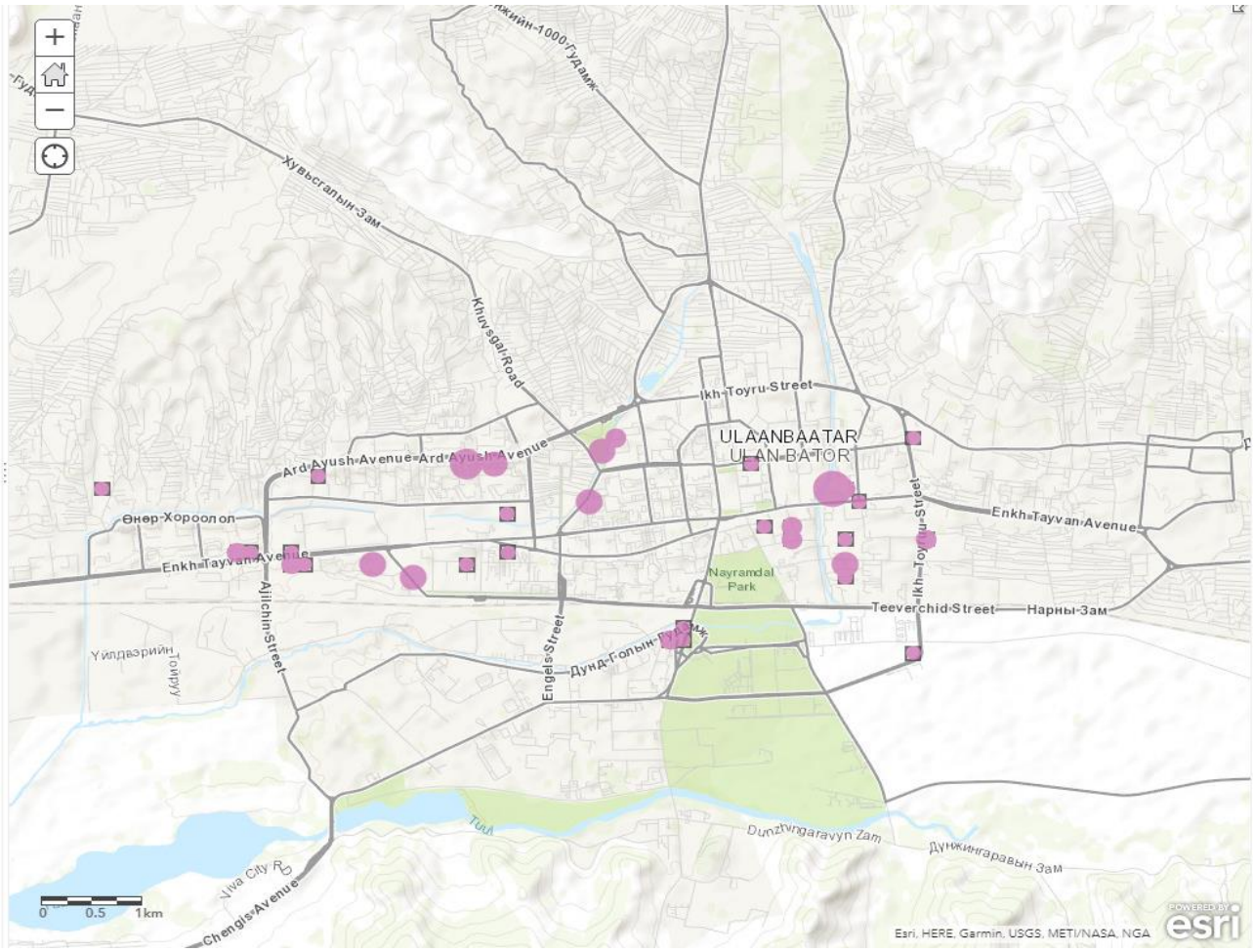
Time-Location Sampling (TLS) method was used for sampling of FSWs (Figure 1). The sampling frame was the number of study population at any selected location during the survey period, but not the place of residence. Prior to conducting the survey, a list of all locations where FSWs could be present was created by using key informant interviews and study sites were selected from the list. The sampling took place until the required sample size was reached.

Table 2.2 Sampe size of FSWs

Sampling locations	Number of women aged 14-49 years	Estimated number of FSWs*	Confidence interval (Z=1.96)	Estimated prevalence of syphilis	Margin of error (±%)	Estimated sample size (n)	Surveyed sample size (n)
Ulaanbaatar	401,086	1,293	95%	0.29	0.057	202	207
Orkhon	28,588	94	95%	0.32	0.064	64	56
Darkhan-Uul	27,167	90	95%	0.25	0.050	68	70
Dornod	20,329	67	95%	0.37	0.074	47	49
Khuvsgul	35,074	116	95%	0.32	0.063	74	76
Total	512,244	1,690				455	458

** A.Bulbul, "Female sex worker population size estimation, venue mapping and health service assessment in Ulaanbaatar, Mongolia 2015-2016" survey*

Figure 2.1 Time-Location Sampling based FSW survey locations in Ulaanbaatar



2.3.2 Men who have Sex with Men

Following the recommendations of the HIV and STI surveillance survey 2014, the MSM sample size was estimated from the population of Ulaanbaatar city. Required sample size was calculated on the basis of the proportion of MSM (0.4 percent) among the men aged 15-49

years estimated in 2015 under a survey conducted by A.Bulbul et al., and the prevalence of HIV among MSM (12%) calculated within the HIV and STI surveillance survey 2014. According to the calculation, which used Formula 1 below, the sample size required for the MSM survey was 261 (Table 2.3).

Table 2.3 Sample size of MSM

Sampling location	Number of men aged 15-49 years	Estimated number of MSM*	Confidence interval (Z=1.96)	Estimated prevalence of HIV	Margin of error (±%)	Sample size (n)
Ulaanbaatar	365,681	1,463	95%	0.12	0.036	261

**Tobi J Saidelet.al., Population size estimation for key populations in Mongolia, 2015*

Sampling method

MSM were selected using Respondent Driven Sampling (RDS) method. Networks within MSM communities in Ulaanbaatar were identified and seeds were chosen from each of the networks. Each seed distributed coupons inviting to take part in the survey to 3 members of the network, who in turn accepted the invitation and distributed coupons to three more members and so on and the recruitment proceeded until the required sample size was reached. Four people active in the community networks were selected as seeds, thus recruited a total of 261 respondents using the RDS method. Table 2.4 presents the number of survey respondents brought in by each seed. Network and distribution of the seeds selected in the MSM survey is depicted in Annex 1.

Table 2.4 MSM survey seeds and number of respondents

Seed	Number of survey respondents
1	138
2	3
3	21
4	99
Total	261

2.3.3 Youth and Students aged 15-24 years

Youth and students aged 15-24 years who study in public and private universities, colleges and TVET centers located in Ulaanbaatar city were recruited as survey respondents. The sample size was calculated based on the representativeness of students of Mongolia, and the prevalence of syphilis (2.6%) among students, estimated by M.Burnee et al., in 2016. Margin of error of the survey was assumed to be 0.010 and the estimated sample size was 1,873 (Table 2.5).

Table 2.5 General estimates of sample size of youth and students

Sex	Total number of students aged 15-24 years	Confidence interval	Estimated prevalence of syphilis	Margin of error (±%)	Sample size
Male	65.612	95%	0.026	0.010	782
Female	91.526	95%	0.026	0.010	1091
Total	157.138	95%			1873

Sampling

The survey respondents were recruited by random sampling method. Sampling was based on number of students attending state and private universities, colleges and TVET centers, which were listed in the Higher education statistics of the relevant authorities (Table 2.6).

Table 2.6. Sample size of youth and students

Students' registered place of residence		State owned universities	Private universities	TVET centers	Total	
					Number	Percen-tage
Ulaanbaatar		320	232	47	599	32.0%
Arkhangai		66	19	7	92	4.9%
Bayan-Ulgii		16	13	0	29	1.5%
Bayankhongor		38	22	3	63	3.4%
Bulgan		42	11	0	53	2.8%
Gobi-Altai		36	10	0	46	2.5%
Gobisumber		14	5	1	20	1.1%
Darkhan-Uul		30	16	1	47	2.5%
Dornogobi		27	22	5	54	2.9%
Dornod		42	12	2	56	3.0%
Dundgobi		18	7	2	27	1.4%
Zavkhan		35	9	4	48	2.6%
Orkhon		66	35	3	104	5.5%
Uvurkhangai		70	26	5	101	5.4%
Umnugobi		34	13	0	47	2.5%
Sukhbaatar		42	8	2	52	2.8%
Selenge		46	23	3	72	3.8%
Tuv		49	16	4	69	3.7%
Uvs		32	21	3	56	3.0%
Khovd		64	27	2	93	5.0%
Khuvsgul		57	22	7	86	4.6%
Khentii		43	14	3	60	3.2%
Total	**Number**	**1,187**	**583**	**104**	**1,874**	**100.0%**
	Percentage	**63%**	**31%**	**6%**	**100%**	

2.4 Data Collection Methods and Instruments

Questionnaire and laboratory tests were used in data collection of the survey.

Questionnaire

The same questionnaire, which was used in the previous round of the suvey, was used in this round so that the findings of the two surveys could be compared. Data was collected using a questionnaire with the following structure and developed separately for each study group:

- Demographics
- Socio-economic characteristics
- Sexual behaviors
- Alcohol use
- Drug use
- Knowledge, attitude and behaviors on HIV, AIDS and STIs

- Coverage of HIV testing services
- Human rights issues

Questionnaires used for the survey:

- Questionnaire for FSWs
- Questionnaire for MSM
- Questionnaire for youth and students

A survey registration form and the questionnaires were converted into electronic forms and data was collected using a Tablet equipped with mobile internet connection and GPS. The data collected through the registration form and the questionnaires is stored in an internet-based database. GPS settings of the Tablet was used for marking the data collection spots, monitoring the survey process and identifying the location of respondents.

2.5 Ethical Issues

Data collection commenced after the survey methodology was discussed and approved by the Council of scientists of the School of Public Health, MNUMS, and endorsed by the Medical Ethics Committee of the Ministry of Health on Nov 7, 2017. The survey respondents were given information through an 'informed consent form' and were welcomed to participate in the survey. Those who consented to participate were recruited.

2.6 Data Collection

2.6.1 Arrangements for data collection

Information on the survey goal, its importance and relevant activities were given to the targeted populations through the 'informed consent form' and they were welcomed to participate in the survey. Thus, people who consented to participate were recruited.

In accordance with the survey goal and objectives, 3 different teams worked on collecting data from FSWs, MSM and youth and students aged 15-24 years.

A. Data collection from FSWs

The FSW data collection team worked in Ulaanbaatar city and four aimags including Darkhan-Uul, Dornod, Orkhon and Khuvsgul. Executive director of "Perfect ladies" NGO led the team and provided logistics coordination. Data collection was organized as follows:

Data collection team structure: Three survey teams worked in Ulaanbaatar city. Each team consisted of 5 members including 2 interviewers, a nurse, a driver and an outreach worker.

A subteam was assigned to Darkhan-Uul, Dornod, Orkhon and Khuvsgul aimags respectively. Each subteam was led by a AIDS/STI Cabinet doctor of the concerning Aimag General Hospital or Regional Diagnostic and Treatment Centre (RDTC) and had 4 members including an interviewer, a nurse, a driver and an outreach worker.

Hence, the FSW data collection team had a total of 45 members including a team leader, a coordinator representating NGOs, 4 leaders of subteams in the rural areas, 7 outreach workers, 10 interviewers, 7 nurses to collect specimen for lab-tests, 8 lab technicians in the rural areas and 7 drivers.

Sampling: Sampling frame was set in collaboration with the NGO reaching out to FSWs. Number of FSWs in each of the FSW locations (hotels, bars, massage parlours and night clubs etc.) on the list was estimated. In some locations, FSWs were recruited during various events conducted by organizations working with FSWs.

Each team coded FSWs starting with the initial code number (001…., 101…., 201…, 301…. etc.) assigned to the team.

Interviewing: Interviews took place after the survey information was provided to the participants and their consent received through the informed consent form. Data collection was conducted by the interviewers in the following order:

1. An interviewer clearly describes the survey goal, provides information to the survey participants and lets them sign on the informed consent form.
2. Registration data of the survey participants is entered into the "*Registration Form*" installed on the Tablet used by the interviewers. In case where a participant refuses to be surveyed, "refused to participate" option should be marked in the register.
3. Instructions on how to respond to the questionnaire using the Tablet are given to the participants who agree to take part in the survey.
4. The interviewer meets with each of the participants individually and asks questions of the "Questionnaire on sexual behavior" by using a method of interview.
5. The interviewer gives the participant the "*Lab-test specimen form*" with the code number of questionnaire and sends her to the nurse who works on collecting blood specimen for lab-tests. The interviewer gives the nurse a hand-filled registration form with the same code number of the questionnaire responded by the participant.
6. The nurse collects 5ml-7ml of blood from the participant's vein by using a vacutainer, as per the standard operating protocols. Specimen number on the vacutainer label is placed on the registration form. The specimen number of the participant is identical to the code number of her questionnaire. The amount of blood specimen should be sufficient for lab-testing, but hemolyzed or excessively lipemic blood samples should not be used for testing.
7. After completion of the interview and the blood specimen collection, the interviewer expresses gratitude to the participant and hands out condoms and IEC materials.
8. The blood specimens collected in the Ulaanbaatar city within a day are stored overnight in the laboratory storage of the HIV/STI Surveillance and Research Unit, NCCD and transferred to the AIDS/STI Laboratory of the Integrated Laboratory Unit, NCCD the next morning. The survey team receives the lab-test results within 5 days.
9. The nurses deliver all the specimens collected in the aimags to respective local laboratories within the same day of sampling along with the testing form. The team leader sends the lab-test results and the filled-out questionnaire forms to the survey coordinator located in the Ulaanbaatar city.
10. Ten percent of the blood specimen collected in the aimags are transported to and retested at the AIDS/STI Laboratory of the Integrated Laboratory Unit, NCCD.
11. Should there be a participant who tests positive for syphilis or HIV, the team reaches out to the participant again and initiates free treatment and care.
12. If any of the participants wants to receive her lab-test results, she is allowed to do so and a card for access to lab-test results is issued to the participant. The card contains

the participant's code, and address and phone number of the place where she could get her test results. The lab-test results should be provided at the AIDS/STIs Surveillance and Research Unit, NCCD. The nurses ask the participants whether it's necessary to remind them when the test results are out, and if they want, write down their contact phone numbers in the lab-test logbook. In order to keep confidentiality of the participants, their contact phone numbers are not presented in publicly open information sources like the survey results and reports.

B. Data collection from men who have sex with men

The MSM survey data was collected in the Ulaanbaatar city. The survey logistics coordinator of the team was in charge of organization and data collection. The coordinator representing NGOs working to reach out to MSM was in charge of identifying the MSM community networks, selecting the seeds and recruiting the survey participants.

Data collection team structure: The MSM data collection team had 10 members including a team leader, a coordinator, a coupon manager, 5 interviewers, an assistant and a nurse.

Sampling: MSM were recruited in collaboration with three NGOs (Together; Youth for Health; and Human Rights, Youth and Health Support Centre) working to reach out to MSM by adopting a RDS method used in involving hidden and hard-to-find-or-reach populations in surveys. Initially, four seeds were chosen from the community networks identified in Ulaanbaatar. Each seed distributed coupons inviting to take part in the survey to 3 members of his own network. The ones who accepted the invitation participated in the survey and further distributed the coupons to three other members and so on and the sampling proceeded until the required sample size was reached. New seeds were needed to be selected if the 4 seeds chosen at first did not recruit the next 2-3 participants.

Interview: Data collection interviews were conducted in specially arranged premises. The interviewers clearly explained the goal and importance of the survey to people who came to participate in the survey, in accordance with the informed consent form. The survey participants were recruited on a voluntary basis. Data collection was conducted by the interviewers in the following order:

1. An interviewer clearly describes the survey goal, provides information to the survey participants and lets them sign on the informed consent form.
2. Registration data of the survey participants is entered into the "*Registration Form*" installed on the Tablet used by the interviewers. In case where a participant refuses to be surveyed, "refused to participate" option should be marked in the register.
3. Instructions on how to respond to the questionnaire using the Tablet are given to the participants who agree to take part in the survey.
4. The interviewer meets with each of the participants individually and asks questions of the "Questionnaire on sexual behavior" by using a method of interview.
5. The interviewer gives the participant the "*Lab-test specimen form*" with the code number of questionnaire and sends him to the nurse who works on collecting blood specimen for lab-tests. The interviewer gives the nurse a hand-filled registration form with the same code number of the questionnaire responded by the participant.
6. The nurse collects 5ml-7ml of blood from the participant's vein by using a vacutainer,

as per the standard operating protocols. Specimen number on the vacutainer label is placed on the registration form. The specimen number of the participant is identical to the code number of his questionnaire. The amount of blood specimen should be sufficient for lab-testing, but hemolyzed or excessively lipemic blood samples should not be used for testing.

7. After completion of the interview and the blood specimen collection, the interviewer expresses gratitude to the participant and hands out condoms and IEC materials.
8. All the blood specimens collected in a day are sent to the AIDS/STI Laboratory of the Integrated Laboratory Unit, NCCD in the same day. The survey team receives the lab-test results within 5 days.
9. Should there be a participant who tests positive for the infections, the team refers the participant to doctors of the AIDS/STI Surveillance and Research Unit and initiates free treatment and care.
10. If any of the participants wants to receive her lab-test results, she is allowed to do so and a card for access to lab-test results is issued to the participant. The card contains the participant's code, and address and phone number of the place where she could get her test results. The lab-test results should be provided at the AIDS/STIs Surveillance and Research Unit, NCCD. The nurses ask the participants whether it's necessary to remind them when the test results are out, and if they want, write down their contact phone numbers in the lab-test logbook. In order to keep confidentiality of the participants, their contact phone numbers are not presented in publicly open information sources like the survey results and reports.

C. Data collection from youth and students

Data collection from youth and students was conducted in the Ulaanbaatar city. An epidemiologist of the HIV/STI Surveillance and research Unit of NCCD worked as a data collection team leader.

Data collection team structure: The youth and student data collection team was divided into 3 subteams. Each subteam had 5 members including 3 interviewers, an assistant and a nurse.

Sampling: The survey was conducted among students attending state and private universities, colleges and TVET centers located in Ulaanbaatar city. The data collection team visited universities, colleges and their dormitories and invited students to participate in the survey until the required sample size was reached.

Interview: The interviewers clearly explained the survey goal and importance to the participants, in accordance with the informed consent form. The survey participants were recruited on a voluntary basis upon their consent. Data collection was conducted by the interviewers in the following order:

1. A designated interviewer clearly describes the survey goal, provides information to the survey participants and lets them sign on the informed consent form.
2. Registration data of the survey participants is entered into the "*Registration Form*" installed on the Tablet used by the interviewers. In case where a participant refuses to be surveyed, "refused to participate" option should be marked in the register.
3. Instructions on how to respond to the questionnaire using the Tablet are given to the

participants who agree to take part in the survey.

4. The interviewer meets with each of the participants individually and asks questions of the "Questionnaire on sexual behavior" by using a method of interview.
5. The interviewer gives the participant the "*Lab-test specimen form*" with the code number of questionnaire and sends him to the nurse who works on collecting blood specimen for lab-tests. The interviewer gives the nurse a hand-filled registration form with the same code number of the questionnaire responded by the participant.
6. The nurse collects 5ml-7ml of blood from the participant's vein by using a vacutainer, as per the standard operating protocols. Specimen number on the vacutainer label is placed on the registration form. The specimen number of the participant is identical to the code number of his questionnaire. The amount of blood specimen should be sufficient for lab-testing, but hemolyzed or excessively lipemic blood samples should not be used for testing.
7. After completion of the interview and the blood specimen collection, the interviewer expresses gratitude to the participant and hands out condoms and IEC materials.
8. All the blood specimens collected in a day are sent to the AIDS/STI Laboratory of the Integrated Laboratory Unit, NCCD in the same day. The survey team receives the lab-test results within 5 days.
9. Should there be a participant who tests positive for the infections, the team refers the participant to doctors of the AIDS/STI Surveillance and Research Unit and initiates free treatment and care.
10. If any of the participants wants to receive her lab-test results, she is allowed to do so and a card for access to lab-test results is issued to the participant. The card contains the participant's code, and address and phone number of the place where she could get her test results. The lab-test results should be provided at the AIDS/STIs Surveillance and Research Unit, NCCD. The nurses ask the participants whether it's necessary to remind them when the test results are out, and if they want, write down their contact phone numbers in the lab-test logbook. In order to keep confidentiality of the participants, their contact phone numbers are not presented in publicly open information sources like the survey results and reports.

Things to take into consideration during collection of data through questionnaire: **When asking for information about Sexual behaviors of the respondents, the survey team should consider the following things:**

- As per the survey questionnaire, the interviewers should collect data from the survey respondents by using an interview method.
- Completion of the questionnaire should be self-administered without any interference.
- The survey team leader should be responsible for making corrections in time if any errors or drawbacks occur, and keep the protocol.
- The registration forms of the people who refused to participate in the survey should be kept separately and handed over to the team leader. The registration number of people who refused to participate in the survey should be kept the same and numbering of the next participant should continu from that number.
- The registration form number, the questionnaire code number and the lab-test specimen form number should all be the same.

Treatment of survey participants: If the lab-test results reveal syphilis and HIV infections, the survey team will contact and inform the corresponding participants. NCCD will provide the infected participants and their sexual partners with free treatment and counselling.

2.6.2 Laboratory Testing

Collection of blood specimen: Blood specimens for serological testing of HIV and syphilis were collected from the participants' vein, in compliance with the standart operating protocols.

Storage and transportation: Blood specimens were delivered to local serological laboratories within the day of sampling. Blood specimens collected from the survey participants were stored at room temperature for not less than 4 hours and centrifuged at the speed of 3000 rpm, to separate serum from the cells. The sera separated from the red blood cells were stored in 3 Eppendorf tubes. First tube of serum was used for testing, and second and third tubes were stored at -2-8 degrees Celcious and -20 degrees Celsius respectively. The second tube of serum specimens (stored at (-2)-(-8) degrees Celsius) collected from FSWs in the aimags were transported to the AIDS/STI Laboratory of the Integrated Laboratory Unit of NCCD once in every 21 days, in compliance with the "Specimen Storage and Transportation Guidelines". The remaining third tube of serum specimen was kept in the aimag laboratory until the test results arrived from the Integrated Laboratory Unit of NCCD.

Things to take into consideration when collecting specimens and conducting lab-tests:

- Serological testing should cover FSWs, MSM and youth and students aged 15-24 years.
- The lab-test specimen form number and the specimen vacutainer label number should match with the questionnaire code number, and the Laboratory test results should be registered in a special form.
- Testing in rural locations should be performed using only the diagnostic test kits specified in the survey methods and supplied from the central unit.
- Test kit consumption should be recorded.
- Reactive HIV rapid antibody test results should be recorded in the special registry and sent for confirmation to the AIDS/STI Laboratory of the Integrated Laboratory Unit, NCCD. If the test results are confirmed, client confidentiality should be strictly kept.

HIV screening: HIV screening tests in rural locations were conducted using "Abon HIV 1/2" rapid test kits that are able to provide qualitative detection HIV-1 and HIV-2 antibodies and subtypes in human blood serum. Specimens tested reactive with the rapid tests were sent for confirmation to the AIDS/STI Laboratory of the Integrated Laboratory Unit of NCCD, following the "Regulations of Biohazardous shipping and bio-preparations transportation".

Reactive rapid test results were registered and informed to the survey team leader. The AIDS/STI Laboratory of the Integrated Laboratory Unit of NCCD tested reactive specimens again for confirmation using the Western blot and ELISA techniques, in compliance with the Order #305 of the Minister of Health issued in 2017 on the Guidelines of STI, HIV and AIDS treatment and care. Tests were performed, as per the instructions of test kit manufacturers.

Syphilis screening: Syphilis serological tests were performed locally using Rapid Plasma Reagin (RPR) and Treponema Pallidum Hemagglutination Assay (TPHA). Qualitative RPR tests were performed, in accordance with the instructions of the manufacturer, using RPR test kit (New Market Laboratories Ltd. Kentford, Newmarket, CB8 & PN-UK), and the package of tests of that day were qualitatively confirmed using positive and negative controls. In case where reactive RPR test result came out, confirming test was performed using TPHA test kit (New Market Laboratories Ltd. Kentford, Newmarket, CB8 & PN-UK), following the instructions of the qualitative test kit manufacturer. It was confirmed as syphilis infection case, if both the RPR and TPHA test results were reactive with RPR dilution of >1:2.

Quality control: Internal quality assurance is performed during lab-tests, according to the standards. All the positive specimens and 10 percent of the negative specimens, which were selected randomly, were sent for quality assurance to the AIDS/STI Laboratory of the Integrated Laboratory Unit of NCCD, and the control tests used diagnostic test kits (RPR, TPHA tests were used to detect Treponema Pallidum antibodes, and immunochromatographic tests were used to detect HIV infection) manufactured by the same company.

2.7 Training for Survey Teams

Prior to launch of the survey, the survey teams completed 3 types of trainings as follows:

1. Training on methodology of collecting data the survey of FSWs
2. Training on methodology of collecting data for the survey of MSM
3. Training on methodology of collecting data for the survey of students aged 15-24 years

The training covered topics such as the survey goal, objectives, main methods, selection of target groups and collection of data from them, interview methodology and confidentiality. Furthermore, trainings were conducted on respondent driven sampling method, time-location sampling method and mapping exercise.

2.8. Data Management and Analysis

Internet-based database was created using the data of the survey participant registration and the questionnaire survey. The database was then converted into MS Office Excel format file to create a data file pool. After being cleaned, monitored and prepared, the data files are converted for the STATA software and statistically analyzed.

In the statistical analysis of the data files, the prevalence rate was determined through correlating independent variables (HIV and syphilis infection) of the respondents to dependent variables, with 95 percent confidence interval (CI).

To assess the STI, HIV and AIDS knowledge and attitude, sexual behaviors, and the dynamics in KPs, the frequency, means and proportions of these indicators were calculated with descriptive statistics method.

THREE. SURVEY FINDINGS

3.1 General Information on Demographics of the Key Populations

3.1.1 Characteristics of the Survey Populations

As representatives of KPs at risk of contracting STIs and HIV, 458 FSWs and 261 MSM were surveyed. Selected demographic characteristics of these population groups are shown in Table 3.1. Average age of the surveyed FSWs and MSM was 30.8 years and 28 years respectively. Among the FSWs, 50 percent were 24-36 years old and 50 percent of MSM were 21-35 years old. 78 percent of FSWs were unmarried or had no cohabiting partner, while 59.8 percent of MSM were unmarried or had no cohabiting partner. Compared to SS 2014, the average age of KPs was younger by 0.8 years for FSWs and 2.4 years for MSM (Table 3.1).

Table 3.1 Selected Demographic Characteristics of KPs

Selected demographic characteristics	KP groups at risk of contracting HIV infection			
	FSWs		MSM	
	Crude	Adjusted (95% CI)	Crude	Adjusted (95% CI)
Age groups				
15-24	25.2	28.6 (26.4-30.8)	51.0	51.4 (48.8-54.0)
25-34	45.7	53.0 (50.6-55.4)	23.4	23.6 (21.4-25.8)
35-44	18.9	12.4 (10.8-14.0)	18.0	18.1 (16.1-20.1)
45 and above	9.3	6.0 (4.9-7.1)	6.9	6.9 (5.6-8.2)
Average age / median age	30.8/29.0	29.2/28.0	28/24	28/24
Marital status				
Married	9.8	11.4 (9.9-12.9)	6.9	6.9 (5.6-8.2)
Unmarried	44.1	48.5 (46.1-50.9)	53.3	53.3 (50.7-55.9)
Has a cohabiting partner	11.1	10.6 (9.1-12.1)	33.3	33.3 (30.9-35.7)
Widowed	4.6	3.1 (2.3-3.9)	1.1	1.1 (0.6-1.6)
Divorced	29.3	26.0 (23.9-28.1)	5.4	5.4 (4.2-6.6)
Not answering	1.1	0.4 (0.1-0.7)	0.0	0.0
Total	**100.0**	**100.0**	**100**	**100.0**
Number of respondents	**458.0**	**1660.0**	**261**	**1464.0**

16.2 percent of FSWs had secondary or higher level education, which is 3.4 times lower than MSM (54.8%). Compared to SS 2014, this indicator has increased by 2.6 and 5.4 points for FSWs and MSM respectively.

Percentage of FSWs and MSM with complete and incomplete secondary education decreased by 5.4 and 5.0 percentage points respectively, as percentage of FSWs and MSM with technical, vocational and higher education increased.

Percentage of FSWs who reported having primary or no education was 10.1, which is 2.9 percentage points higher than the result of SS 2014 (Table 3.2).

Table 3.2 Selected Socio-Economic Characteristics of KPs

Selected socio-economic characteristics	KP groups at risk of contracting HIV infection			
	FSW		MSM	
	Crude	Adjusted (95% CI)	Crude	Adjusted (95% CI)
Education				
None	3.1	1.6 (1.0-2.2)	0.0	0.0
Primary	7.0	3.5 (2.6-4.4)	0.0	0.0
Incomplete secondary	17.2	12.0 (10.4-13.6)	2.7	2.7 (1.9-3.5)
Complete secondary	56.6	62.9 (60.6-65.2)	42.5	42.5 (40.0-45.0)
Technical, vocational/technical secondary	4.6	3.6 (2.7-4.5)	5.0	5.0 (3.9-6.1)
University	11.6	16.4 (14.6-18.2)	49.8	49.8 (47.2-52.4)
Employment status				
Unemlpoyed	76.6	76.3 (74.3-78.3)	14.6	14.6 (12.8-16.4)
Employed	11.4	12.1 (10.5-13.7)	35.6	35.6 (33.1-38.1)
Self-employed	6.3	6.8 (5.6-8.0)	20.3	20.3 (18.2-22.4)
Student	4.4	4.0 (3.1-4.9)	27.6	27.6 (25.3-29.9)
Not answering	0.4	0.5 (0.2-0.8)	0.4	0.4 (0.1-0.7)
Others	0.9	0.3 (0.0-0.6)	1.5	1.5 (0.9-2.1)
Total	**100**	**100**	**100**	**100**
Number of respondents	**458**	**1660**	**261**	**1464**

When surveying the employment status of KPs, 76.6 percent of FSWs reported having no job other than sex work, while 18.2 percent reported having any other job or being self-employed and 4.4 percent reported being a student.

For MSM, 35.6 percent reported having a job, 20.3 percent reported being self-emlpoyed, 14.6 percent unemployed and 27.6 percent reported being a student, which was higher than FSWs.

Compared to SS 2014, percentage of KPs' employment and self-emlpoyment was lower by 2.8 and 2.2 percentage points for FSWs and MSM respectively. Proportion of students was lower by 5.4 percentage points for FSWs, but higher by 0.5 percentage points for MSM (Table 3.2).

3.1.2 Prevalence of Syphilis and HIV

A total of 458 FSWs and 261 MSM were tested for syphilis and HIV. Among the tested, 24.5 percent of FSWs and 9.2 percent of MSM were detected having syphilis infection (Table 3.3).

Table 3.3 Prevalence of syphilis, by KP groups, 2017

KP groups	Number of respondents tested	Number of cases detected	Syphilis prevalence % (95% CI)	
			Crude	Adjusted
FSWs	458	112	24.5%	23.6% (21.6-25.6)
MSM	261	24	9.2%	9.2% (7.7%-10.7%)

Compared to SS 2014 results, the prevalence of syphilis was lower by 5.2 percentage points for FSWs, but higher by 2.1 percentage points for MSM (Table 3.4).

Table 3.4 Prevalence of syphilis, by KP groups, by SS years

KP groups	Years of surveillance survey					
	2005	2007	2009	2011	2014	2017
FSWs		-	18.3% (15.7-20.9)	27.5% (24.3-30.7)	29.7% (26.3-33.1)	24.5% Adjusted 23.6% (21.6-25.6)
MSM	22.0% (10.5-33.5)	11.0% (5.4-16.7)	5.4% (1.8-9.0)	4.1% (1.3-6.9) Adjusted 3.4% (1.7-6.7)	7.1% (3.9-10.3) Adjusted 6.4% (1.2-11.6)	9.2% (5.7%-12.7%) Adjusted 9.2% (7.7%-10.7%)

The prevalence of syphilis among MSM was the highest or 22 percent in 2005 and decreased to 4.1 percent in 2011. However, the prevalence increased to 7.1 percent in 2014 and 9.2 percent in 2017. The prevalence of syphilis among FSWs was 18.3 percent in 2009 and increased to 29.7 percent in 2014, but decreased to 24.5 percent in 2017 (Table 3.4).

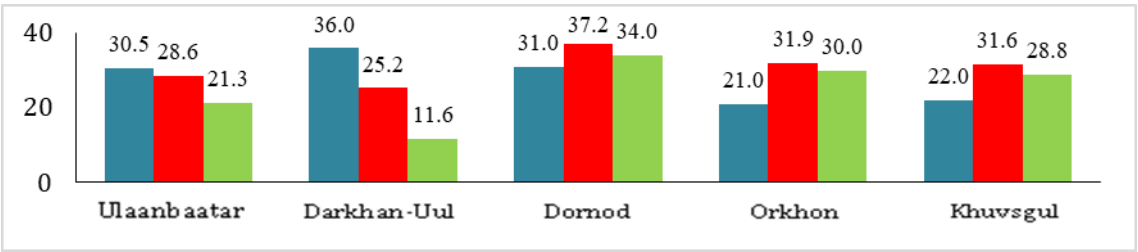
Comparison of the prevalence of syphilis by survey locations revealed that the highest rate (34.0%) of infection was detected among the surveyed FSWs in Dornod aimag, while the lowest (11.6%) was in Darkhan-Uul aimag. The high prevalence of syphilis among FSWs in Dornod aimag was reported by the surveys of 2011 and 2014 as well. Compared to SS 2014, the prevalence of syphilis among FSWs decreased in 2017 in all locations of the survey.

Table 3.5 Prevalence of syphilis, by survey scope, by percentage of FSWs

FSWs' survey scope	Surveillance survey		
	2011	2014	2017
FSWs (in all survey locations)	27.5%	29.7%	24.5%
FSWs, Ulaanbaatar, Darkhan-Uul	31.8%	27.7%	18.1%
FSWs, Ulaanbaatar	30.5%	28.6%	21.3%
FSWs, Darkhan-Uul	36.0%	25.2%	11.6%
FSWs, Dornod, Orkhon, Khuvsgul	24.7%	33.7%	30.6%
FSWs, Dornod	31.0%	37.2%	34.0%
FSWs, Orkhon	21.0%	31.9%	30.0%
FSWs, Khuvsgul	22.0%	31.6%	28.8%

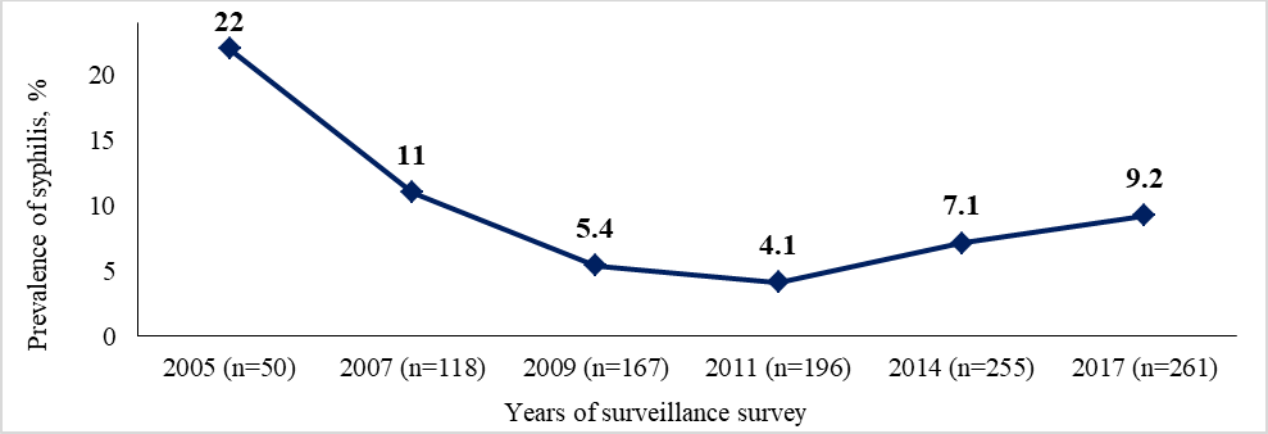
The prevalence of syphilis dropped the most or by 13.6 percentage points in Darkhan-Uul aimag, with decreases of 7.3 percentage points in Ulaanbaatar city, 3.2 percentage points in Dornod aimag, 2.9 percentage points in Khuvsgul and 1.9 percentage points in Orkhon aimag respectively. The prevalence of syphilis among FSWs in the aimags is shown in Figure 3.1.

Figure 3.1 Prevalence of syphilis among FSWs, by survey aimags



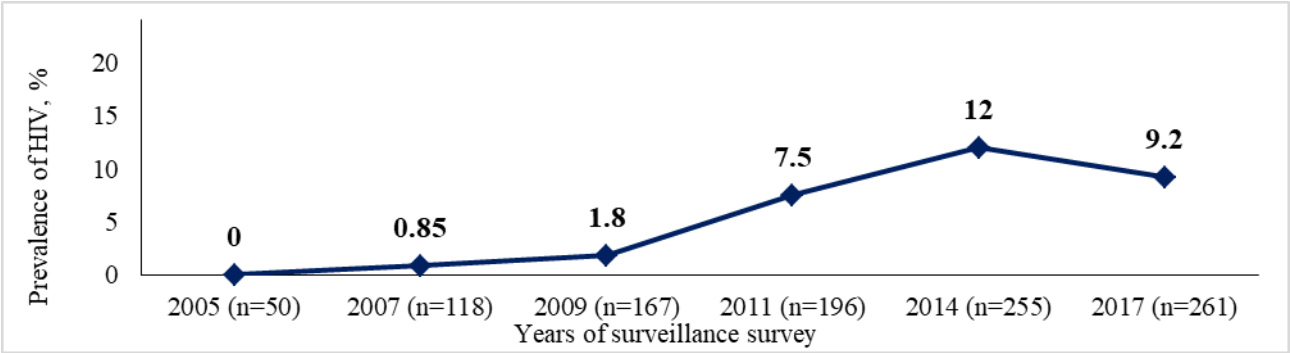
The prevalence of syphilis among MSM that had a tendency to decrease between 2005 and 2011 increased in years 2014 and 2017. The prevalence of syphilis, which was 7.1 percent in 2014, increased to 9.2 percent in 2017 (Figure 3.2).

Figure 3.2 Trends in syphilis prevalence among MSM, by SS years



While no case of HIV infection was detected among FSWs, 9.2 percent of MSM were HIV positive. Trends in HIV prevalence among MSM by SS years are shown in Figure 3.3. No case of HIV infection was detected in 2005. In 2007, HIV prevalence was 0.85 percent, but in 2014 this increased to 12 percent. In SS 2017, HIV infection was detected in 9.2 percent (with 95% CI: 8.7-9.7) of the tested and the adjusted prevalence rate was 9.1 percent (with 95% CI: 8.4-9.7), which was 2.8 percentage points lower than the previous SS.

Figure 3.3 Trends in HIV prevalence among MSM, by SS years



3.1.3 Knowledge of HIV Infection

The surveyed KPs' knowledge of HIV infection is shown in Table 3.6.

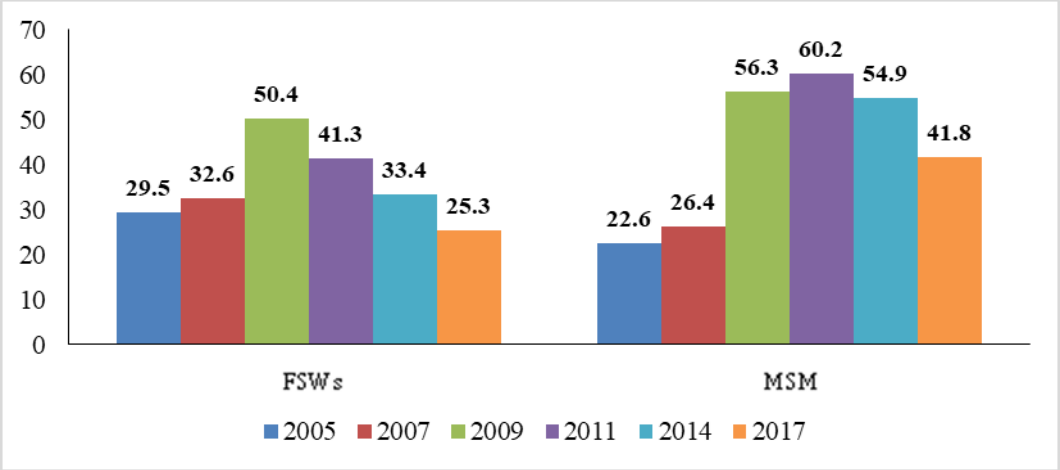
Table 3.6 Knowledge of HIV and AIDS

Knowledge of HIV and AIDS	KP groups at risk of contracting HIV infection			
	FSWs		MSM	
	2017	Adjusted (95% CI)	2017	Adjusted (95% CI)
Have heard of HIV and AIDS	**97.8**	**98.0 (97.3-98.7)**	**95.4**	**95.4 (94.3-96.5)**
Having one faithful sexual partner can reduce risks of HIV transmission	84.1	79.9 (78.0-81.8)	81.2	81.2 (79.2-83.2)
Using condoms every time you have sex can prevent HIV infection	91.1	89.5 (88.0-91.0)	91.6	91.6 (90.1-93.0)
Percentage of people who know the ways of preventing HIV transmission	**79.9**	**92.8 (91.6-94.0)**	**80.1**	**80.0 (78.0-82.0)**

A healthy-looking person can have HIV	70.5	74.4 (72.3-76.5)	75.1	75.1 (72.9-77.3)
HIV cannot be transmitted through mosquito bites	46.9	40.2 (37.8-42.6)	61.3	61.3 (58.8-63.8)
HIV cannot be transmitted through shaking hands and sharing meals with an HIV infected person	71.7	72.7 (70.6-74.8)	88.5	88.5 (86.9-90.1)
Percentage of people who have correct knowledge about ways of HIV transmission	**39.5**	**48.8 (46.4-51.2)**	**53.2**	**53.2 (50.6-55.8)**
Percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission	**25.3**		**55.6**	**55.6 (53.1-58.1)**

Percentage of FSWs who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission was 25.3 percent, which is a decrease by 8.1 percentage points, and for MSM this was 41.8 percent showing an increase of 0.7 percentage points compared to the results of SS 2014 (Figure 3.4).

Figure 3.4 Percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission



The findings of the assessment of HIV prevention knowledge among FSWs by locations are shown in the table below. Percentage of FSWs who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission was 21.3 percent in Ulaanbaatar, 50.0 percent in Darkhan-Uul aimag, 24.5 percent in Dornod aimag, 22.4 percent in Khuvsgul aimag and 16.1 percent in Orkhon aimag.

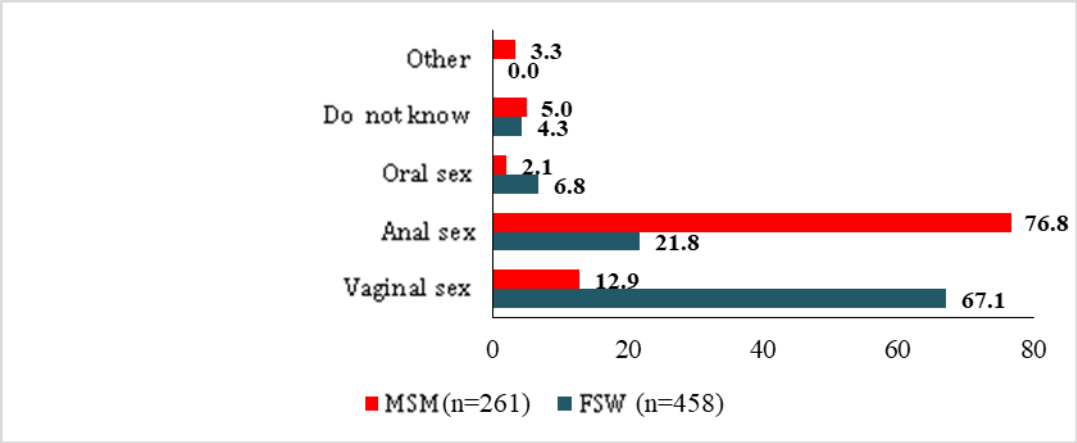
Table 3.7 HIV and AIDS knowledge among FSWs, by survey locations

HIV and AIDS knowledge	Locations of Survey					Average
	Darkhan-Uul	Dornod	Khusvgul	Orkhon	Ulaanbaatar	
Have heard of HIV and AIDS	**100**	**97,9**	**97.4**	**96.4**	**98.1**	**97.8**
Having one faithful sexual partner can reduce risks of HIV transmission	97.1	97.9	80.3	84.7	77.3	84.1
Using condoms every time you have sex can prevent HIV infection	97.1	97.9	92.11	87.5	88.4	91.1
Percentage of people who know the ways of preventing HIV transmission	95.7%	98.0%	77.6%	82.1%	70.5%	**79.9**
A healthy-looking person can have HIV	64.3	44.9	81.6	62.5	76.8	70.5
HIV cannot be transmitted through mosquito bites	81.4	61.2	39.5	41.1	36.2	46.9
HIV cannot be transmitted through shaking hands and sharing meals with an HIV infected person	95.7	77.5	53.9	53.6	73.9	71.7

Percentage of people who have correct knowledge about ways of HIV transmission	50.0%	24.5%	27.6%	16.1%	25.6%	**39.5**
Percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission	50.0%	24.5%	22.4%	16.1%	21.3%	**25.3**

Majority of the surveyed FSWs (61.7%) responded vaginal sex is the riskiest type of sexual intercourse for HIV transmission, while majority of MSM (76.6%) identified anal sex as the riskiest type (Figure 3.5).

Figure 3.5 Identification of the riskiest type of sexual intercourse for HIV transmission



3.1.4 Sexual Behaviors of KPs

A. Sexual behaviors of FSWs

Average age of sexual debut of the surveyed FSWs was 18.2, which is the same as SS 2014 findings. Average age of sex work initiation was 24.3 in 2014 and this was changed to 25.1 in 2017 showing an increase of 0.8 years.

Table 3.8 Sexual behaviors of FSWs, by percentages, by SS years

Indicators	Surveillance survey			Adjusted (95% CI)
	2011	2014	2017	
Age of sexual debut				
Below 16	6.9	7.5	4.7	12.9 (11.3-14.5)
16-20	79.2	80.2	75.1	77.4 (75.4-79.4)
20 and above	13.9	12.2	20.2	9.7 (8.3-11.1)
Average age of sexual debut	*18*	*18.1*	*18.2*	*18.3*
Average age of sex work initiation	-	*24.3*	*25.1*	*24.8*
Total	**100**	**100**	**100**	**100**
Number of respondents	**753**	**743**	**450**	**1660**
Number of sexual partners in the last week				
Less than 4	58.6	61.2	51.5	50.3 (47.9-52.7)
4 or more	41.4	38.8	48.5	49.7 (47.3-52.1)
Average number of clients	*4*	*3.9*	*5*	*7*
Total	**100**	**100**	**100**	**100**
Number of respondents	**720**	**686**	**394**	**1358**

Number of sexual partners on the last day of selling sex				
Average number of clients	*2*	*1.5*	*2*	*2*
Number of respondents	**720**	**708**	**424**	**1457**
Income earned from selling sex, weekly average, in MNT				
Less than 50,000	39.7	17.6	11.9	6.7 (5.5-7.9)
50,001-150,000	43.6	40.4	31.7	27 (24.9-29.1)
More than 150,000	16.7	42.1	56.5	66.3 (64.0-68.6)
Average income	-	*181,200*	*260,540*	*324,725*
Total	**100**	**100**	**100**	**100**
Number of respondents	**159**	**709**	**379**	**1210**
Number of months spent selling sex in the last 12 months				
Mean, median, mode	-	*8.2; 9; 12*	*7.4; 7; 12*	*11; 6; 12*
Percentage of FSWs with casual non-paying sexual partners	**42.2%**	**36.10%**	**49.60%**	**40.5 (38.1-42.9)**
Percentage of FSWs who engaged in sex work abroad	**-**	**10.80%**	**8.3**	**9.3 (7.9-10.7)**

Average number of clients in the last week was 5, which is higher than SS 2014 findings by 1.1 clients. Moreover, percentage of FSWs who had more than 4 clients in the last week was 48.5, which is an increase of 9.7 percentage points since SS 2014. Average number of clients on the last day of selling sex was 2, which is an increase of 0.5 clients since SS 2014.

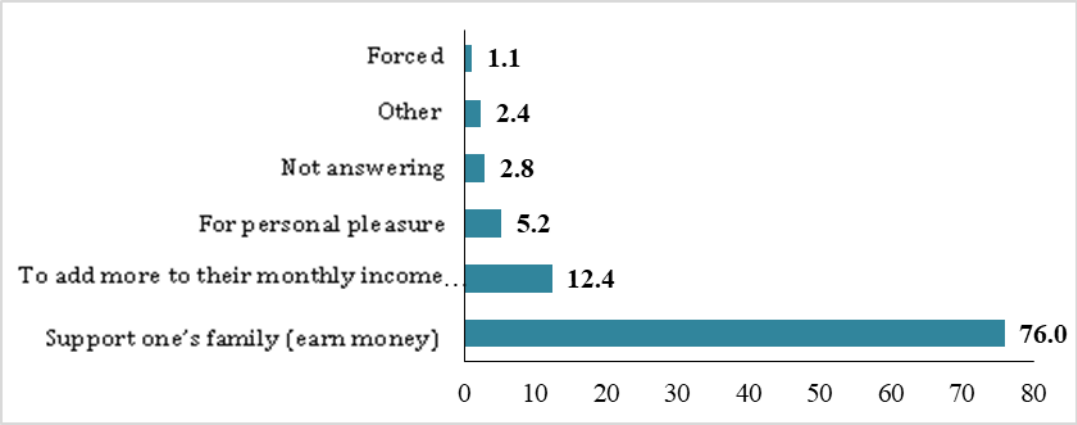
In the last 12 months, FSWs spent 7.4 months in average on selling sex. This is 0.8 months less than SS 2014 findings.

FSWs on average earned MNT260,000 a week by selling sex and this reflects an increase of MNT 79,000 since 2014. Percentage of FSWs earning more than MNT150,000 a week increased from 42.1 to 56.5 between 2014 and 2017. Percentage of FSWs with non-paying casual sexual partners was 49.6, which is an increase of 13.5 percentage points since SS 2014. Proportion of FSWs who engaged in sex work abroad was 8.3 percent, which is an increase of 2.5 percentage points since the previous survey findings.

Detailed information on sexual behaviors of the surveyed FSWs is shown in Table 3.8.

Most of the FSWs (76%) responded that they engaged in sex work to support their families. Moreover, 12.4 percent of FSWs responded that they engaged in sex work in order to add more to their monthly income. The proportion of FSWs who engaged in sex work to earn money decreased from 93.2 percent to 88.4 percent between 2014 and 2017 (Figure 3.6).

Figure 3.6 Main reasons of engaging in sex work, by percentage of FSWs, 2017



Among FSWs, 40 percent responded that they find clients through their friends' network and this response had the highest rate among other ways. Moreover, common ways to solicit clients were over the phone (34.9%), in bars and karaokes (25.3%), in massage parlours (26.9%), through intermediary (17.9%) and in saunas (16.6%).

Table 3.9 FSWs' ways of soliciting clients and venues of sex work, by percentage, 2017

Locations of soliciting clients	Percent	Venues of sex work	Percent
Bars and karaokes	25.3	Bars and karaokes	8.1
Hotels	16.2	Hotels	38.4
Motels	14.0	Motels	39.5
Over the phone	34.9	Saunas	14.6
Saunas	16.6	Massage parlours	28.8
Massage parlours	26.9	Intermediary who finds clients	0.4
Over internet and social network	5.2		
Through friends' network	40.0	Client's home	9.0
Intermediary who finds customers	17.9	Not answering	1.7
On public events	4.4	Others	0.0
Not answering	9.2		
Others	8.3		
Number of respondendts	**458**	**Number of respondents**	**458**

According to the survey findings, the most common venue of sex work was identified as hotels (38.4%), motels (39.5%), massage parlours (28.8%) and saunas (14.6%) (Table 3.9).

Condom use by FSWs

Percentage of FSWs who used condoms at last paid sexual intercourse was 84.3, which is an increase of 1 percentage point since the previous survey. Percentage of FSWs who used condoms within the last 12 months of having paid sexual intercourse was 51.3, which shows a decrease of 5.6 points as compared to SS 2014. Percentage of FSWs who used condom for the last 12 months of having unpaid casual sex was 31.7, which shows an increase of 6.7 points compared to SS 2014. However, percentage of FSWs who used condoms consistently with regular sexual partners was 15.6 percent, which implies a decrease of 1.6 points compared to the previous survey (Table 3.9).

Table 3.10 Condom use by FSWs, by SS years

Indicators	Surveillance survey

	2007	2009	2011	2014	2017	
					Average	Adjusted (95% CI)
Condom use at last sexual intercourse						
Condom use at last sexual intercourse with paying clients, %	93.4	90.3	81.2	83.3	84.3	85.1 (83.4-86.8)
Consistent condom use in the last 12 months						
Consistent condom use with paying clients within the last 12 months, %		61.1	49.1	56.9	51.3	58.8 (56.4-61.2)
Consistent condom use with non-paying casual sexual partners within the last 12 months, %	20.7	33.5	25.4	25.0	31.7	28.0 (25.8-30.2)
Consistent condom use with regular sexual partners within the last 12 months, %	4.4	20.8	6.8	17.2	15.6	10.7 (9.2-12.2)

The use of condoms in FSWs varied depending on the location of the survey. The highest rate of condom use during the last paid sexual intercourse was 97.1 percent reported in Darkhan-Uul aimag. The lowest rate of 68.4 percent was reported in Khuvsgul aimag.

Percentage of FSWs who used condoms for every paid sexual intercourse within the last 12 months was 69.4 in Dornod aimag and 63.7 in Ulaanbaatar city. These two locations had the highest rates in comparison to other locations (25.7% in Darkhan-Uul aimag, 32.9% in Khuvsgul aimag and 46.4% in Orkhon aimag).

Table 3.11 Condom use by FSWs, by locations

Indicators	Locations of the survey					
	Darkhan-Uul	Dornod	Khuvsgul	Orkhon	Ulaanbaatar	Average
Condom use at last sexual intercourse						
Condom use at last sexual intercourse with paying clients, %	97.1	85.7	68.4	82.14	85.9	84.3
Consistent condom use within the last 12 months						
Consistent condom use with paying clients within the last 12 months, %	25.7	69.4	32.9	46.4	63.7	51.3
Consistent condom use with regular sexual partners within the last 12 months, %	20.0	51.0	11.8	10.7	8.7	15.6

Majority or 66.7 percent of FSWs responded that the reason for engaging in unprotected sex is they do not like to use condoms. Furthermore, 33.3 percent responded that their sexual partners refused to use condoms, 26.7 percent responded feeling awkward or ashamed of buying condoms, 20.0 percent responded that they trusted their sexual partners, and 13.3 percent responded that they did not use condoms because they were drunk, all of which were the most common reasons for not using condoms (Table 3.10).

Table 3.12 Reasons for engaging in unprotected sex among FSWs, by percentage, 2017

Reasons for having unprotected sexual intercourse	Percent
I do not like to use condoms	66.7
There was no condom at the time	6.7
I feel ashamed to buy condoms	26.7

I do not trust condoms	6.7
Sexual partners refuse to use condoms	33.3
I trust my sexual partner	20.0
I was drunk	13.3
Clients pay more for having sex without using condoms	6.7
I use other forms of contraception	6.7
Sexual partners/clients might think I have a disease	6.7
Number of respondents	**15**

STI symptoms and treatment among FSWs

Among FSWs, 41.9 percent reported experiencing STI symptoms during the last 12 months and this was 12 percentage points higher than in 2014. Moreover, 57.8 percent of FSWs reported seeking medical treatment due to the appearance of STI symptoms (Table 3.11).

Table 3.13 STI symptoms and treatment, by SS years

Indicators	Surveillance survey						
						2017	
	2005	2007	2009	2011	2014	Average	Adjusted (95% CI)
FSWs who had STI symptoms in the last 12 months, %	37.1	27.8	38.5	-	29.9	41.9	37.5 (35.2-39.8)
FSWs who had STI symptoms and initiated treatment in public and/or private clinics, %	41.6	68.3	86.9	50	88.1	57.8	47.9 (45.5-50.3)

B. Sexual behaviors of MSM

Average age of sexual debut of the surveyed MSM was 17.6, and average age at first anal sex with a man was 19. Compared to SS 2014, average age of sexual debut was the same, but average age at first sexual intercourse with a man decreased by 2.7 years.

While 49.9 percent of MSM reported having their first sexual intercourse with a man, the proportion of MSM who reported having their first sexual intercourse with a woman decreased by 9 percentage points as compared to 2014 survey.

Of the surveyed MSM, 63.2 percent identified their sexual orientation as gay and had sex only with men and this implies an increase of 13.8 percentage points compared to 2014. The proportion of MSM who identified their sexual orientation as bisexual decreased by 16.8 percentage points compared to SS 2014.

The proportion MSM who responded that they willingly made a decision to engage in sex for the first time was 89.7 percent, reflecting a decrease of 2.8 percentage points compared to SS 2014, while the proportion of MSM who was drunk when he had sex for the first time was 5.4 percent, which implies an increase of 5 percentage points compared to the previous study (Table 3.14).

Table 3. 14 Sexual behaviors of MSM, by percentages, by SS years

Indicators	Surveillance survey		
	2014	2017	
	Crude	Crude	Adjusted
Age of sexual debut			

Average age of sexual debut	17.7	17.6	17.6
Average age at first anal sex with a man	21.7	19	19.5
Sexual orientation / identity			
Gay (attracted to men only)	49.4	63.2	63.2 (60.7-65.7)
Bisexual (attracted to both men and women)	47.1	30.3	30.3 (27.9-32.7)
Heterosexual (attracted to women)		0.4	0.4 (0.08-0.7)
Transgender (I am a woman)	2.7	2.3	2.3 (1.5-3.1)
Not answering		.4	0.4 (0.08-0.7)
Do not know	0.8	3.4	3.4 (2.5-4.3)
Others		0.0	0.0
Gender of the first sexual partner			
Male	40.8	49.4	49.4 (46.8-52.0)
Female	59.2	50.2	50.2 (47.6-52.7)
Decision to engage in sex for the first time			
Willingly made a decision	92.5	89.7	89.7 (88.1-91.3)
Was forced or raped	5.1	3.1	3.1 (2.2-4.0)
Was drunk	0.4	5.4	5.4 (4.2-6.6)
Not answering	2	1.9	1.9 (1.2-2.6)
Others	0	0.0	0.0
Predominant mode of sexual intercourse			
Active	31.1	35.2	35.2 (32.8-37.6)
Passive	22.8	20.7	20.7 (18.6-22.8)
Universal	42.5	40.2	40.2 (37.7-42.7)
Not answering	3.5	3.8	3.8 (2.8-4.8)
Total	**100**	**100**	**100**
Number of respondents	**261**	**261**	**1464**

In 2014 survey, 35.5 percent of the surveyed MSM reported having sex with foreigners, whereas in 2017 this proportion increased to 41 percent. In the last 12 months, 44.4 percent of the surveyed MSM reported having casual sex with male sexual partners, while 43.3 percent reported having casual sex with female sexual partners (Table 3.15)

Table 3.15 Risky sexual behaviors of MSM, by percentage, years 2014 and 2017

Indicators	Years of SS		
	2014	2017	
		Crude	Adjusted
Percentage of MSM who had sexual intercourse with foreigners	35.3	41.0	41.0 (38.5-43.5)
Percentage of MSM who had casual sex with men in the last 12 months	54.1	44.4	44.4 (41.9-46.9)
Percentage of MSM who received money in exchange for sex with men	9.4	4.2	0.4 (0.1-0.7)
Percentage of MSM who had sex with women in the last 12 months	31.4	29.1	29.1 (26.8-31.4)
Percentage of MSM who had casual sex with women in the last 12 months	46.3	43.4	43.4 (40.9-45.9)
Percentage of MSM who had sex with FSWs in the last 12 months	4.0	1.3	1.4 (0.8-2.0)

Among the surveyed MSM, 30 percent (n=79) identified their sexual orientation as bisexual and 29 percent (n=76) reported having sex with women in the last 12 months. While 42.1 percent of the surveyed MSM who had sex with women reported having 2 or more female sexual partners, 57.9 percent reported having 1 female sexual partner.

Of the surveyed MSM, 94 percent had sex with men in the last 12 months. Among them, 52.4 percent had 2-4 sexual partners, while 19.5 percent had more than 5 sexual partners. On average, the surveyed MSM had 4 male sexual partners in the last 12 months.

Furthermore, 4.5 percent of MSM reported having paid sex in the last 12 months and 3.1 sexual partners on average (Table 3.16).

Table 3.16 Number of sexual partners of MSM, by SS years

Indicators	Surveillance survey				Adjusted % 2017
	2014		2017		
	Percent	Number	Percent	Number	
Number of female sexual partners in the last 12 months					
1	62,5	50	57.9%	44	57.9 (53.2-62.6)
2 or more	37.6	30	42.1%	32	42.1 (37.4-46.8)
Mean/ Median	*2.1 / 1.0*		*2.6/1.0*		*2.6/1.0*
Total	**71**	**100**	**100**	**76**	
Number of male sexual partners in the last 12 months					
1	32.7	82	28.0	69	28.0 (25.6-30.4)
2-4	49.0	123	52.4	129	52.4 (49.8-55.0)
5 or more	18.3	46	19.5	48	19.5 (17.4-21.6)
Mean / Median	*3.4/2.0*		*4.0/2.0*		*4.0/2.0*
Total	**100**	**251**	**100**	**246**	**1380**
Number of paying male sexual partners in the last 12 months					
1-3		8	72.7	8	72.8 (61.7-83.9)
4 or more		5	27.3	3	27.2 (16.1-38.3)
Mean / Median	*5.6 / 3.0*		*3.1/2.0*		*3.1/2.0*
Total		**13**	**100**	**11**	**62**

Condom use by MSMOf the surveyed MSM 46 percent reported using condoms at first sexual intercourse and this implies an increase of 12.5 percentage points as compared to 2014 survey.

Proportion of MSM who used condoms at last sex with men was 78.5 percent, and at last sex with women was 63.6 percent, which shows an increase of 1.4-1.9 percentage points compared to the previous survey.

Proportion of MSM who used condoms consistently every time they had sexual intercourse was 55.9 percent, which implies an increase of 11 percentage points compared to 2014 survey. Moreover, proportion of MSM who used condoms every time they had sex with men was 15.3 percentage points higher than the findings of 2014 survey (Table 3.17).

Table 3.17 Condom use by MSM

Indicators	Responses		
	Percentage	Number	Adjusted %
Condom use at first sex	46.0	120	46.0 (43.4-48.6)
Condom use at last sex			
Condom use at last sex with a man	78.5	205	78.5 (76.4-80.6)
Condom use at last paid sex	95.8	250	95.8 (94.8-96.8)
Condom use at last casual sex with a woman	63.6	21	63.6 (61.1-66.1)
Condom use at last sex with FSW	100	1	100

Condom use in the last 12 months			
Percentage of MSM who used condoms every time they had sex	55.9	146	55.9 (53.4-58.4)
Percentage of MSM who used condoms every time they had sex with men in the last 12 months	60.2	157	60.2 (55.7-62.7)
Percentage of MSM who used condoms every time they had paid sex in the last 12 months	1.5	4	1.5 (0.9-2.1)

Predominantly, "forgot to use condoms" (57.9%) and "did not find condoms at the time" (23.7%) were the reasons for engaging in unprotected sex. Furthermore, "did not have time to buy condoms", "condoms are expensive", "feel ashamed to buy condoms" and "use another method of preventing STIs and HIV" were the reasons reported by MSM for engaging in unprotected sex (Table 3.18).

Table 3.18 Reasons for engaging in unprotected sex among MSM

Reasons for engaging in unprotected sex	Percent
Forgot to use condoms	57.9%
I did not find condoms at the time	23.7%
I did not have time to buy condoms	9.2%
Condoms are expensive	3.9%
I feel awkward and ashamed to buy condoms	2.6%
I use another method of preventing STIs and HIV	3.9%
Number of respondents	**76**

Status of experiencing STI symptoms and initiating treatment in MSM

Of the surveyed MSM, 8.4 percent had STI symptoms in the last 12 months and 54.5 percent of them reported initiating treatment in public or private health facilities (Table 3.19).

Table 3.19 STI symptoms and treatment, by percentage of MSM, by SS years

Indicators	2014	2014 Adjusted %	2017 (n=261)	2017 Adjusted %
Percentage of MSM who had STI symptoms in the last 12 months	9.8	7.6	8.4%	8.4% (7.0-9.8)
Percentage of MSM with STI symptoms who initiated treatment in public or private health facilities	84.5	-	54.5%	27.6% (16.5-38.7)

3.1.5 Use of alcohol and drugs among Key Populations

The table below shows that 50.3 percent of FSWs reported using alcohol more than once in a week and this reflects an increase of 10.4 percentage points compared to SS 2014. Proportion of FSWs who do not use alcohol at all was 16.6 percent in 2014, but this decreased to 6.7 percent in 2017.

Table 3.20 Use of alcohol and drugs, by KP groups

Bad habits	KP groups at risk of contracting HIV infection

	FSW		MSM	
	%	Number	%	Number
Alcohol consumption				
Daily	3.1	14	0.8	2
Once a week	14.6	66	15.2	39
More than once a week	32.6	147	13.6	35
Once a month	16.9	76	33.9	87
More than once a month	20.4	92	19.8	51
Once or twice a year	5.8	26	8.9	23
None	6.7	30	7.8	20
Total	**100**	**451**	**100**	**257**
Use of alcohol before having sexual intercourse				
Always	7.1	30	2.1	5
Most of the time	15.4	65	5.5	13
Sometimes	36.6	154	22.4	53
Seldom	20.9	88	35.9	85
None	19.7	83	34.2	81
Not answering	0.2	1	0.0	0
Total	**100**	**421**	**100**	**237**
Have ever used drugs				
Yes	3.8	17	16.3	42
No	96.2	430	83.7	215
Total	**100**	**447**	**100**	**257**

Among MSM, 29.6 percent reported consuming alcohol once or more than once a week reflecting an increase of 2.1 percentage points compared to the previous SS. Proportion of MSM who do not use alcohol was 7.8 percent, which was similar to the findings of SS 2014.

When alcohol consumption right before sexual intercourse was studied, 22.5 percent of FSWs and 7.6 percent of MSM reported using alcohol always or most of the time. Moreover, 36.6 percent of FSWs and 22.4 percent of MSM reported using alcohol sometimes. Proportion of MSM and FSWs who do not use alcohol at all before having sexual intercourse was 19.7 percent and 34.2 percent respectively.

When drug use among KPs was analyzed, 16.3 percent of MSM and 3.8 percent of FSWs reported having used some sort of drugs. Drug use among MSM and FSWs has increased by 7.3 and 1.2 percentage points respectively since 2014. Survey findings on alcohol and drug use among at-risk groups is shown in Table 3.18.

Table 3.21 Types and routes of drug use, by KP groups

Drug use	KP groups at risk of contracting HIV infection	
	FSW	MSM
Types of drugs used		
Weed, glue	10	23
Cocaine	-	1
Marijuana	-	5
Gas	-	3
Bong	-	1
Sopor/Methaqualone	-	1
Pill	1	1

Morphine	-	1
Tobaco	-	6
Liquid drug	2	-
White powder	1	-
Routes of drug use		
Snuffing, snorting	11	13
Chewing	1	0
Smoking	5	26
Orally	-	2
Intramuscular injection	-	0
Intravenous infusion	-	1
Others	-	0
Total	**17**	**42**

Cannabis and glue were the most common types of drugs used among FSWs and MSM who use drugs. Furthermore, marijuana, gas, tobaco, bong, sopor, and cocaine are the types of drugs used to get high. Routes of drug use among FSWs were snuffing, snorting, chewing, and smoking, whereas for MSM drugs are used through snuffing, snorting, smoking, orally and intravenously (Table 3.19).

3.1.6 Accessibility and Impacts of STI, HIV and AIDS Prevention Services

Among the surveyed KPs, 84.5 percent (n=387) of FSWs and 94.4 percent (n=235) of MSM reported being tested for HIV before, whereas 80.9 percent of FSWs and 89.8 percent of MSM had HIV testing in the last 12 months. Proportion of MSM and FSWs who were tested for HIV has increased since SS 2014.

Among those who had HIV testing, 71.8 percent of FSWs and 72.5 percent of MSM decided to be tested voluntarily. Since 2014, proportion of people who were voluntarily tested for HIV has decreased by 5.8 and 10.7 percentage points among FSWs and MSM respectively.

Majority or 72.5 percent of the surveyed MSM were tested at MSM community center located in Grand Plaza. While 20.3 percent of MSM were tested at NCCD, remaining proportion were tested at district health centers and private clinics. Among those who were tested in the last 12 months, 90.4 percent (n=387) of FSWs and 98.1 percent (n=207) of MSM reported having received the test results and being aware of their infection status. As a result of this survey, 24 people among MSM were detected to be HIV positive and all of them were aware of their infection status (Table 3.22).

Table 3.22 Percentage of FSWs and MSM who have attended HIV testing services, 2017

Selected indicators	FSWs		FSWs Adjusted % (95% CI)	MSM		MSM Adjusted % (95% CI)
	Percent	Number		Percent	Number	
Have ever been tested for HIV						
Yes	84.5	387.0	86.5 (84.9-88.1)	94.4	235	94.3 (93.1-95.5)
No	15.5	71.0	13.5 (11.9-15.1)	5.6	14	5.7 (4.5-6.90
Total	**100.0**	**458.0**	**100.0**	**100.0**	**249**	**1397**
Had HIV testing in the last 12 months						
Yes	80.9	313.0	80.6 (78.5-82.7)	89.8	211	89.8 (88.2-91.4)
No	19.1	74.0	19.4 (17.3-21.5)	10.2	24	10.2 (8.6-11.8)
Total	**100.0**	**387.0**	**100.0**	**100.0**	**235**	**1318**
Decision to go for testing was:						
Voluntary	71.8	278.0	73.7 (71.3-76.1)	72.5	153	72.6 (70.1-75.1)
Required	14.0	54.0	17.1 (15.1-19.1)	23.2	49	23.3 (20.9-25.7)
Initiated by	14.2	55.0	9.1 (7.6-10.6)	4.3	9	4.2 (3.1-5.3)

service providers						
Total	**100.0**	**387.0**	**100.0**	**100.0**	**211**	
Places where HIV testing was performed in the last 12 months						
NCCD	Na	Na	Na	20.3	43	20.4 (18.1-22.7)
District/ aimag/ soum hospital	Na	Na	Na	3.3	7	3.3 (2.3-4.3)
Private clinic/ laboratory	Na	Na	Na	1.9	4	1.9 (1.1-2.7)
MSM community center at Grand Plaza	Na	Na	Na	72.5	153	72.6 (70.1-75.1)
Others	Na	Na	Na	1.9	4	1.9 (1.1-2.7)
Total	**Na**	**Na**	**Na**	**1.0**	**211**	**1182**
Whether the test results have been collected						
Yes	90.4	350.0	89.6 (88.0-91.2)	98.1	207	98.1 (97.3-98.9)
No	9.6	37.0	10.4 (8.8-12.0)	1.9	4	1.9 (1.1-2.7)
Total	**100.0**	**387.0**	**100.0**	**100.0**	**211**	**1182**
Whether been told that the test result was positive						
Yes	7.5	29.0	7.3 (5.9-8.7)	11.5	24	12.6 (10.7-14.5)
No	92.5	358.0	92.7 (91.3-94.1)	87.9	182	86.9 (85.0-88.8)
Not answering	0.0	0.0	0.0	0.5	1	0.5 (0.1-0.9)
Total	**100.0**	**387.0**	**100.0**	**100.0**	**207**	**1162**

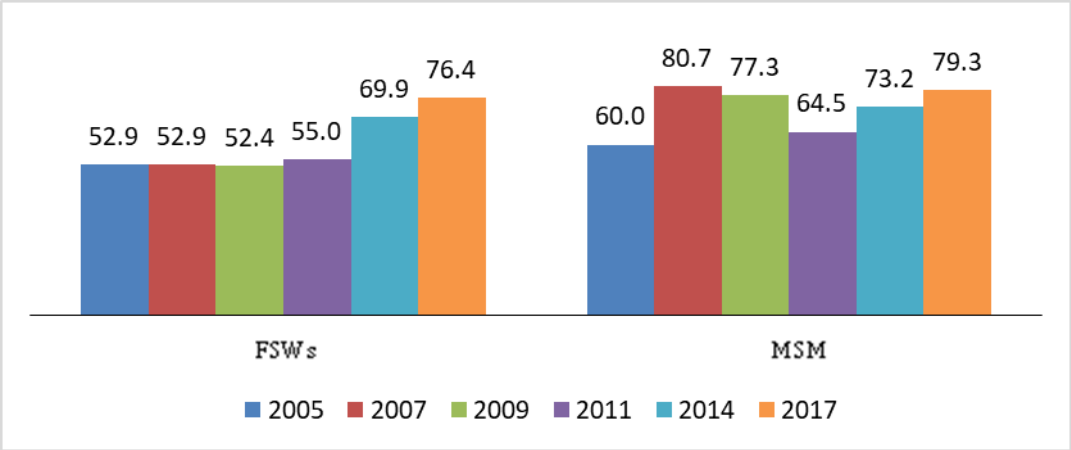
Among the respondents, 76.4 percent of FSWs and 79.3 percent of MSM reported having HIV testing and knowing their infection status. Percentage of KPs who participated in HIV prevention programmes in the last 12 months was 55.2 for FSWs and 51.0 for MSM (Table 3.23). Percentage of accessibility of prevention services for MSM in Ulaanbaatar city and the aimags was estimated on the basis of their primary administrative jurisdiction.

Table 3.23 Accessibility of HIV prevention services for KPs

Accessibility of services	FSWs	MSM
Percentage of KPs who were tested for HIV and knew their test results	**76.4**	**79.3**
Ulaanbaatar	75.9	79.3
Darkhan-Uul	88.4	71.4
Dornod	88.7	100.0
Khuvsgul	73.8	80.0
Orkhon	56.7	87.5
Percentage of KPs who participated in HIV and AIDS prevention programmes in the last 12 months	**55.2**	**51.0**
Ulaanbaatar	44.7	52.1
Darkhan-Uul	75.4	42.9
Dornod	71.6	66.7
Khuvsgul	53.8	40.0
Orkhon	36.6	62.5

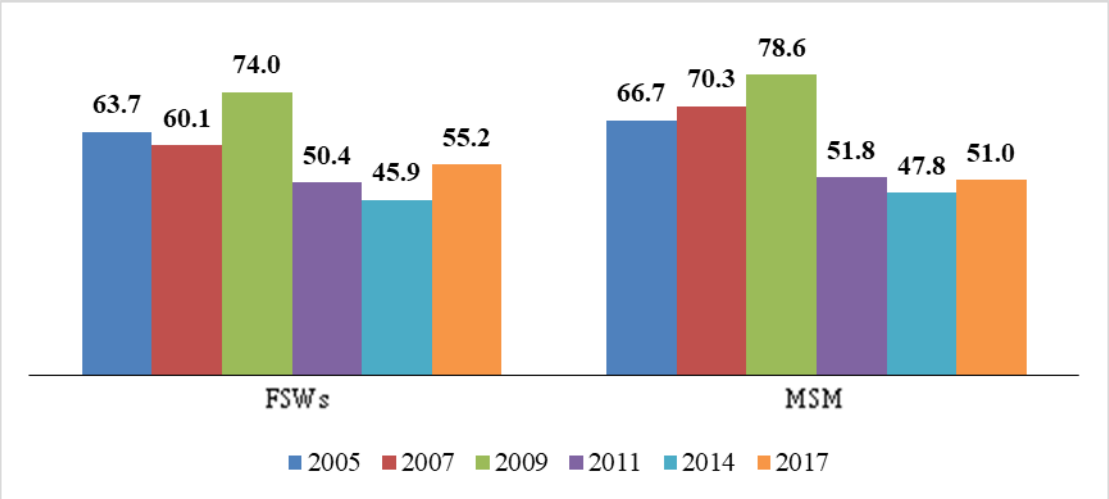
Proportion of FSWs and MSM who know their HIV infection status was found to be increasing since 2011 (Figure 3.7).

Figure 3.7 Percentage of people who were tested for HIV and recieved their test results, by KP groups, by SS years



Of the surveyed KPs, the proportion of people who participated in STIs, HIV and AIDS prevention programmes has increased by 3.2-9.1 percentage points since 2014. According to the findings of SS 2017, percentage of MSM who participated in the prevention programmes was 51, whereas for FSWs this was 55.2 percent (Figure 3.8).

Figure 3.8 Percentage of people who participated in STI, HIV and AIDS prevention programmes in the last 12 months, by KP groups, by SS years



When broken down by types of STIs, HIV and AIDS preventive interventions, the ones that had the highest level of participation of FSWs were voluntary counselling and testing (67.6%), distribution of condoms and lubricants (66%) and training (39.9%). For MSM, training (69.9%) was the most popular type of prevention activity, while other activities had participation at the rate of 3.8%-9% (Table 3.24).

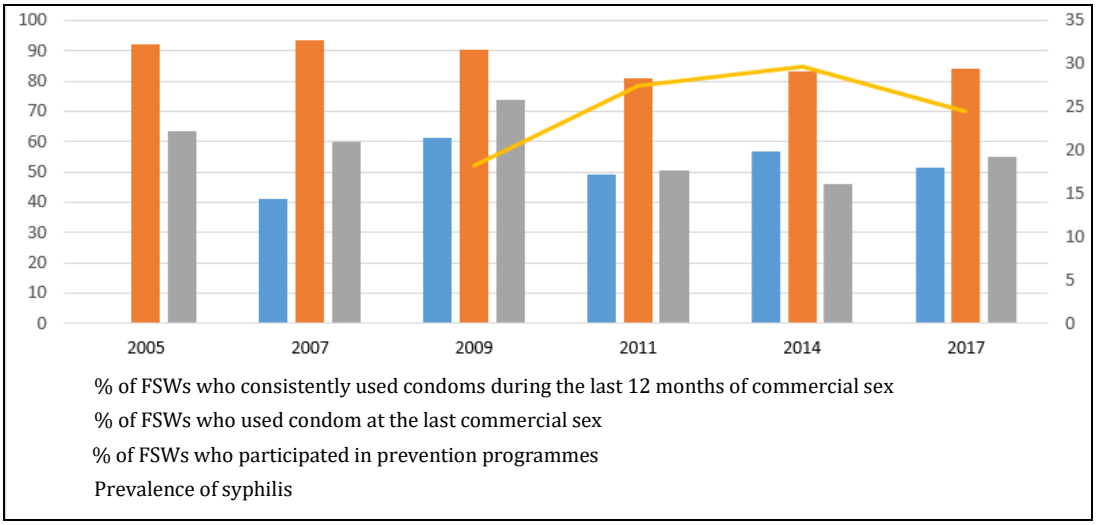
Table 3.24 Areas of preventive interventions, by KP groups, 2017

Selected indicators	KP groups					
	FSWs		FSWs Adjusted % (95% CI)	MSM		MSM Adjusted % (95% CI)
	%	n		%	n	
Types of activities participated						
Trainings	39.9	101	28.0 (25.0-31.0)	69.9	93	70.0 (66.7-73.3)
Group discussions	24.5	62	21.9 (19.1-24.7)	6.0	8	6.0 (4.3-7.7)
VCT	67.6	171	73.3 (70.3-76.3)	7.5	10	7.5 (5.6-9.4)
Community	13.0	33	8.3 (6.4-10.2)	9.0	12	9.0 (6.9-11.1)

mobilization events						
Condoms and lubricants distribution	66.0	167	60.4 (57.1-63.7)	3.8	5	3.8 (2.4-5.2)
STI diagnostics	20.6	52	17.1 (14.6-19.6)	3.8	5	3.8 (2.4-5.2)
Total		**253**	**843**	**100**	**133**	**746**
Do you know where to go for HIV testing?						
Yes	92.8	425	94.4 (93.3-95.5)	97.6	243	97.6 (96.8-98.4)
No	7.2	33	5.6 (4.5-6.7)	2.4	6	2.4 (1.6-3.2)
Total	**100**	**458**	**1660**	**100**	**249**	**1397**

The status of FSWs' participation in STI, HIV and AIDS prevention programmes is shown in Figure 3.9. Compared to the results of SS 2014, proportion of FSWs who used condom at last sex with a paying client did not change. Proportion of FSWs who consistenly used condoms in the last 12 months of commercial sex decreased. Nonetheless, proportion of FSWs who participated in prevention programmes such as trainings and promotional activities increased, compared to SS 2014 (Figure 3.9).

Figure 3.9 Impacts of STI, HIV and AIDS prevention interventions for FSWs, by SS years



3.1.7 Human right issues

When asked about issues related to human right violations, FSWs reported their right to privacy and right to employment being violated and they have faced pressure and threatening from policemen and owners of bars, hotels and saunas. Right to privacy was reported as the most commonly violated human right among MSM (Table 3.25)

Table 3.25 Problems encountered among FSWs and MSM, in association with human rights and discrimination, by percentage, 2017

Discrimination and human rights associated problems arising because of sexual behaviors	FSWs	MSM
Right to employment	12.4	6.1
Right to education	1.5	6.1
Right to health services	2.8	2.3
Right to privacy	28.2	19.5
Right to free movement	2.4	3.1
Police and other law enforcement agencies refuse to provide protection	-	5.0
Sexual harassment by policemen	6.6	-

Pressure and threatening from policemen	17.9	-
Pressure and threatening from owners of bars, hotels and saunas	13.8	-
Others	45	1.5
Number of respondents	**458**	**261.0**

Among FSWs who participated in the survey, 7.1 percent reported being forced to sell sex. This means there are issues of human rights violations faced by FSWs.

Table 3.26 Percentage of FSWs who were forced to sell sex, 2017

Selected indicators	Percent	Number of respondents
Have ever been forced to sell sex under someone's pressure		
Yes	7.1	32
No	92.9	419
Total	**100**	**451**

3.2 Findings of the Youth and Students' Survey

3.2.1 Characteristics of the Survey Populations

Demographics of the total of 1874 surveyed students are shown in Table 3.27. Among them, 46.0 percent were male and 54.0 percent were female, and average age was 20 years. Proportion of married students was 1.8 percent, while 22.5 percent had a cohabiting partner and 75.7 percent were unmarried.

Table 3.27 Selected Demographic Characteristics, by sex

Selected demographic characteristics	Total	Adjusted % (95% CI)	Male	Female
Sex				
Male	46.0	41.8 (41.6-42.0)	-	-
Female	54.0	58.2 (58.0-58.4)	-	-
Age groups				
Below 18	16.1	16.0 (15.8-16.2)	17.3	15.0
18-22	77.5	77.8 (77.6-78.0)	74.7	79.9
Above 22	6.4	6.3 (6.2-6.4)	8.0	5.0
Average age / median age	20/20	20/20	20.1/20	20/20
Marital status				
Married	1.8	1.8 (1.7-1.9)	1.7	1.8
Unmarried	75.7	75.9 (75.7-76.1)	73.2	77.8
Has a cohabiting partner (boy friend or girl friend)	22.5	22.3 (22.1-22.5)	25.0	20.3
Total	**100**	**100**	**100**	**100**
Number of respondents	**1,874**	**157,138**	**863**	**1011**

Of the surveyed 15-24 year old students, 63.3 percent studied in public universities, 31.1 percent studied in private universities and 5.5 percent studied in TVET centers. In terms of academic year, 34.0 percent were 1st year students, 27.2 percent 2nd year students, 14.9 percent 3rd year students, 21.7 percent were 4th year students and 2.2 percent were 5th and 6th year students.

Engineering, industry, organization and health science were the most common field of studies with 31.7 percent of the students studied engineering and 18.7 percent studied health science. When sex differences were analyzed, 43.1 percent of male students studied engineering and 12.4 percent bussiness administration and law, while the most common fields of study among female students were health science, engineering, arts and humanity.

Of the surveyed students, 36.5 percent reported living in own home with family members, while 36.6 percent in students' dormitory, 14.0 percent in relatives' home, 1.4 percent in own home alone and 11.1 percent living in a rented apartment or public hostel (Table 3.28).

In total, 1874 students were tested for syphilis and 0.6 percent or 12 of them were detected with syphilis.

Table 3.28 Selected socio-economic characteristics, by sex

Selected socio-economic characteristics	Total	Adjusted % (95% CI)	Male	Female
Educational institutions				
Public higher education institutes	63.3	63.7 (63.5-63.9)	59.4	66.7
Private higher education institutes	31.1	30.9 (30.7-31.1)	33.5	29.1
TVET centers	5.5	5.4 (5.3-5.5)	7.1	4.3
Academic year				
1	34.0	33.9 (33.7-34.1)	36.0	32.3
2	27.2	27.4 (27.2-27.6)	24.3	29.7
3	14.9	14.9 (14.7-15.1)	15.2	14.6
4	21.7	21.6 (21.4-21.8)	22.2	21.2
5	2.0	2.0 (1.9-2.1)	2.1	2.0
6	0.2	0.2	0.1	0.2
Field of study				
Education	8.0	7.9 (7.8-8.0)	9.0	7.1
Arts, humanity, linguistics	12.5	13.0 (12.8-13.2)	6.7	17.5
Social science, information, journalism	5.0	5.1 (5.0-5.2)	3.4	6.4
Business admimistration, law	10.2	10.1 (10.0-10.2)	12.4	8.4
Natural science, mathematics, statistics	5.1	5.1 (5.0-5.2)	4.2	5.8
Information and communication technology	2.4	2.3 (2.2-2.4)	3.5	1.5
Engineering, industry, design	31.7	30.8 (30.6-31.0)	43.1	22.0
Agriculture	2.6	2.7 (2.6-2.8)	1.2	3.9
Health science	18.7	19.2 (19.0-19.4)	11.7	24.6
Social protection	2.5	2.4 (2.3-2.5)	3.2	1.8
Services	1.3	1.3 (1.2-1.4)	1.6	1.0
Place of residence				
In own home with family	36.5	36.3 (36.1-36.5)	38.7	34.6
Alone, in own home	1.4	1.4 (1.3-1.5)	2.1	0.9
In a relative's home	14.0	13.9 (13.7-14.1)	15.2	13.1
Rented apartment	9.8	9.8 (9.7-9.9)	9.6	9.9
Students' dormitory	36.6	37.0 (36.8-37.2)	32.6	40.2
Rented public hostel	1.3	1.3 (1.2-1.4)	1.4	1.3
Others	0.3	0.3	0.5	0.1
Total	**100**	**100.0**	**100**	**100**
Number of respondents	**1874**	**157138.0**	**863**	**1011**

3.2.2 Knowledge of and Attitude Towards HIV and AIDS

Level of correct knowledge or percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission was estimated and the results presented in Table 3.29.

Table 3.29 Knowledge of HIV and AIDS, by sex

Knowledge of HIV and AIDS	Total	Adjusted % (95% CI)	Male	Female
Have heard of HIV and AIDS	**92.6**	**92.7 (92.6-92.8)**	**92.7**	**92.0**
Having one faithful sexual partner can reduce risks of HIV transmission	68.1	67.8 (67.6-68.0)	72.1	64.8
Using condoms every time you have sex can prevent HIV infection	81.4	81.1 (80.9-81.3)	85.5	77.9
Percentage of people who know the ways of preventing HIV transmission	**63.0**	**62.7 (62.5-62.9)**	**68.4**	**58.6**
A healthy-looking person can have HIV	73.0	73.0 (72.8-73.2)	73.7	72.5
HIV cannot be transmitted through mosquito bites	36.2	36.4 (36.2-36.6)	33.0	38.9
HIV cannot be transmitted through shaking hands and sharing meals with an HIV infected person	71.6	71.6 (71.4-71.8)	72.7	70.8
Percentage of people who have correct knowledge about ways of HIV transmission	**27.3**	**28.0 (27.8-28.2)**	**25.6**	**28.4**
Percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission	**21.4**	**-**	**21.6**	**21.3**

Of the surveyed students, 92.6 percent have heard of HIV, and 63.0 percent knew ways to prevent HIV infection, while 27.3 percent had correct knowledge on ways of HIV transmission. Percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission was 21.4.

Proportion of students with knowledge of ways to prevent HIV infection and correct concept of HIV transmission ways was higher among students studying in public univiersities. However, proportion of TVET students who know the ways of preventing HIV transmission and have correct concept of HIV transmission ways was relatively low.

Table 3.30 Knowledge of HIV and AIDS, by educational institutions

Knowledge of HIV and AIDS	Public universities	Private universities	TVET centers
Have heard of HIV and AIDS	**95.9**	**86.3**	**92.6**
Having one faithful sexual partner can reduce risks of HIV transmission	74.1	60.0	45.2
Using condoms every time you have sex can prevent HIV infection	84.2	75.6	82.7
Percentage of people who know the ways of preventing HIV transmission	**68.7**	**54.9**	**44.2**
A healthy-looking person can have HIV	75.7	67.4	75.0
HIV cannot be transmitted through mosquito bites	37.1	36.2	26.0
HIV cannot be transmitted through shaking hands and sharing meals with an HIV infected person	74.9	67.9	55.8
Percentage of people who have correct knowledge about ways of HIV transmission	**28.6**	**25.4**	**19.2**
Percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission	**22.8**	**20.2**	**11.5**

When asked about the riskiest type of sexual intercourse for HIV transmission, 55.0 percent of the surveyed students responded vaginal sex, and 62.6 percent of the male students also responded it is vaginal sex. At the same time, 44.6 percent of the female students responded

"Do not know" to this question. About 35 percent of all the surveyed students didn't know how to answer this question.

Table 3.31 The riskiest type of sexual intercourse for STI and HIV transmission

	Total (n=1875)	Adjusted % (95% CI)	Male	Female
Vaginal sex	55.0	54.4 (54.2-54.6)	62.6	48.6
Anal sex	6.7	6.5 (6.4-6.6)	9.8	4.1
Oral sex	2.1	2.1 (2.0-2.2)	2.4	1.8
Do not know	35.1	36.0 (35.8-36.2)	23.8	44.6
Others	1.1	1.0 (0.95-1.05)	1.4	0.8

3.2.3 Sexual Behaviors and Practices

Among the overall surveyed students, 61.4 percent responded that they "have ever had sex" and this response was given by 78.8 percent of male students and 46.5 percent of female students. Age of sexual debut of male students was relatively young, 36.4 percent of them had their sexual debut at age younger than 16 years. As for the surveyed female students, 7.4 percent of them had their sexual debut at age younger than 16 years, 86.6 percent had it at age between 16 and 20 years, and 6.1 percent had it at age of 20 years or above. Proportion of students who had sex in the last 12 months was higher in male students. In the last 12 months, 91.2 percent of the female students who ever had sex had one sexual partner, whereas 60.6 percent of the male students had one sexual partner, 35.3 percent of them had 2-4 sexual partners and 4.1 percent had more than 5 sexual partners.

None of the surveyed students had sex in exchange for money in the last 12 months. However, 38.0 percent of the males and 22.5 percent of the females had casual sex in the last 12 months.

When comparing proportion of students who ever had sex by educational institutions, the lowest proportion was observed among TVET students at 47.1 percent, while 62 percent of the students studying in public and private universities responded they ever had sex.

However, age of sexual debut was younger for TVET students. In other words, 24.5 percent of TVET students had their sexual debut at age below 16 years, while 11.7 percent of the students attending private universities and 7.8 percent of the students attending public universities had their sexual debut at age below 16 years.

About 78.5 percent of public university students, 83.0 percent of private university students, and 73.5 percent of TVET students had sex in the last 12 months. Proportion of students who had 5 or more sexual partners in the last 12 months was higher among private university students at 3.8 percent. Public university students come next with 1.8 percent, while no TVET students had 5 or more sex partners in the last 12 months. Furthermore, 33.6 percent of public university students, 27.5 percent of private university students, and 34.8 percent of TVET students had casual sex in the last 12 months.

Table 3.32 Sexual behaviors and practices, by sex

Indicators	Total	Adjusted % (95% CI)	Male	Female
Have ever had sex				
Yes	61.4	60.0 (59.8-60.2)	78.8	46.5

No	38.6	40.0 (39.8-40.2)	21.2	53.5
Age of sexual debut				
Below 16 years	24.3	23.0 (22.7-23.3)	36.4	7.4
16-20 years	72.7	73.7 (73.4-74.0)	62.7	86.6
20 years and above	3.1	3.3 (3.2-3.40	0.9	6.1
Average age of sexual debut	*17.5*	*17.6*	*17*	*18.3*
Total	**100**	**100**	**100**	**100**
Number of respondents	**1,108**	**90,939**	**646**	**462**
Had sex in the last 12 months				
Yes	79.7	79.5 (79.2-79.8)	81.2	77.5
No	19.9	20.1 (19.8-20.4)	18	22.5
Don't remember	0.4	0.4 (0.36-0.44)	0.8	0.0
Total	**100**	**100**	**100**	**100**
Number of respondents	**1,127**	**92,383**	**665**	**462**
Number of sexual partners in the last 12 months				
1	73	74.3 (74.0-74.6)	60.6	91.2
2-4	24.6	23.4 (23.1-23.7)	35.3	8.8
5 or more	2.4	2.2 (2.1-2.30	4.1	0
Average	*1.5*	*1.5*	*1.8*	*1.1*
Total	**100**	**100**	**100**	**100**
Number of respondents	**867**	**71,021**	**515**	**352**
Had sex in exchange for money in the last 12 months				
Yes	0	-	-	-
No	100	-	-	-
Number of respondents	**890**	**-**	**-**	**-**
Had casual sex in the last 12 months				
Yes	31.8	31.1 (30.8-31.4)	38.0	22.5
No	68.2	68.9 (68.6-69.2)	62.0	77.5
Total	**100**	**100**	**100**	**100**
Number of respondents	**1,099**	**89,994**	**655**	**444**

Proportion of students who ever had sex was the highest among students living alone in own home at 81.5 percent, while 65.6 percent of the students living in own home with family members, 57.0 percent of the students living in a relative's place and 63.0 percent of the students living in students' dormitory responded that they ever had sexual intercourse. Moreover, students who live alone in own home had their sexual debut at relatively young age, of which 13.6 percent had their sexual debut at age younger than 16 years. Whereas 9.0 percent of the students who live in own home with family members, 10.9 percent of the students who live in relatives' place, 11.8 percent of the students who live in students' dormitory, and 5.5 percent of the students who live in rented apartments had their sexual debut at age younger than 16 years. Of all the surveyed students, 80.0 percent had sexual intercourse in the last 12 months, and it was the highest or 87.6 percent among students who live in rented apartments.

Table 3.33 Sexual behaviors of youth and students, by educational institutions

Indicators	Public universities	Private universities	TVET centers
Have ever had sex			
Yes	62.6	61.4	47.1
No	37.4	38.6	52.9
Age of sexual debut			
Below 16 years	7.8	11.7	24.5
16-20	80.1	80.1	71.4
20 years and above	12	8.3	4.1
Average age of sexual debut	*17.7*	*17.3*	*16.6*
Total	**100**	**100**	**100**

Number of respondents	**708**	**351**	**49**
Had sex in the last 12 months			
Yes	78.5	83	73.5
No	21.3	16.8	22.4
Don't remember	0.3	0.3	4.1
Total	**100**	**100**	**100**
Number of respondents	**720**	**358**	**49**
Number of sexual partners in the last 12 months			
1	73.8	72.1	68.6
2-4	24.4	24.1	31.4
5 or more	1.8	3.8	0
Average	*1.5*	*1.6*	*1.5*
Total	**100**	**100**	**100**
Number of respondents	**542**	**290**	**35**
Had casual sex in the last 12 months			
Yes	33.6	27.5	34.8
No	66.4	72.5	65.2
Total	**100**	**100**	**100**
Number of respondents	**711**	**342**	**46**

In the last 12 months, students who live alone in own home had the highest number of sexual partners, and 20.0 percent of the overall surveyed students had 5 or more sexual partners.

About 27.5 percent of the students who live in own home with family members, 27.3 percent of the students who live alone in own home, 40.8 percent of the students who live in relatives' place, 33.5 percent of the students who live in students' dormitory and 32.5 percent of the students who live in rented apartments had sexual intercourse in the last 12 months.

Table 3.34 Sexual behaviors of youth and students, by place of residence

Indicators	In own home with family members	Alone in own home	In relatives' place	In students' dormitory	In rentedapartments
Have ever had sex					
Yes	65.6	81.5	57.0	57.2	63.0
No	34.4	18.5	43.0	42.8	37.0
Age of sexual debut					
Below 16 years	9.0	13.6	10.9	11.8	5.5
16-20	80.8	86.4	76.9	79.9	77.2
20 years and above	10.2	0	12.2	12.2	17.3
Average age of sexual debut	*17.5*	*16.8*	*17.6*	*17.4*	*17.6*
Total	**100**	**100**	**100**	**100**	**100**
Number of respondents	**443**	**22**	**147**	**364**	**127**
Had sex in the last 12 months					
Yes	79.5	68.2	80	77.5	87.6
No	19.9	31.8	19.3	22.3	12.4
Don't remember	0.7	0.0	0.7	0.3	0.0
Total	**100**	**100**	**100**	**100**	**100**
Number of respondents	**448**	**22**	**150**	**373**	**129**
Number of sexual partners in the last 12 months					
1	75.7	66.7	74.8	68.1	74.8
2-4	7.5	13.3	23.5	28.7	24.3
5 or more	1.7	20.0	1.7	3.2	0.9
Average	*1.5*	*2.7*	*1.4*	*1.6*	*1.5*
Total	**100**	**100**	**100**	**100**	**100**
Number of respondents	**346**	**15**	**115**	**279**	**107**

Had casual sex in the last 12 months					
Yes	27.5	27.3	40.8	33.5	32.5
No	72.5	72.7	59.2	66.5	67.5
Total	**100**	**100**	**100**	**100**	**100**
Number of respondents	**433**	**22**	**142**	**373**	**126**

When students' condom use is classified by sex and school type, 60 percent of the surveyed students used condom at the first sexual intercourse and 50-60 percent of the surveyed students used condom at the last casual sexual intercourse.

Table 3.35 Condom use of youth and students

	Condom use at first sex, %	Number of respondents	Condom use at last casual sex, %	Number of respondents
Total	57.3	1127	57.4	455
Adjusted % (95% CI)	57.3 (57.0-57.6)	92383	56.6 (56.1-57.1)	36971
Male	57.3	665	64.3	291
Female	57.4	462	45.1	164
Public universities	56.0	720	55.7	316
Private universities	59.2	358	63.4	112
TVET centers	63.3	49	51.9	27

The highest ranking reasons of the surveyed students for engaging in unprotected sexual intercourse were: they trusted their sexual partners; didn't find or have condoms at that time; and forgot to use condoms.

Table 3.36 Reasons for engaging in unprotected sex among youth and students

Reasons for engaging in unprotected sex	Total	Male	Female
Do not like to use condoms	10.1	10.7	9.2
Forgot to use condoms	14.6	17.2	10.7
Never used, therefore do not know how to use	11.9	9.7	15.3
I did not find a condom at that time	15.8	20.3	9.2
I did not have time to buy condoms	6.2	8.3	3.1
Condoms are expensive	0.2	0.0	0.5
I feel awkward and ashamed to buy condoms	4.5	5.9	2.6
I do not trust condoms	1.0	1.0	1.0
I know another method of STI and HIV prevention	1.4	1.7	1.0
Sexual partner opposed condom use	2.5	2.1	3.1
I trust my sexual partner	28.6	24.1	35.2
I did not have condom	21.4	28.3	11.2
I was drunk	2.9	4.1	1.0
I was raped	0.6	0.3	1.0
I use other contraception method	3.7	2.8	5.1
Sexual partner might think I have a disease	0.6	0.7	0.5
Others	9.9	8.6	11.7
Number of respondents	**486**	**290**	**196**

When asked about whether they have been offered financial support in exchange for sex, 92.8 percent of the overall surveyed students, or 94.8 percent of male students and 91.2 percent of female students responded "Never". However, 65.0 percent of the overall surveyed students: 60.8 percent of male students and 67.9 percent of female students agree that there are sexual partners who provide financial support.

Table 3.37 Attitudes towards sexual behaviors, by sex, by educational institutions

Indicators	Total	Adjusted %	Male	Female	Public	Private	Colleges

		(95% CI)			universities	universities	
Have ever been offered financial support in exchange for sex							
Always	0.1	0.1 (0.08-0.12)	0.1	0.1	0.0	0.3	0.0
Most of the time	0.1	0.1 (0.08-0.12)	0.0	0.2	0.1	0.0	1.0
Sometimes	2	2.1 (2.0-2.2)	1.4	2.6	1.9	2.2	1.9
Rarely	4.9	5.0 (4.9-5.1)	3.7	5.9	5.1	4.6	4.8
Never	92.8	92.7 (92.6-92.8)	94.8	91.2	92.9	92.8	92.3
Agree that sexual partners who provide financial support do exist							
I totally agree	45.4	45.7 (45.5-45.9)	41.8	48.5	45.4	42.7	60.6
I agree	10.4	10.4 (10.2-10.6)	10.7	10.2	10.1	10.8	11.5
I accept	9.2	9.2 (9.1-9.30	9.2	9.2	8.7	10.8	5.8
I agree a little bit	27.5	27.4 (27.2-27.6)	29.1	26.1	28.6	26.8	18.3
I disagree	7.5	7.4 (7.3-7.5)	9.3	6.0	7.2	8.9	3.8
Having sex with same sex persons:							
It is a normal phenomenon	2.4	2.4 (2.3-2.5)	2.2	2.6	1.9	3.3	2.9
It could happen	9.8	10.0 (9.9-10.1)	7.4	11.8	9.9	9.9	6.7
I accept	4.1	4.1 (4.0-4.2)	3.8	4.4	4.3	4.1	1.9
It happens rarely	20.1	19.9 (19.7-20.1)	21	18.8	20.3	17.3	32.7
I don't accept at all	41.1	40.8 (40.6-41.0)	45.8	37.2	43	38.1	37.5
Do not know	22.5	22.8 (22.6-23.0)	19.2	25.3	20.6	27.3	18.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Number of respondents	**1875**	**157138**	**863**	**1011**	**1187**	**583**	**104**

In terms of having sexual intercourse with same sex persons, 16.3 percent of the overall surveyed students (13.4 percent of the males and 18.8 percent of the females) think that it is okay, while 41.1 percent of the overall students (45.8 percent of the males and 37.2 percent of the females) strongly oppose to sexual intercourse with same sex person. It was reported that 7.1 percent of public university students, 7.2 percent of private university students and 7.7 percent of TVET students have been offered financial support in exchange for sex.

Proportion of the students who agree that there are sexual partners who provide financial support was 64.1 percent among public university students, 64.3 percent among private university students and 77.9 percent among TVET students.

Proportion of the students who think it is normal to have sex with same sex person was 16.1 percent among public university students, 17.3 percent among private university students and 11.5 percent among TVET students. At the same time, 43 percent of public university students, 38.1 percent of private university students, and 37.5 percent of TVET students don't accept sexual intercourse with same sex person at all.

3.2.4 Sexually Transmitted Infections

While 6.9 percent of the overall surveyed students had STI symptoms in the last 12 months, of which 46.9 percent were treated, 2.8 percent of the male students had STI symptoms and 58.3 percent of them were treated, and 10.5 percent of the female students had STI symptoms and 44.3 percent of them received treatment.

Table 3.38 Sexually transmitted infections among youth and students

Indicators	% of respondents who had STI symptoms in the last 12 months	% of respondents who had STI symptoms and were treated at public and private clinics	Number of respondents
Total	6.9	46.9	**1874**
Adjusted % (95% CI)	8.2 (8.1-8.3)	3.4(3.3-3.5)	**157,138**
Male	2.8	58.3	**863**
Female	10.5	44.3	**1011**
Public universities	6.6	38.5	**1187**
Private universities	7.5	61.4	**583**
TVET centers	7.7	50.0	**104**
In own home, with family members	6.0	61.0	**684**
Alone in own home	14.8	50.0	**27**
In relatives' place	9.1	25.0	**263**
Students' dormitory	6.1	35.7	**687**
In rented apartments	6.5	68.4	**208**

Proportion of students who had STI symptoms was 6.6 percent for public university students, 7.5 percent for private university students and 7.7 percent for TVET students. Of these, 61.4 percent of the private university students, 50.0 percent of the TVET students, and 38.5 percent of the public university students were treated.

Students living alone in own home had the highest rate of experiencing STI symptoms at 14.8 percent, and 50.0 percent of them were treated. While 6.0 percent of the students living in own home with family members had STI symptoms, 61.0 percent of them were treated.

3.2.5 Alcohol Use

When the students were asked about their use of alcohol, 24.4 percent reported using it once in a month, 38.0 percent reported using once or twice a year, and 34.0 percent reported using none. Alcohol use was relatively high among male students, as 22.4 percent of the male students and 43.9 percent of the female students responded that they never use it.

Among the students, 41.8 percent of the males and 20.3 percent of the females reported using alcohol before having sexual intercourse, while 3.8 percent of the males and 0.4 percent of the females reported that they have ever used drugs before having sex.

Table 3.39 Use of alcohol and drugs, by sex

Bad habits	Total		Adjusted % (95% CI)	Male		Female	
	%	n		%	n	%	n
Alcohol use							
Daily	0.0	0	0.0	0.0	0	0.0	0
More than once in a week	0.5	9	0.5 (0.47-0.53)	0.8	7	0.2	2
Once in a month	24.4	458	23.4 (23.2-23.6)	37.4	323	13.4	135
More than once in a month	3.0	57	2.9	4.4	38	1.9	19

			(2.8-3.0)				
Once or twice a year	38.0	713	38.3 (38.1-38.50	35.0	302	40.7	411
None	34.0	638	34.9 (34.7-35.1)	22.4	193	43.9	444
Total	**100**	**1875**	**100.0**	**100**	**863**	**100**	**1011**
Have ever used alcohol before having sexual intercourse							
Yes	33.9	305	32.9 (32.6-33.2)	41.8	238	20.3	67
No	66.1	595	67.1 (66.8-67.4)	58.2	332	79.7	263
Total	**100**	**900**	**100**	**100**	**570**	**100**	**330**
Have ever used drugs							
Yes	2.0	37	1.8 (1.7-1.9)	3.8	33	0.4	4
No	98.0	1838	98.2 (98.1-98.3)	96.2	830	99.6	1007
Total	**100**	**1875**	**100**	**100**	**863**	**100**	**1011**

Alcohol use among TVET students was the lowest and 51.9 percent of TVET students, 35.8 percent of private university students and 31.5 percent of public university students responded that they never use alcohol.

In terms of drug use, 31.6 percent of public university students, 38.1 percent of private university students and 36.8 percent of TVET students reported that they have ever used alcohol before sex, while 1.8 percent of public university students, 2.6 percent of private university students and 1.0 percent of TVET students reported that they have ever used drugs before having sexual intercouse.

Table 3.40. Attitudes of students towards the use of alcohol and drugs and sexual behaviors, by educational institutions

Bad habits	Public universities		Private universities		TVET centers	
	%	n	%	n	%	n
Alcohol use						
Daily	0.0	0	0.0	0	0.0	0
More than once in a week	0.3	4	0.7	4	1.0	1
Once in a month	25.5	303	23.5	137	17.3	18
More than once in a month	3.2	38	2.7	16	2.9	3
Once or twice a year	39.4	468	37.2	217	27.0	28
None	31.5	374	35.8	209	51.9	54
Total	**100**	**1187**	**100**	**583**	**100**	**104**
Used alcohol before having sexual intercourse						
Yes	31.6	182	38.1	109	36.8	14
No	68.4	394	61.9	177	63.2	24
Total	**100**	**576**	**100**	**286**	**100**	**38**
Have ever used drugs						
Yes	1.8	21	2.6	15	1.0	1
No	98.2	1166	97.4	568	99.0	103
Total	**100**	**1187**	**100**	**583**	**100**	**104**

The highest rate of alcohol use was reported among students living alone in own home and 29.6 percent of them never use alcohol, whereas 33.9 percent of the students living in home with family members, 33.5 percent of the students living in relatives' place, 35.4 percent of the students living in students' dormitory, and 31.2 percent of the students living in rented apartments never use alcohol as well.

Students living alone in own home had the highest rate of drug use and 7.4 percent of them responded that they have used drugs, while 2.5 percent of the students living in home with family members, 1.1 percent of the students living in relatives' place, 1.7 percent of the students living in students' dormitory and 1.3 percent of the students living in rented apartments reported that they have used drugs.

Furthermore, 36.1 percent of the students living in home with family members, 44.4 percent of the students living alone in home, 31.1 percent of the students living in relatives' place, 31.4 percent of the students living in students' dormitory and 35.8 percent of the students living in rented apartments reported that they used alcohol before having sexual intercourse.

Table 3.41 Attitudes of students towards the use of alcohol and drugs and sexual behaviors, by place of residence

Bad habits	In own home, with family members		Alone in own home		Relatives' place		Students' dormitory		Rented apartments	
	%	N	%	n	%	Too	%	n	%	n
Alcohol use										
Daily	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
More than once in a week	0.4	3	0.0	0	0.0	0	0.4	3	1.4	3
Once in a month	23.1	158	40.7	11	22.1	58	24.3	167	29.8	62
More than once in a month	3.2	22	0.0	0	0.8	2	3.6	25	3.8	8
Once or twice a year	39.3	269	29.6	8	43.7	115	36.2	249	33.7	70
None	33.9	232	29.6	8	33.5	88	35.4	243	31.2	65
Total	**100**	**684**	**100**	**27**	**100**	**263**	**100**	**687**	**100**	**208**
Have used alcohol before having sexual intercourse										
Yes	36.1	123	44.4	8	31.1	38	31.4	96	35.8	39
No	63.9	218	55.6	10	68.9	84	68.6	210	64.2	70
Total	**100**	**341**	**100**	**18**	**100**	**122**	**100**	**306**	**100**	**109**
Have ever used drugs										
Yes	2.5	17	7.4	2	1.1	3	1.7	12	1.4	3
No	97.5	667	92.6	25	98.9	260	98.3	675	98.6	205
Total	**100**	**684**	**100**	**27**	**100**	**263**	**100**	**687**	**100**	**208**

Most of the students who have ever used drugs reported that they used weed, and mostly through smoking, sniffing or snorting. Also, 0.34 percent or 4 of the students reported having had sex with persons who used drugs.

Table 3.42 Drug use among youth and students

Drug use	Total
Types of drugs used	
Orally	1
Gas	5
Cannabis	2
Some type of drugs	1
Weeds	26
Hashish	1
Routes of drug use	
Sniffing, snorting	20
Chewing	-
Smoking	30
Orally	2
Intramuscular injection	-
Intravenous infusion	-

Others	1
Total	**37**

3.2.6 Accessibility of STI, HIV and AIDS Prevention Interventions

Among the overall students surveyed, 28.3 percent had been tested for HIV before and there was no distinction between sexes. As for how the decisions of being tested were made, more than half of the male students were tested voluntarily, while over 60 percent of the female students were tested on requirement.

Of the tested students, 7.4 percent reported having received positive test results, as 8.4 percent of the male students and 6.5 percent of the female students received positive results.

Proportion of the students who participated in public events on HIV prevention in the last 12 months was higher among male students and 38.1 percent of them participated in such activities. Students mostly participated in public events and activities such as training and condom distribution.

Among the overall students, 49.8 percent knew where to go for HIV testing if needed, and the knowledge on this matter was higher or 51.0 percent among male students, and 48.8 percentof female students knew where to go for HIV testing.

Attendance in HIV testing was higher among public university students, of which 30.5 percent were tested, while 24.9 percent of private university students and 20.8 percent of TVET students had HIV testing. More than half of the students were tested on requirement.

Among the students who were tested before, the highest number positive test results was received by TVET students, with 20.0 percent, whereas 7.1 percent of public university students and 6.4 percent of private university students received positive results.

The level of participation in public STI, HIV and AIDS prevention campaigns and activities was highest among TVET students, of which 46.9 percent had participated in such activities, while 39.8 percent of private university students and 32.0 percent of public university students participated mostly in public activities like trainings and condom distribution.

In terms of knowledge about places of HIV testing, 50.2 percent of public university students, 48.0 percent of private university students and 54.2 percent of TVET students knew where to go for HIV testing.

Table 3.43 STI, HIV and AIDS prevention activities, by sex

Selected indicators	Total		Adjusted % (95% CI)	Male		Female		Public universities		Private universities		TVET centers	
	%	n		%	n	%	n	%	n	%	n	%	n
Have ever been tested for HIV			**143603**										
Yes	28.3	485	28.3(28.1-28.5)	28.7	225	28.0	260	30.5	340	24.9	125	20.8	20
No	71.7	1227	71.7 (71.5-71.9)	71.3	560	72.0	667	69.5	774	75.1	377	79.2	76
Total	100.0	**1712**	**100**	**100**	**785**	**100**	**927**	**100**	**1114**	**100**	**502**	**100**	**96**
Testing was			**33743.0**										
Voluntary	47.1	190	46.5 (46.0-47.0)	55.6	105	39.7	85	45.0	137	45.5	45	40.0	8
Required	52.9	213	53.5 (53.0-54.0)	44.4	84	60.3	129	54.0	147	54.5	54	60.0	12
Total	**100**	**403**	**100**	**100**	**189**	**100**	**214**	**100**	**284**	**100**	**99**	**100**	**20**
Was told that the test result was positive			**40644.0**										
Yes	7.4	36	7.3 (7.0-7.6)	8.4	19	6.5	17	7.1	24	6.4	8	20.0	4
No	85.2	413	85.3 (85.0-85.6)	83.6	188	86.5	225	85.0	289	86.4	108	80.0	16
Did not get the results	7.4	36	7.4 (7.1-7.7)	8.0	18	6.9	18	7.9	27	7.2	9	0.0	0
Total	**100**	**485**	**100**	**100**	**225**	**100**	**260**	**100**	**340**	**100**	**125**	**100**	**20**
Have participated in public events and activities on STI, HIV and AIDS prevention in the last 12 months			**143603**										
Yes	35.1	601	34.9 (34.7-35.1)	38.1	299	32.6	302	32.0	356	39.8	200	46.9	45
No	64.9	1111	65.1 (64.9-65.3)	61.9	486	67.4	625	68.0	758	60.2	302	53.1	51
Total	**100**	**1712**	**100**	**100**	**785**	**100**	**927**	**100**	**1114**	**100**	**502**	**100**	**96**
Types of activities participated			**107066**										
Trainings	80.0	481	80.4 (80.2-80.6)	76.3	228	83.8	253	76.7	273	84.0	168	88.9	40
Group discussions	4.2	25	4.1 (4.0-4.20	4.3	13	4.0	12	3.4	12	5.5	11	4.4	2
Voluntary counselling and testing	11.5	69	11.5 (11.3-11.7)	11.7	35	11.3	34	14.0	50	7.5	15	8.9	4
Received condoms and lubricants	23.3	140	22.3 (22.1-22.5)	34.4	103	12.3	37	24.2	86	25.0	50	8.9	4
STI diagnostics	4.8	29	4.8 (4.7-4.9)	5.0	15	4.6	14	6.5	23	2.5	5	2.2	1
Others	1.8	11	1.9 (1.8-2.0)	1.7	5	2.0	6	1.4	5	3.0	6	0.0	0
Total		**601**			**299**		**302**		**356**		**200**		**45**
Do you know where to go for HIV screening tests?			**143603**										
Yes	49.8	852	49.7 (49.4-50.0)	51.0	400	48.8	452	50.2	559	48.0	241	54.2	52
No	50.2	860	50.3 (50.0-50.6)	49.0	385	51.2	475	49.8	555	52.0	261	45.8	44
Total	**100**	**1712**	**100**	**100**	**785**	**100**	**927**	**100**	**1114**	**100**	**502**	**100**	**96**

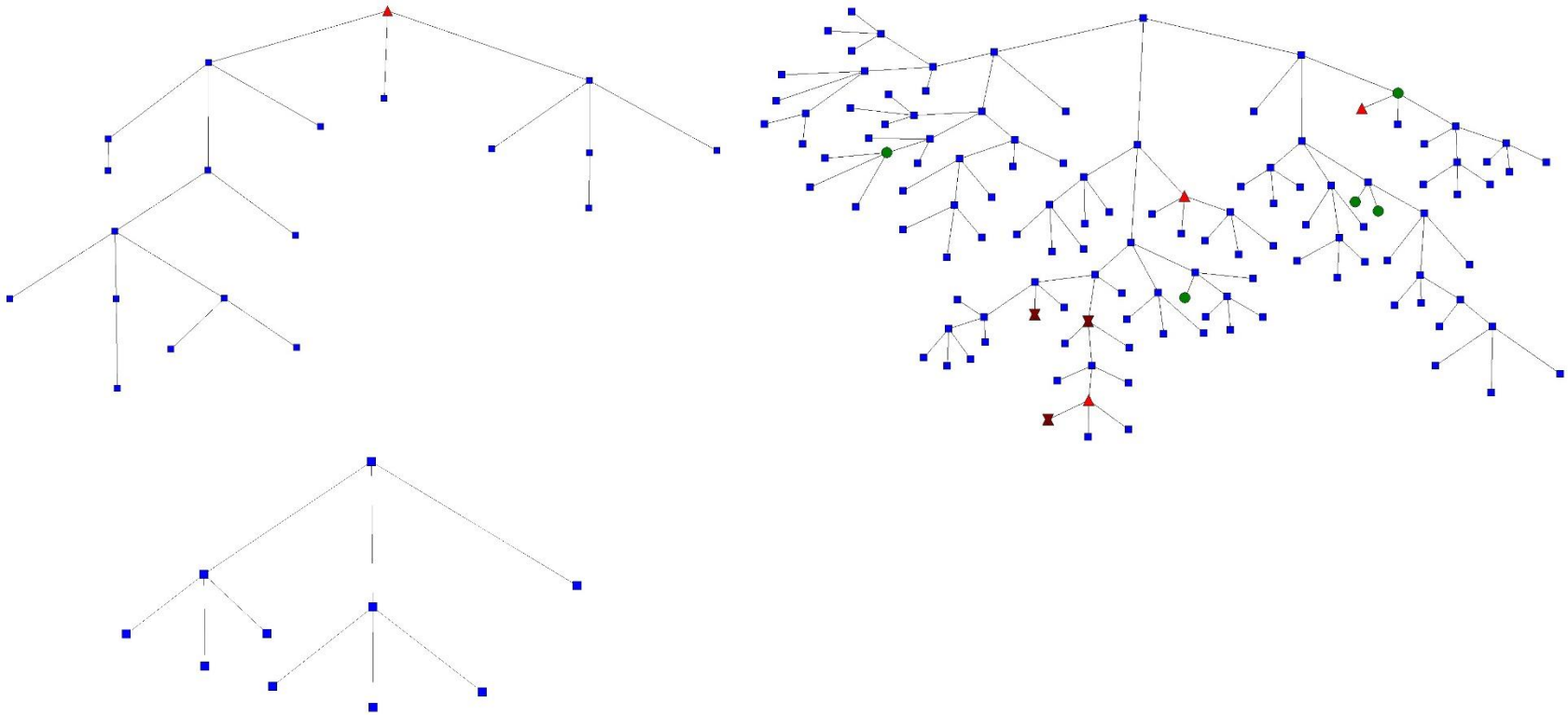
FOUR. CONCLUSIONS

- The prevalence of syphilis among the surveyed FSWs is 24.5 percent and this is 4.7 percentage points lower than the findings of SS 2014. Decrease in the prevalence of syphilis has been observed in all locations of the survey. No cases of HIV infection have been detected among FSWs.
- The prevalence of syphilis among the surveyed MSM is 9.2 percent. Compared to the findings of SS 2014, this implies an increase of 2.1 percentage points. However, the prevalence of HIV has decreased by 2.8 percentage points, since 2014, and reached 9.2 percent.
- The prevalence of syphilis among the surveyed students aged 15-24 years is 0.6 percent. No cases of HIV infection have been detected among them.
- Compared to the 2014 survey results, percentage of people who both correctly identify ways of preventing HIV infection and reject major misconceptions about HIV transmission has decreased by 8.1 percentage points and arrived at 25.3 among FSWs, whereas for MSM this has increased by 0.7 percentage points and arrived at 55.6 percent. However, percentage of people with comprehensive knowledge among the surveyed students aged 15-24 years is 21.3.
- Percentage of FSWs who used condoms every time they had commercial sex in the last 12 months is 51.3, which shows a 5.6 percentage point decrease since 2014. Percentage of FSWs who consistently used condoms every time they had casual sex has been increased by 6.7 percentage points, since 2014, and reached 31.7.
- Percentage of MSM who consistently used condoms every time they had sexual intercourse in the last 12 months has increased by 10.4 percentage points, since 2014, and reached 55.9. Percentage of MSM who consistently used condoms every time they had sex with men is 60.2, which is higher than the findings of SS 2014 by 15.3 percentage points.
- Percentage of youth and students who consistently used condoms every time they had sexual intercourse is 57.4 percent.

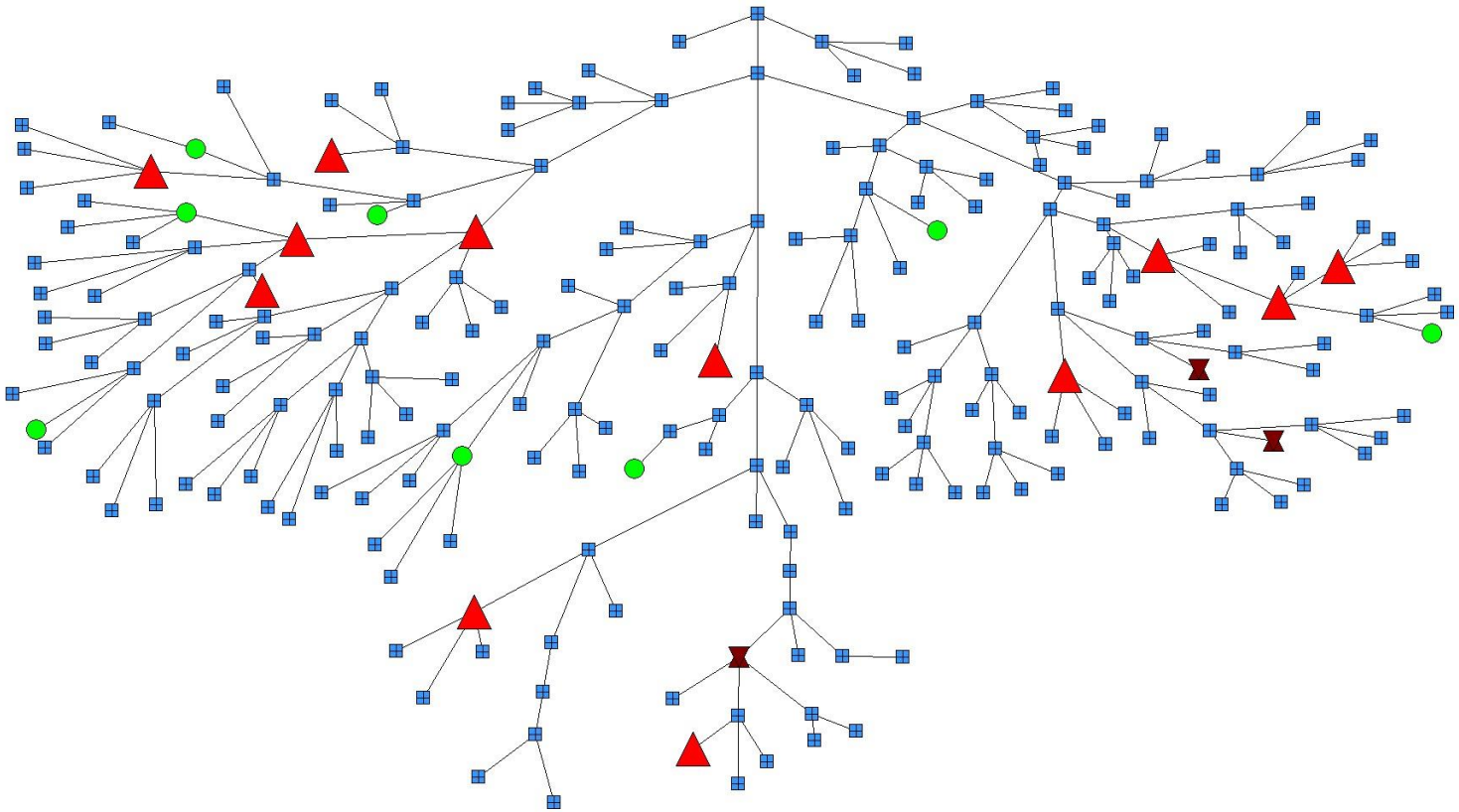
RECOMMENDATIONS

- Identification of HIV and syphilis incidence among the study populations should be conducted.
- With the prevalence of syphilis not significantly decreasing to the desired level among FSWs, but increasing among MSM, and the coverage of the prevention programmes in two population groups and the level of comprehensive knowledge of STI, HIV and AIDS prevention both reducing, it is important to emphasize and expand the coverage of community-based prevention interventions for the targeted population groups.
- The youth and students aged 15-24 years are rightful representatives of the entire population. Hence the survey among this population group should be conducted every 4 years, with sampling not limited to universities and TVET centers in Ulaanbaatar city only. The survey should be nationwide and equipped with questionnaires and serological studies.

Annex 1. Seed mapping of the surveyed MSM



Syphilis positive
HIV positive
Syphilis and HIV positive
Syphilis and HIV negative



Syphilis positive
HIV positive
Syphilis and HIV positive
Syphilis and HIV negative

Annex 2. Probability ratio of HIV infection among FSWs, by selected indicators

Independent variables	Probability ratio of HIV infection								
	OR	95% CI	p-value	AdjOR	95% CI	p-value	All	95% CI	p-value
Demographic indicators									
Age									
15-24	1			1			1		
25-34	0.889	(0.523-1.509)	0.663	0.911	(0.535-1.551)	0.731	0.733	(0.408-1.318)	0.3
35 and above	1.062	(0.598-1.887)	0.836	1.017	(0.569-1.817)	0.956	0.736	(0.379-1.429)	0.365
Marital status									
Have regular sexual partner	1			1			1		
Don't have regular sex partner	0.784	(0.472-1.302)	0.347	0.777	(0.468-1.292)	0.331	0.642	(0.376-1.097)	0.105
Socio-economic indicators									
Education level									
Lower than complete secondary	1			1			1		
Complete secondary	0.552**	(0.343-0.891)	0.015	0.568**	(0.349-0.927)	0.023	0.479***	(0.279-0.821)	0.007
Higher than complete secondary	0.565*	(0.290-1.102)	0.094	0.582	(0.296-1.146)	0.117	0.54*	(0.262-1.110)	0.094
Employment status									
Employed	1			1			1		
Unemployed	0.983	(0.561-1.720)	0.952	0.978	(0.558-1.714)	0.939	0.796	(0.442-1.432)	0.446
Student	1.017	(0.328-3.151)	0.977	1.024	(0.330-3.179)	0.967	0.987	(0.288-3.385)	0.983
Registered area of residence									
Ulaanbaatar	1						1		
Others	0.775	(0.482-1.246)	0.292				1.023	(0.602-1.737)	0.934
Indicators of knowledge and risky behaviors									
Knowledge of HIV									
Have correct knowledge	1			1			1		
Don't have knowledge	0.927	(0.514-1.672)	0.800	0.959	(0.529-1.737)	0.89	0.873	(0.472-1.615)	0.665
Have participated in STI, HIV and AIDS prevention programmes									
Yes	1			1			1		
No	0.970	(0.631-1.490)	0.888	1.039	(0.676-1.598)	0.86	1.133	(0.724-1.775)	0.584
Have experienced STI symptoms									
Yes	1			1			1		
No	0.72	(0.467-1.109)	0.136	0.736	(0.476-1.139)	0.169	0.706	(0.438-1.136)	0.151
Consistent condom use									
Consistent	1			1			1		
Inconsistent	1.056	(0.687-1.621)	0.805	1.004	(0.647-1.559)	0.986	0.909	(0.559-1.477)	0.699
Have had sexual intercourse with foreigners									
Yes	1			1			1		
No	0.739	(0.328-1.665)	0.466	0.766	(0.339-1.730)	0.521	0.875	(0.375-2.043)	0.758
Alcohol use									
Use it regularly	1			1			1		
Use it to some extent	0.846	(0.544-1.316)	0.458	0.854	(0.548-1.330)	0.484	0.9	(0.561-1.443)	0.662
Don't use it at all	0.425*	(0.158-	0.09	0.442	(0.164-	0.106	0.481	(0.157-	0.2

	1.141)	1.190)	1.475)

Annex 3. Probability ratio of HIV infection among MSM, by selected indicators

Independent variables	Probability ratio of HIV infection								
	OR	95% CI	p-value	AdjOR	95% CI	p-value	All	95% CI	p-value
Demographic indicators									
Age									
15-24	1						1		
25-34	2.385*	(0.896-6.348)	0.082				2.519	(0.662-9.595)	0.176
35 and above	1.401	(0.477-4.120)	0.54				1.592	(0.373-6.801)	1.592
Marital status									
Have regular sexual partner	1			1			1		
Don't have regular sexual partner	1.135	(0.477-2.698)	0.775	1.361	(0.553-3.352)	0.503	1.246	(0.457-3.393)	0.667
Socio-economic indicators									
Education level									
Lower than complete secondary	0			0			0		
Complete secondary	0.617	(0.254-1.498)	0.285	0.807	(0.292-2.235)	0.68	0.702	(0.216-2.279)	0.556
Higher than complete secondary	1			1			1		
Employment status									
Employed	1			1			1		
Unemployed	1.811	(0.637-5.151)	0.266	2.05	(0.704-5.975)	0.188	2.629	(0.780-8.852)	0.119
Student	1.015	(0.365-2.825)	0.977	1.709	(0.478-6.108)	0.41	1.67	(0.376-7.414)	0.5
Registered area of residence									
Ulaanbaatar	1			1			1		
Others	1.323	(0.540-3.239)	0.54	1.443	(0.576-3.614)	0.434	1.824	(0.653-5.094)	0.251
Indicators of knowledge and risky behaviors									
Knowledge of HIV									
Have correct knowledge	1			1			1		
Don't have knowledge	1.504	(0.564-4.012)	0.415	1.561	(0.578-4.216)	0.38	2.333	(0.737-7.382)	0.149
Have participated in STI, HIV and AIDS prevention programmes									
Yes	1			1			1		
No	1.043	(0.450-2.416)	0.922	1.128	(0.482-2.638)	0.782	1.355	(0.521-3.521)	0.533
Have experienced STI symptoms									
Yes	1			1			1		
No	0.118***	(0.038-0.370)	0.000	0.123***	(0.039-0.391)	0.000	0.092***	(0.025-0.343)	0.000
Consistent condom use									
Consistent	1			1			1		
Inconsistent	0.897	(0.377-2.133)	0.805	0.895	(0.373-2.147)	0.803	0.537	(0.191-1.504)	0.237
Have had sexual intercourse with foreigners									
Yes	1			1			1		
No	0.556	(0.239-1.294)	0.173	0.656	(0.270-1.593)	0.352	0.479	(0.172-1.336)	0.16
Alcohol use									
Use it regularly	1			1			1		
Use it to some extent	1.088	(0.428-2.766)	0.86	1.277	(0.489-3.336)	0.617	1.978	(0.677-5.780)	0.212
Don't use it at all	0.429	(0.050-3.671)	0.439	0.491	(0.056-4.267)	0.519	0.661	(0.061-7.129)	0.733

Annex 4. Determinants of HIV infection risks among youth and students aged 15-24 years

Independent variables	Probability ratio of HIV infection								
	OR	95% CI	p-value	a.OR	95% CI	p-value	All	95% CI	p-value
Demographic indicators									
Marital status									
Have regular sexual partner	1			1			1		
Don't have regular sex partner	0.446	(0.141-1.413)	0.17	0.445	(0.140-1.421)		0.547	(0.167-1.792)	0.319
Types of educational institutions									
Public	1						1		
Private	0.451	(0.097-2.092)	0.309				0.438	(0.091-2.106)	0.303
TVET center	1.271	(0.159-10.129)	0.821				1.537	(0.179-13.182)	0.695
Place of residence									
In own home with family members	1			1			1		
Alone in own home	5.223	(0.589-46.319)	0.138	5.134	(0.575-45.865)	0.143	4.615	(0.422-50.446)	0.21
Relatives' place	0.518	(0.060-4.458)	0.549	0.488	(0.056-4.209)	0.514	0.614	(0.052-7.327)	0.7
Students' dormitory	0.795	(0.213-2.974)	0.734	0.732	(0.194-2.764)	0.646	1.046	(0.174-6.288)	0.961
Rented apartment	0.641	(0.074-5.513)	0.685	0.632	(0.073-5.473)	0.677	0.767	(0.064-9.261)	0.835
Registered area of residence									
Ulaanbaatar	1			1			1		
Others	0.656	(0.207-2.075)	0.473	0.609	(0.190-1.952)	0.404	0.689	(0.131-3.631)	0.66
Indicators of knowledge and risky behaviors									
Knowledge of HIV									
Have correct knowledge	1			1			1		
Don't have knowledge	1.07	(0.321-3.567)	0.912	1.139	(0.334-3.891)	0.835	1.194	(0.331-4.310)	0.787
Have participated in STI, HIV and AIDS prevention programmes									
Yes	1			1			1		
No	1.419	(0.383-5.262)	0.6	1.406	(0.378-5.236)	0.611	1.327	(0.341-5.175)	0.683
Have experienced STI symptoms									
Yes	1			1			1		
No	0.369	(0.80-1.702)	0.201	0.362	(0.078-	0.193	0.485	(0.097-	0.377

					1.674)			2.415)	
Consistent condom use									
Consistent	1			1			1		
Inconsistent	0.808	(0.176-3.708)	0.784	0.831	(0.181-3.819)	0.812	1.106	(0.234-5.237)	0.899
Alcohol use									
Use it regularly	0			0			0		
Use it to some extent	5.749*	(0.741-44.626)	0.094	5.86*	(0.749-45.863)	0.092	5.271	(0.660-42.901)	0.117
Don't use it at all	1			1			1		