

**2ND GENERATION HIV SURVEILLANCE IN PAKISTAN
ROUND 5**

**INTEGRATED BIOLOGICAL & BEHAVIORAL
SURVEILLANCE IN PAKISTAN
2016-17**



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ABBEVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
BWP	Bahawalpur
BNU	Bannu
BBSWs	Brothel Based Sex Workers
CPBSWs	Cell Phone Based Sex Workers
DMU	Data Management Unit
DBS	Dried blood Specimen
DGK	Dera Ghazi Khan
EIA	Enzyme Immunoassay
FBD	Faisalabad
FSWs	Female Sex Workers
GIS	Geographical Information System
GRW	Gujranwala
GUJ	Gujrat
HSWs	Hijra Sex Workers
HRA	High Risk Activities
HIV	Human Immunodeficiency Virus
HYD	Hyderabad
HBSWs	Home Based Sex Workers
PWIDs	People Who Inject Drugs
IBBS	Integrated Behavioral and Biological Surveillance
JHL	Jhelum
KPK	Khyber PukhtunKhwa
KKSWs	Kothikhana Based Sex Workers
KHI	Karachi
KSR	Kasur
LHR	Lahore
LRK	Larkana
MLT	Multan
MSWs	Male Sex Workers
MSMs	Men having Sex with Men
MPK	Mirpurkhas
NACP	National AIDS Control Program
NGOs	Non-Governmental Organizations
NRL	National Referral Laboratory
NWB	Nawabshah
NWOs	Network Operators

PACPs	Provincial AIDS Control Programs
PSH	Peshawar
QTA	Quetta
RWP	Rawalpindi
SDPs	Service Delivery Programs
SGS	Second Generation Surveillance
SGD	Sargodha
SHP	Sheikhupura
SKT	Sialkot
SKR	Sukkur
STIs	Sexual Transmitted Infections
SBSWs	Street Bases Sex Workers
SW	Sex workers
TG	Transgender
TG-SW	Transgender Sex Worker
TG Non-SW	Transgender Non-Sex Worker
TRB	Turbat
UN	United Nations

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To be written by NACP

EXECUTIVE SUMMARY

HIV Surveillance data has been used extensively to guide HIV prevention program in Pakistan. The most recent National surveillance data was collected in 2011 and the fast pace with which this epidemic changes, updated estimates and prevalence is essential for effective HIV prevention, thereby justifying the need for this 5th surveillance round. To that effect, the UNAIDS & Global Fund planned a National scale study including 23 cities/towns to determine the prevalence and behaviors among key populations. The study was jointly carried out by the Provincial AIDS Control Programs (PACPs), National AIDS Control Programs (NACP), UNAIDS and Global Fund through commissioning international expertise provided by the Centre for Global Public Health University of Manitoba Canada, local academic institutions/universities paired with national field teams with experience in collecting surveillance data in Pakistan.

The specific objectives were to estimate the size of the selected Key populations through geographic and network mapping in different cities of Pakistan (Phase One – Programmatic Mapping) and then determine their socio-demographic profiles, HIV risk behaviors and HIV prevalence to inform the HIV prevention program in Pakistan (Phase Two – IBBS). Thus, there were two key aspects to this research and the final step was the knowledge translation of results for enhancing HIV and AIDS policies and programs.

This report provides biological and behavioural information related to HIV infection among four key populations: People who inject drugs (PWID), Men who have sex with men (MSM), Transgender populations and Female Sex Workers (FSWs). Data were collected in 23 sites including 13 in Punjab, 6 in Sind and 2 each in Baluchistan and KPK. The mapping data provided sampling frames, and diverse sampling techniques were used to draw representative samples of the key populations from these selected cities. Behavioral data were gathered from these population samples using a structured questionnaire covering socio-demographic information and risk behaviour indicators identified from the literature on HIV. Informed consent was obtained prior to conducting interviews. HIV testing was done using WHO guidelines for surveillance where two serial HIV rapid tests were conducted. All participants were linked with HIV service delivery programs and HIV treatment care and support system in case of a HIV positive result. Using the capillary “Dried Blood Specimen” (DBS) methodology, DBS samples were collected for all indeterminate tests, 2% HIV negative and 5% HIV positive tests, which were subsequently confirmed by the National reference HIV laboratory (NRL) at NACP. All participants were compensated for their time and participation in the study. The study protocol was designed to meet international ethical protocols by taking effective measures to avoid risk, protect individuals’ rights, and ensure safety of all study participants. The study protocol was reviewed and approved by Pakistan Medical Research Council (PMRC). All efforts were made to follow the research protocol to ensure harm minimization and that all those involved in the data collection were

appropriately trained and familiar with the study protocol and monitoring measures were in place for quality control.

People who inject drugs (PWID)

A total number of 4,062 PWIDs were interviewed, 99.4% of whom were males. Average age of PWIDs was 31.7 years \pm 8.7 (median = 30 years), with approximately 44% of the PWIDs being less than 30 years of age. Approximately 50% of the PWIDs were unmarried and 37.7% were currently married. Nearly 40% of the PWID interviewed were illiterate, 62.4% lived at homes, 30.4% in open spaces i.e. street or shrines and 58.9% lived with their families. Median monthly income was 10,000 PKR.

On an average, PWIDs started injecting drugs at the age of 26.5 years, and were injecting for an average of 5.2 years at the time of the survey. A significant proportion of PWIDs belonged to the city where they were interviewed (89%). More than half of PWIDs surveyed (56.8%) reported injecting two to three times a day in the past month, 31% reported injecting once a day while 11.3% reported injecting more than three times a day. The average number of injections per day ranged from 1.2 to 3.1 injections per day with Karachi and Bahawalpur reporting the highest number of injections per day (avg=3.1 and 3.0 respectively) while Peshawar reported the lowest number (avg=1.2). Public spaces including parks, streets and/or open areas were most commonly cited as venues where respondents injected for the last time (66.1%). A lesser proportion of PWIDs reported injecting drugs at home (14.9%) and Shrines/darbar (11.2%). Poly drug use was reported from nearly all cities and Avil (injection containing antihistamine pheneramine maleate) and heroin were the drugs of choice in most cities. 38.8% reported always using a new syringe, while 19.6% reported using a new syringe most of the time in the past one month. Approximately 31% of the PWIDs reported sharing needle/syringe with other PWIDs at their last injection. Sharing needle/syringe was most commonly reported from Bannu (65.1%) followed by Nawabshah (60.6%) and Kasur (56%). More than a fifth of all PWIDs reported injecting with a needle used by another PWID, while one fourth of the PWID reported passing on their used needle to another PWID. 27.7% of PWIDs reported that they used injecting paraphernalia including a cooker, water, cotton, caps etc., while 9.2% reported sharing one or more of these items.

Approximately 40% of PWIDs reported having sex with a regular female partner in the past six months. Condom use was low; 15.8% reported using condom at last sex with regular partner. Nearly 28.3% of PWIDs reported having had sex with FSWs in the past six months: average number of paid female sex partners was 5.9 \pm 7.1. Condom use was even lower; only 7.7% reported using condom with a paid female sexual partner at last sex. 23.6% of PWIDs reported having sex with MSWs and/or HSWs in the past six months. Condom use during last sex with a MSW/TGSW was reported by 5.8% of PWIDs with 11.2% reporting using lubricant.

73.2% of PWIDs had heard of HIV and/or AIDS. More than half the PWIDs interviewed (58.1%) reported knowing that HIV could be transmitted by sharp instruments/needle (syringe), while 52% were aware of sexual mode of HIV transmission. Only 22.3% knew that transfusion of infected blood can also cause HIV. Information regarding HIV prevention was low; 32.2% of PWIDs knew that using a clean needle/syringe for injections protects against HIV transmission, while 38.8% knew about condoms being an effective HIV prevention method. One third of the PWIDs (32%) reported sexual abstinence as a mode of HIV prevention. Approximately 41% of PWIDs knew of a place where they could be tested for HIV. 35.8% reported that they were ever tested for HIV and 28.4% reported of an HIV test done in the past year. Approximately one third (30.9%) of these knew their HIV status. On average the only 46% of PWIDs were aware of the HIV prevention program in their city, while utilization of services was reported by 24.6% of all PWIDs interviewed. PWIDs reported accessing the services provided at SDPs predominantly to obtain new syringes (22.4%), anti-septic dressing (11%) and counseling (10.5%) in the past twelve months. About 64% of PWIDs interviewed reported being discriminated for being PWIDs, while 31% reported being treated unfairly or denied health care. More than half the PWIDs (55.2%) reported physical abuse (hit, choked or threatened with a knife or other weapon). In the past 12 months, 38.5% of the PWIDs reported being arrested

Overall, weighted prevalence of HIV among PWID was 38.4% (95% CI; 37.9, 38.9) [un-weighted prevalence 20.9% (95% CI: 19.7, 22.2)]. All cities except Bannu reported concentrated epidemic. The highest prevalence was among PWIDs from Kasur (50.8%), Karachi (48.7%), Bahawalpur (25.1%) and Mirpurkhas (23.2%).

Transgender populations (TGs)

The two sub-groups included in this group included both "Transgender sex workers" (TG-SW) and the "Non-sex workers Transgender" (Non-SW TGs). The predominant proportion of all TGs interviewed (55.7%) referred to themselves as Zanana. [TG-SW (54.9%), Non-SWTGs (62.5%)], while 39.0% of all TGs referred to themselves as Hijra [(TG-SW= 39.4%; Non-SWTGs =30%)]. The average age for all TGs was 28.1 ± 6.7 years (median = 27 years). TGSWs were slightly younger [27.9 ± 6.4 (median= 27 years)] in comparison to the Non-SWTGs [29.9 ± 8.5 (median: 28 years)]. Approximately 6% of all TGs were aged 13-19 years, while the highest proportion (33.7%) of TGs was between the ages of 25-29 years. On average, TG-SWs initiated sex work at a young age (16.9 years and were involved in sex work for approximately 10.9 years. Overall, 87.2% of TGs were unmarried [unmarried proportion; 87.3% of TG-SWs and 85.7% of the Non-SWTGs], 44.5% were illiterate (TG-SW = 43.4%; Non-SWTGs = 53.1%) and 69% lived in Deras (TG-SW = 69.7% and Non SW-TGs=63%). A little more than one fifth of all TGs interviewed did not belong to the city of interview. The average monthly income was reported to be PKR 20,000 (197 USD) per month from all sources. TG-SWs reported earning PKR 10,000 (95.40 USD) per month from sex work alone.

Approximately one-third (33.3%) of TGSWs reported soliciting clients in public places by roaming around, while approximately 34.5% used cell phones and 22.7% reported relying on gurus for soliciting clients. On an average, TGSWs entertain 2 clients per day and 31.1 clients per month. More than half of the TG-SWs interviewed reported being involved in unpaid sex (57.7%), having on average 2.3 unpaid sexual partners in the past month. Consistent condom use was low; only 13.1% of the TGSWs reported consistently using condoms with paid clients. Condom use at last paid anal sex act was reported by 27.7% and 7.5% for last paid oral sex. 63.5% reported using lubricant at last anal sex act. Condom use was much lower for unpaid partners; condom use at last unpaid anal (13.1%) and oral sex (6.0%). Higher educational status of TG-SWs showed an effect on consistent condom use. TG-SWs with more than 10 years of education were twice more likely to report consistent condom use comparative to those with 6-10 years of education. Non-SWTGs reported having an average of 3.7 sexual partners during the past month. Consistent condom use was reported by only 9.7% of Non-SWTGs. At last anal sex, 12.1% of Non-SWTGs reported using a condom, while 2.4% of Non-SWTGs reported using a condom at last oral sex.

Use of alcohol/drugs during sex was reported by 44.2% of the TGSW in the past 12 months. For non SWTGs, alcohol/drug use during sex was reported by 31%. Among all TGs interviewed 2.4% having injected drugs and 4.2% reported having sex with a PWID in past 12 months. Approximately 4% of TG-SWs reported having sex with a PWID in the past year, while 2.6% reported injecting drugs in the past 12 months. For non SWTGs, 3.3% reported having sex with a PWID in the past year and 0.3% reported injecting drugs in the past 12 months. Approximately 75% of all the TGs had heard of HIV and/or AIDS; 78.0% of TG-Sw and only 52.6% of Non-SWTGs have heard about HIV and/or AIDS. Nearly 58% of all TGs interviewed [TG-SW; 61.0%, Non-SWTGs; 35.3%] knew that HIV can be transmitted by sex and 32.8% [TG-SW; 34.2%, Non-SWTGs; 21.7%] knew that HIV could be transmitted through a sharp instrument/syringe. Approximately 47% of all TGs [TG-SW; 49.6%, Non-SWTGs; 30.5%] were aware that condoms can prevent HIV transmission. Approximately 43% of all TGs [TG-SW; 45.7%, Non-SWTGs; 16.7%] knew of a place where an HIV test could be done. HIV testing was low with 34.2% of all TGs (37.3% of TG-SWs) reported getting tested, while very few Non-SWTGs (9.3%) reported getting tested. About 60% of all TGs [TG-SW; 63.2%, Non-SWTGs; 36.9%] had knowledge about various STIs, while 20% reported having an STI in the last 12 months.

Approximately 39% of TGs were aware of any HIV prevention programs (SDPs) in their city. Awareness about SDPs amongst TG-SW was more than double (41.7%) comparative to Non-SWTGs (16.4%). Only 15.1% ever utilized these services. Utilization was higher amongst TG-SWs compared to Non-SWTGs (16.5% vs. 4.5%). More than half (52.0%) of all the TGs reported being discriminated against; twice as many TG-SWs reported being discriminated in comparison to Non-SWTGs (55.8% vs 21.4%). More than half of all the TGs (53.3%) [TG-SW; 56.0%, Non-SWTGs; 32.6%] reported ever being physically hurt (hit or choked or threatened with a knife or other weapon), while 56% of all TGs [TG-SW; 58.3%, Non-SWTGs; 33.6%] reported being tricked/ lied into having sex without consent. Almost half of the interviewed TG (51.4%) [TG-SW; 54.3%, Non-

SWTGs; 28.3%] reported ever being beaten or otherwise physically forced to have sex. Approximately 20.0% of all TGs reported been arrested in the past 12 months. About 21.0% TG-SW and 9.7% of Non-SWTGs reported arrest in the same time period

The weighted HIV prevalence for TG was 7.1% (95% CI; 6.8, 7.4) [un-weighted prevalence 5.6% (95% CI: 5.0, 6.2)]. The highest prevalence for HIV overall for all TGs was reported from Larkana (18.2%) followed by Bannu (15%) and Karachi (12.9%). The weighted HIV prevalence reported in TG-SW was 7.5% (95% CI; 7.2, 7.8) [un-weighted prevalence 5.9% (95% CI: 5.3, 6.6)]. The weighted HIV prevalence among Non-SWTGs was 3.0% (95% CI; 2.4, 3.7) [un-weighted prevalence 2.7% (95% CI: 1.6, 4.3)].

Female sex workers

The average current age of FSWs interviewed was 27.9 ± 6.1 years, with little variation between FSWs of different typologies. Overall, 6.6% of FSWs were less than 20 years of age. The average age of initiation of sex work reported by FSWs was 22.1 years and were involved in sex work for 5.7 years. Brothel based FSWs initiated sex work at a youngest age of 19.9 years and reported being involved in sex work for the longest duration (mean: 6.5 years) than other types of sex workers (KK;5.4 years, Home-based; 5.6 years, Street-based; 6.1 years).

Approximately half of the FSWs (46.9%) were married, and small proportions were widowed (3.4%) or separated/divorced (12.9%). Among married, 82.9% were married with children. Among unmarried FSWs, majority (40.4%) worked in Kothikhana, followed by Home based FSWs (38%). The largest number of FSWs interviewed was living at homes (78.6%). A large proportion of FSWs (43.2%) reported being illiterate; illiteracy being more common among FSWs in brothels (65.59%) and least common among KK based FSWs (39.5%). Only 33.4% of all FSWs had a source of income other than sex work. The monthly median income from all sources reported was PKR 22,000 (US \$245), while monthly median income from sex work was PKR 20,000 (US \$210). Approximately one-fifth (20.1%) of FSWs interviewed did not belong to the city of interview. With the exception of street based FSWs, most FSWs (36.0%) relied on a "madam" as their main source of clients.

Overall, FSWs reported an average of 1.6 (SD 1.2) clients a day and an average of 34.2 (SD 35.6) clients per month. Condom use by FSWs with clients was generally low. Only 38% of FSWs reported that they consistently used condoms with clients in the last month, and 10.9% reported using it with non-paying partners. Overall, 15.6% of FSWs reported using a condom at their last paid anal sexual act. The corresponding proportions for condom use at last vaginal, anal and oral sex among all FSWs was 50.5%, 15.6% and 8.1%, respectively. Overall, 48% of all FSWs reported drinking alcohol and/or taking drugs in the past six months. Overall 5.9% of FSWs reported injecting drugs in the past twelve months and 12.5% reported having sex with a PWID in the same time period.

Overall, approximately 66.9% of FSWs had ever heard of HIV and/or AIDS, with brothel based sex workers reporting the highest level of awareness (76.4%). Only 50.8% of the FSWs interviewed knew that HIV could be transmitted by sexual intercourse. Less than a fifth (18.9%) of the FSWs knew that HIV can be transmitted through sharp instruments or needles/syringes and only 14.6% knew about mother to child transmission of HIV. Approximately 47% of FSWs were aware that using a condom will prevent HIV transmission, and 30% believed that sexual abstinence is a way to prevent HIV. Only 22.8% of all FSWs believed that they were at risk for acquiring HIV infection. About 29% knew where HIV testing services were offered and only 17.2% had ever been tested for HIV. Nearly 64% were aware of STIs, and 30% reported having an STI in the past 12 months. Only 28.1% of these received treatment.

More than one third of all the FSWs reported they have been discriminated because of their status of being a sex worker (35.6%). KK based FSWs reported highest level of discrimination. More than half of all FSWs (52.4%) reported ever being physically injured (hit or choked or threatened with a knife or other weapon). About half (48.9%) of the FSWs interviewed reported being tricked and/or lied into having sex, and being beaten and/or physically forced to have sex (48.9% and 48.6% respectively). Only 29.9% of FSWs were aware of HIV prevention programs (SDPs) in their city and only 8.3% reported utilizing the service. Services availed by FSWs in the past twelve months showed that obtaining condoms (4.8%) from the SDP was the most utilized service across all cities followed by requests for medications (4.3%).

Although HIV prevalence among FSWs was lowest among all key populations, however the concern is the higher prevalence of HIV in this group in comparison to the previous surveillance rounds. Overall weighted prevalence was 2.2% (95% CI: 2.1, 2.3) [un-weighted HIV prevalence 2.1% (95% CI: 1.8, 2.5)].

Men who have sex with men

The previous IBBS rounds focused on Male sex workers (MSW), while for this surveillance round, the criterion was changed to include all men who have sex with men (MSM). MSM were divided into two typologies: Male Sex Workers (MSW) and Non-SW MSM (Non-SW MSM). The predominant proportion of MSMs interviewed identified themselves as gay/homosexual men (68.7%). More than one fourth (27.8%) of all MSMs interviewed identified themselves as bisexual men. A larger proportion of Non-SW MSM identified themselves as bisexual men comparative to MSWs (30.9% vs. 27.3% respectively).

The average age of all MSMs interviewed was 23.9 ± 6.0 (median = 23). Approximately 90% of MSMs were less than 30 years of age, with the highest proportion (38.2%) between 20 and 24 years of age. Approximately 25% of the Non-SW MSMs were above the age of 30, whereas only 13% of MSWs were older than the age of 30 yrs. Three fourths of all MSMs interviewed reported being unmarried (74.4%); only 22.7% reported being currently married. On an average, MSWs started sex work at an average age of 16.7 years and had been involved in sex work for

approximately 6.9 years. The median total monthly income from all sources was approximately PKR 16,000 or US \$150.4. MSWs reported earning a median of PKR 8000 or US \$ 75.2 from sex work. Only 10.2% of all MSM migrated into the city where they were interviewed. Approximately 40% of MSWs solicited clients by roaming around in public places like bus stops and markets, which formed the largest mechanism of getting clients. A large proportion (38.6%) also reported using cell phones to access clients. In addition, referral through old clients was also reported by 13.8% of MSWs. On an average, the MSWs interviewed reported to have 1.7 sex partners per day, the average number in a month was reported to be 24.0 ± 16.3 . In addition to paid clients, approximately 59.6% of MSWs reported being involved in unpaid sex, having an average of 2.2 ± 2.4 non-paid partners in the past month. Only 8.6% of the MSWs reported regular condom use with paid clients; the proportion was even lower (4.1%) with non-paid sex partners. MSMs (Non-SW) reported having an average of 4.8 ± 4.6 non-paying sex partners during the past month. Consistent condom use (non-paid partner) was reported at only 8.3%.

Overall, 4.2% of all MSM interviewed reported injecting drugs in the past twelve months, while 4% of MSMs reported having had sex with an injecting drug user (PWID) in the past twelve months. Among Non-SW MSMs, only 3.2% reported having sex with a PWID in the past year, while 2.8% reported injecting drugs in the same time period. Approximately two thirds of MSMs (66.0%) had heard of HIV and/or AIDS. Knowledge about HIV/AIDS was higher among MSWs comparative to Non-SW MSMs (69.5% vs. 46.4). Knowledge of sexual transmission as a mode of HIV transmission was reported by 53.4% of all MSMs [MSW:56.4%, Non-SW MSM; 36.5%], whereas only 32.9% [MSW:35.1%, Non-SW MSM; 20.9%] knew that HIV could be transmitted through sharp instruments/syringe. Regarding modes of HIV prevention, 45.8% of all MSMs [MSW:48.4%, Non-SW MSM; 31.1%] knew condoms could prevent HIV transmission, and 29.9% believed that sexual abstinence could prevent HIV transmission [MSW:31.8%, Non-SW MSM; 19.2%]. Only 12.3% of all MSM [MSW: 13.3%, Non-SW MSM; 6.5%] knew that the use of clean needles/syringes could prevent HIV transmission. Approximately a quarter of all the MSMs interviewed (26.7%) reported ever testing for HIV and approximately one-fifth (21%) felt they were at risk of acquiring HIV infection. More than twice the proportion of MSWs reported ever getting tested for HIV comparative to Non-SW MSMs (29.3% vs. 12.6%). More than half of the MSMs interviewed reported being aware of other STIs (56.5%) and 18.4% reported being diagnosed with an STI in the past 12 months for which 17.8 received a treatment. Only 34.9% of MSMs were aware of a HIV prevention program (SDP) in their city, with a greater proportion of MSWs (38.6%) reporting awareness about SDPs comparative to Non-SW MSMs (14.2%). Service utilization was reported by 13.3% of MSMs the predominant proportion of whom were MSWs. Analysis showed that getting condoms from the SDP was the most utilized service (10.4%), followed by counseling (8.1%) and getting tested for HIV (8.0%).

One third of all the MSM reported being discriminated against. Twice as many MSWs reported discrimination comparative to Non-SW MSMs (34.1% vs. 15.9%). More than half all MSM (51.9%) [MSW: 55.4%, Non-SW MSM; 32.6%] reported ever being physically hurt or beaten or otherwise

physically forced to have sex. The overall weighted prevalence among all MSM was 5.4% (95% CI: 5.2, 5.6) [un-weighted prevalence 3.7% (95% CI: 3.3, 4.2)]. The weighted prevalence among MSW was 5.6% (95% CI: 5.4,5.8) [un-weighted prevalence 3.7% (95% CI: 3.2,4.2)]. The weighted prevalence among Non-SW MSM was 3.4% (95% CI: 2.9, 5.3) [un-weighted prevalence 3.4% (95% CI: 2.9,5.3)].

Overall 4.2% of MSM, 2.4% of TGs and 5.9% of FSW reported injecting drugs in the past twelve months. Furthermore 29.8% of PWIDs reported having sex with MSM/TG during the past six months. More than one third of the PWIDs interviewed (35.7%) reported paying a FSW for sexual intercourse in the past 6 months. Approximately 5% of TG, 16.9% of FSW and 4.0% of MSM reported having sex with a PWID during the past year.

CONCLUSIONS

Although the magnitude and timing of the spread of HIV has varied in various cities and provinces, the epidemic in Pakistan seems to follow a pattern which is similar to a rapidly propagating Asian HIV epidemic which is not new to the region. Based on the results and conclusions of this surveillance round, Pakistan needs to Scale-up services for key populations to contain HIV epidemic at its present level and to prevent a further spread to other KP members and into general population. A focused primary HIV prevention approach coupled with a multi-sectoral approach to achieve 90, 90, 90 through Fast Track approach and end AIDS by 2030 is needed. One of the use of the surveillance data collected in this surveillance round could be identification and prioritization of key areas where more research and inquiry is needed.

Overall, this surveillance round has further improved our understanding of the distribution of HIV and of the underlying determinants of HIV transmission. We have sufficient information to target a response, backed up with this available scientific evidence. The AIDS response must use this knowledge to mount a response that is more strategic and better coordinated, with accountability and transparency central to it.

1. BACKGROUND & INTRODUCTION

With an estimated prevalence rate of less than 0.1%, Pakistan continues to have a low-level HIV epidemic among general population² however, serial surveillance results indicate that concentrated epidemics have already established among key populations (KPs). As in several other regions, the HIV epidemic in Pakistan is characterized by high initial prevalence among injecting drug users (PWID), which has already expanded to Transgender /Transgender Sex Workers (TGs) with the potential to expand into female sex workers (FSWs)³. Pakistan faces a concentrated but a severe HIV epidemic among PWIDs, which first manifested in an outbreak of HIV among PWIDs in Larkana⁴. Since then, surveillance data shows that HIV is getting well established in PWIDs throughout the country and despite various preventive efforts, the infection rates among PWIDs steadily increased to 37.8% (37.3% to 38.3%) in 2011. Not only has the overall prevalence increased, but the number of sites with relatively advanced epidemics has also expanded. Surveillance data collected from all 17 cities in 2011 showed concentrated epidemics among PWID, while in a few cities like Faisalabad and DG Khan, HIV prevalence was reported to be almost 50% among surveyed population.

Of concern is the growing increase in the HIV prevalence among Transgender and Male sex workers which stood at 7.2% (6.8% to 7.5%) and 3.1% (2.8% to 3.4%) respectively according to the last National surveillance round of IBBS. With respect to TGs, concentrated epidemics were seen in cities with long standing PWID epidemics such as Karachi, Larkana, Sukkur and Lahore. Karachi also showed a concentrated HIV epidemic in MSMs as well. Although the HIV prevalence among FSWS still remains low, of concern is the fact that HIV is now beginning to show its presence. During 2007, only one FSW tested positive for HIV from a sample of 12 cities, while in contrast, during 2011, a total of 27 FSWS tested positive for HIV from the same number of cities. Even with lower prevalence rates, the sheer size of this population and its close link with the general population through a large bridge warrants close monitoring of this population to ensure successful prevention of HIV transmission. Trends in injecting behaviors have shown that the proportion of PWIDs reporting needle/syringe sharing reduced between 2005 and 2008 but has remained relatively unchanged during 2011. In contrast a higher injecting with a used needle reversed trends in 2011, while injecting alone has significantly decreased during this same time period.

² National AIDS Control Program & Canada-Pakistan HIV/AIDS Surveillance Project (HASP). Ante-natal Sero-prevalence of HIV in Pakistan, National Report 2011.

³ National AIDS Control Program & Canada-Pakistan HIV/AIDS Surveillance Project (HASP). HIV Second Generation Surveillance in Pakistan, National Report Round IV 2011.

⁴ ur Rehman N, Emmanuel F, Akhtar S. HIV transmission among drug users in Larkana, Pakistan. Trop Doct. 2007 Jan;37(1):58-9.

Sexual behaviors of sex workers were even more disturbing. Consistent condom use which is the key to prevent the sexual transmission of HIV infection, showed significantly low levels among certain key populations most notably MSWs and TGs. Given the potential for the spread of HIV infection among these populations and their possible roles in bridging sexual networks to PWID, this finding is a major cause for concern. The use of prevention services by the various key populations over time is mixed. Among PWIDs, after a significant increase in service utilization between 2006-7 and 2008, there appears to be a drop in the proportion of PWIDs using SDPs. Although 44% PWID reported that they know of and utilize services of prevention programs, the number are much lower and needs to be much higher for an efficient and meaningful coverage. Service utilization is further lower in sex worker populations and there is an urgent need to scale up services and coverage levels to a level which can halt the proliferation of HIV in these populations.

HIV Surveillance data has been used extensively to guide HIV prevention program in Pakistan. Owing to the information gathered through surveillance, the overall preventive response shifted its focus from screening and general education campaigns to HIV preventive services delivered through NGOs for key populations (KPs) particularly PWIDs. HIV prevention services were targeted to key populations, mass media campaigns aimed at raising awareness and reducing stigma, promoting safe blood transfusion and building management and institutional capacity. The implementation of targeted intervention made some progress with expanding coverage of an injecting drug users program; implementation of service delivery packages for male and female sex workers; jail inmates and truckers nationwide.

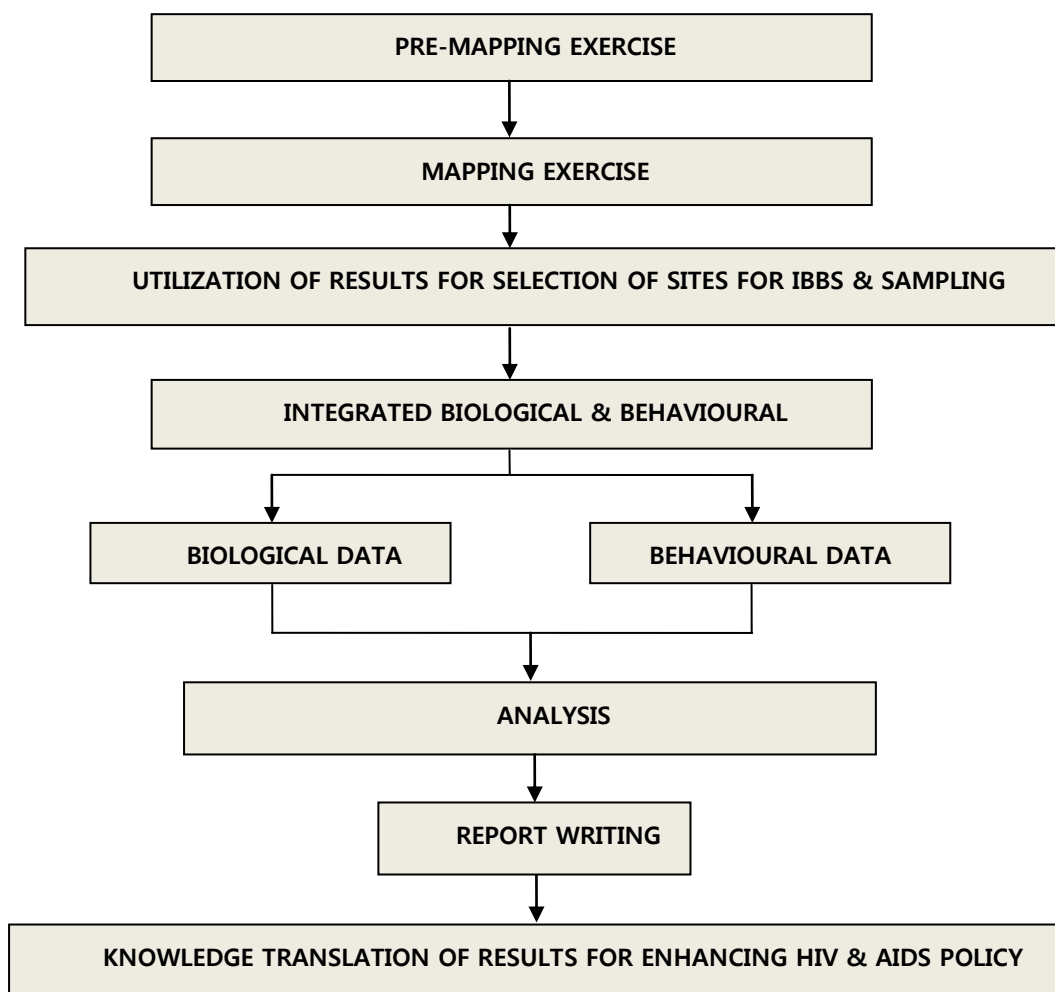
The most recent National surveillance data was collected in 2011 and the fast pace with which this epidemic changes, updated estimates and prevalence is essential for effective HIV prevention, thereby justifying the need for this 5th surveillance round. To that effect, the UNAIDS & Global Fund planned a National scale study including 23 cities/towns to determine the prevalence and behaviors among key populations. The study was jointly carried out by the Provincial AIDS Control Programs (PACPs), National AIDS Control Programs (NACP), UNAIDS and Global Fund through commissioning international expertise provided by the Centre for Global Public Health University of Manitoba Canada, local academic institutions/universities paired with national field teams with experience in collecting surveillance data in Pakistan.

The results of this SGS round will provide new insights to the HIV epidemic in Pakistan and will be used extensively to further shape the prevention programs in Pakistan.

2. RESEARCH STRATEGY

The SGS round followed the sequence of events for conducting Integrated Biological and Behavioral Surveillance of HIV, provided in the following pictorial overview (Fig. 2.1a).

Fig 2.1a: An overview of the methodological framework for SGS in Pakistan, 2016-17.



The specific objectives were to estimate the size of the selected Key populations through geographic and network mapping in different cities of Pakistan (Phase One – Programmatic Mapping) and then determine their socio-demographic profiles, HIV risk behaviors and HIV prevalence to inform the HIV prevention program in Pakistan (Phase Two – IBBS). Thus, there were two key aspects to this research and the final step was the knowledge translation of results for enhancing HIV and AIDS policies and programs.

3. RESEARCH METHODOLOGY

3.1 Key populations selected for IBBS

Following key populations were included for this IBBS round.

3.1.1 People who inject drugs (PWIDs)

"Any person, who has been injecting drugs regularly for non-therapeutic reasons in the past six months." The age limit was kept as 13 years or above

3.1.2 Female sex workers FSWs

In accordance with the UNAIDS Guidance Note on HIV and Sex Work, Female sex workers were defined as, "females who receive money or goods in exchange for sexual services, either regularly or occasionally, regardless of the site of operation". For IBBS the age for inclusion was limited to 13 years. Female sex workers are one of the most prominent key populations that exists in Pakistan and a number of typologies exist, including street-based, home-based, Kothikhana based, brothel based etc., etc., All of these typologies were identified and explored in the current mapping exercise.

3.1.3 Men having sex with men (MSM)

The term "men who have sex with men" is used to denote all men who have sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation, and irrespective of whether they also have sex with women". The term does not refer to those men who might have had sex with other men as part of sexual experimentations or very occasionally depending on special circumstances. Our case definition included men who regularly frequent locations/sites (either geographical or virtual) to find other male partners. Men who sell sex for money or material benefits, will also be included in the study. For IBBS, all MSM, aged 13 years and above were included in the study.

3.1.4 Transgender population (TGs)

"Any person who identifies him/herself as a transvestite/transsexual and undertakes sexual activity with a man." TGs who sell sex for money or material benefits, will also be included in the study. For IBBS, all TGSs, aged 13 years and above was included in the study.

Any of the eligible subjects who did not want to be included and were not willing to provide informed consent were excluded from the study. Moreover, persons who had been previously interviewed or contacted during the same round of surveillance (either at a different site or city) were also not included.

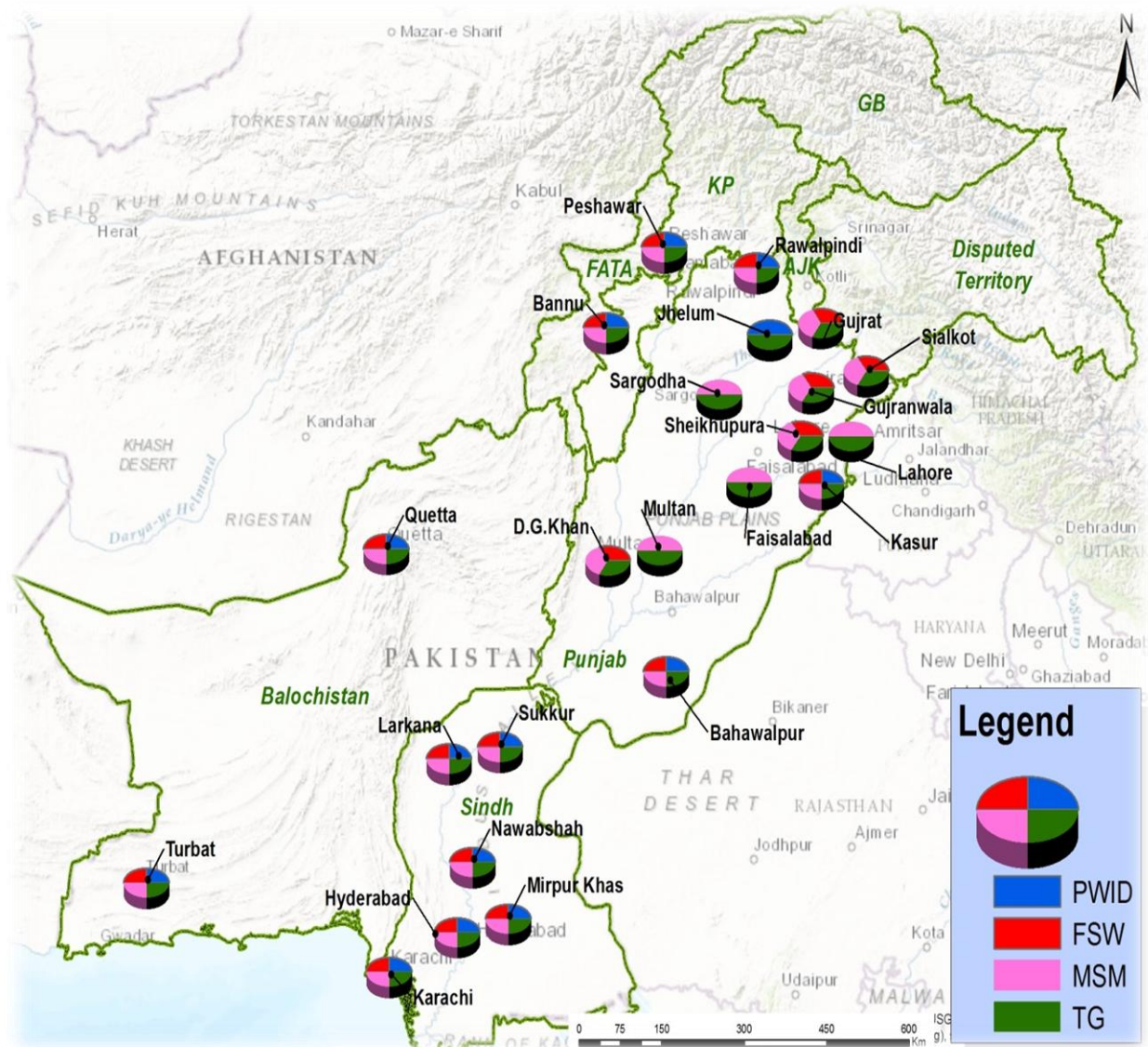
3.2 Study Sites

Data for IBBS was conducted in the same sites where mapping was conducted. Following were the sites.

Table 3.2a: Cities and KPs which were selected for IBBS, Pakistan 2016-17

Province	City	PWID	FSW	MSM	TG	Data collection
Punjab	Lahore			✓	✓	Nov-Dec 2016
	Multan			✓	✓	Nov-Dec 2016
	Faisalabad			✓	✓	Nov-Dec 2016
	Sargodha			✓	✓	Nov-Dec 2016
	Gujranwala		✓	✓	✓	Dec 16-Jan 17
	D.G Khan		✓	✓	✓	Nov-Dec 2016
	Gujrat		✓	✓	✓	Nov-Dec 2016
	Sialkot		✓	✓	✓	Nov 16-Jan 17
	Sheikhupura		✓	✓	✓	Nov-Dec 2016
	Rawalpindi	✓	✓	✓	✓	Nov-Dec 2016
	Bahawalpur	✓	✓	✓	✓	Nov-Dec 2016
	Kasur	✓	✓	✓	✓	Nov-Dec 2016
	Jhelum	✓			✓	Nov-Dec 2016
Sindh	Karachi	✓	✓	✓	✓	Nov-Dec 2016
	Hyderabad	✓	✓	✓	✓	Nov-Dec 2016
	Sukkur	✓	✓	✓	✓	Nov-Dec 2016
	Larkana	✓	✓	✓	✓	Nov-Dec 2016
	Nawabshah	✓	✓	✓	✓	Nov-Dec 2016
	Mirpurkhas	✓	✓	✓	✓	Nov-Dec 2016
KPK	Peshawar	✓	✓	✓	✓	Nov-Dec 2016
	Bannu	✓	✓	✓	✓	Nov-Dec 2016
Balochistan	Quetta	✓	✓	✓	✓	Nov-Dec 2016
	Turbat	✓	✓	✓	✓	Nov-Dec 2016

Fig 3.2a: Cities and KPs which were selected for IBBS, Pakistan 2016-17



3.3 Sample Size

Sample sizes for each key population were calculated based on assumptions in which baseline prevalence and expected change in prevalence were varied to get a maximum sample size. Behavioral data from previous surveillance was used to determine baseline prevalence rates to inform the sample size calculations. The following formula was used to determine the sample size for target groups:

$$n = D \frac{\left[\sqrt{2P(1-P)}Z_{1-\alpha} + \sqrt{P_1(1-P_1) + P_2(1-P_2)}Z_{1-\beta} \right]^2}{\Delta^2}$$

Sample sizes for each high risk group were calculated based on assumptions in which baseline prevalence and expected change in prevalence were varied to get a maximum sample size:

P1 = estimated prevalence at baseline (varied for different groups).

P_2 = expected prevalence in future (detect a change of 15%)

$$P = (P_1 + P_2)/2$$

$$\Delta^2 = (P_2 - P_1)^2$$

$Z_{(1-\alpha)}$ = 95% level of significance

$Z_{(1-\beta)}$ = Power of the study set at 80%

Table 3.3a: Assumptions used for sample size calculation for each KP

KP	Estimated %	Expected change	Design effect	Final Sample size
MSM	30	30 to 45%	2.5	350
TG	30	30 to 45%	2	281
FSW	34	34 to 49%	2.5	363
PWID	41	41 to 56%	2	303

Table 3.3a provides assumptions for various key populations used for calculating sample sizes. Condom use at last sex was taken as the key risk behavior (P_1) for FSWs, MSMs and TGs, while needle/syringe sharing at last injection was used as the key behavioral risk factor for PWID. The values for these variables were taken from the last SGS round. A higher design effect was used for both FSWs and MSM owing to the higher variability among typologies within the population. Based on these calculations, varying numbers of subjects were calculated for each key population to optimize a meaningful analysis. The numbers were inflated by 10% to accommodate for non-responsive and data errors.

Table 3.3b: Sample size achieved for PWIDs, FSW, MSM and TGs for IBBS, 2016-17

Province	City	PWIDs	FSWs	MSMs	TGs
Punjab	Lahore	-	-	350	277
	Multan	-	-	350	280
	Faisalabad	-	-	350	280
	Sargodha	-	-	350	280
	Gujranwala	-	304	312	280
	D.G Khan	-	364	302	144
	Gujrat	-	252	111	103
	Sialkot	-	193	99	196
	Shiekhupura	-	363	257	270
	Rawalpindi	302	364	350	280

	Bahawalpur	292	352	345	265
	Kasur	302	364	350	280
	Jhelum	302	-	-	80
	Karachi	302	387	350	295
	Hyderabad	302	364	350	280
Sindh	Sukkur	302	364	350	280
	Larkana	302	364	349	280
	Nawabshah	302	364	349	280
	Mirpurkhas	302	364	300	156
KPK	Peshawar	302	265	281	230
	Bannu	146	196	350	40
Balochistan	Quetta	302	364	350	280
	Turbat	302	72	218	55
TOTAL		4,062	5,660	6,773	5,191

3.4 Sampling Strategy

Since a list of spots where key populations congregate was available from the mapping study that preceded IBBS, recruitment of a representative sample of the key populations being sampled through various sampling techniques was possible.

- **PWIDs, MSMs, TGs and Street based FSWs** were recruited through multistage cluster sampling. The top 10 spots in each zone were identified from mapping data, and the study subjects were recruited through a random process. In cities where the estimated numbers of PWID or MSMs were smaller than the required sample size, a “take all” approach was used.
- **FSWs** were distributed among the identified typologies (brothel based, street based and kothi khana/home based), proportionate to size. Spots from where sampling was to be done were already identified by the mapping work preceding data collection. At each spot, study subjects were recruited through a random process. **Brothel Based FSWs** were selected through systematic random sampling of brothels (i.e. systematic sampling from a list of FSWs using a random start) and a “take all” approach was used if the number of brothel-based FSWs were less than the required sample size. **Street Based FSWs** were selected through multistage cluster sampling, in a manner similar to PWID and MSWs. **Kothi khana and Home Based FSWs** were recruited through a similar sampling technique used for TGs after applying sampling weights (based on zonal distribution; Zones were smaller geographical units identified in mapping). Network operators were randomly selected and 2 FSWs (1 KK based and 1 Home based FSW per NWO) working with these network operators were recruited

through a random process.

3.5 Data Collection Instruments

Data were collected by trained interviewers using structured questionnaires. Different questionnaires were used for all different key populations. The questionnaires were originally designed in English and subsequently translated into Urdu; the Urdu versions were used to collect the required data. Questionnaires included questions on socio-demographic and personal characteristics, as well as a core set of risk behavior indicators to monitor the behavioral patterns of key populations.

Following are the principal variables for which data was collected:

- *Socio-demographic variables:* age, gender, education, living arrangements, family information, income, migration status, employment, professional background and travel history both within Pakistan and abroad.
- *Profession related variable:* number of clients, charges, types of services offered, etc.
- *Injecting risk behavior and practices:* Types of drugs used and their routes of administration, length of drug use and injecting careers, drug use in group, sharing of equipment and needles, frequency of drug use/injecting etc.
- *Sexual risk behaviors:* Age of initial sexual intercourse, number of sexual partners, regular and casual partners, condom use, anal intercourse, etc.
- *Knowledge and information about HIV and other STIs:* Knowledge about HIV and/or AIDS, routes of transmission, methods to prevent transmission, perception of self-risk, etc.
- *Stigma, Discrimination and Violence*
- *Coverage and utilization of health and HIV prevention services, etc.*

3.6 Training on IBBS Data Collection:

A three day master trainers training was conducted by the technical team of the University of Manitoba, which focused on providing information and points of clarification to the interviewers on issues such as:

- Biological and Behavioral Surveillance
- Understanding HIV and/or AIDS: facts and myths
- Basic interviewing skills with special emphases on interviewing about sex and injecting drug use issues
- Ethical issues related to HIV and collection of IBBS data, and the importance of ethical consideration during interviewing. Ethical issues including confidentiality acquiring informed consent
- Values and attitudes
- Different aspects of field work accessing vulnerable groups subject selection and

recruitment process explaining the rationale and objectives of the study to the subjects

- Conducting HIV testing using Rapid tests
- Pre-testing, post testing Counseling for both adults and adolescents.
- Referral process of both HIV negative and positive study participants

Participants were divided in groups and practiced questionnaires by doing role plays for different questionnaires. Participants also performed mock interviews e.g. consent taking, registration, conducting interview, role play of pre-testing or post testing counseling etc.

Workshop participants included members of the data collection teams (including interviewers, social mobilizers), data management personnel, field supervisors, and members of the AIDS Control Programs.

Two such workshops were conducted in the South and North region where 4 to 5 Master trainers from each data collecting team were trained. The master trainers trained in the core regionl IBBS workshops provided local training to field teams in 2-3 days of local training workshop which were supervised by members of N/PACP monitoring teams as well as the technical support organization.

3.7 Data Collection and Fieldwork

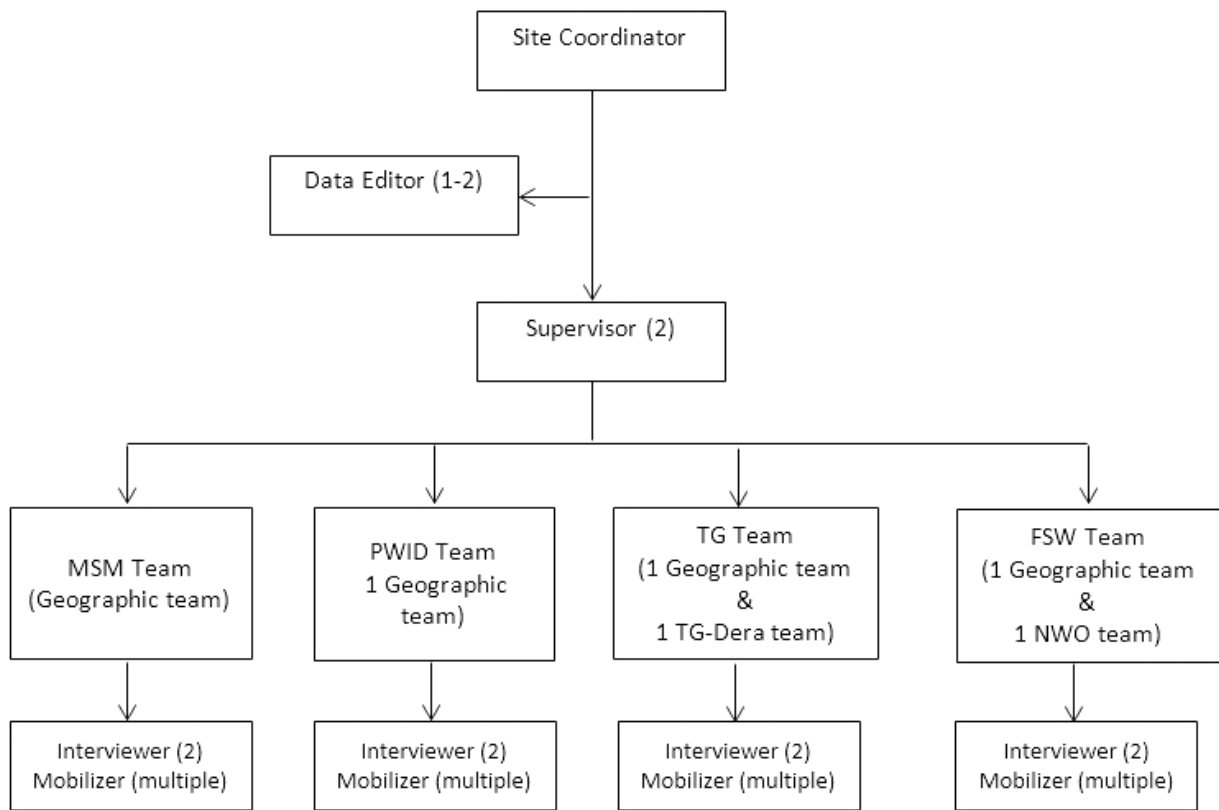
At each site, a central field office was established which served as the hub of all field activities and a coordinating place for all field teams. This office had enough rooms to conduct interviews of all subjects who were to be interviewed in a central isolated location.

3.7.1 Field Teams

Depending on the site as well as the key populations (KPs) targeted, varying numbers of field teams were being engaged in data collection supervised by a study coordinator. The basic structure of each team was as follows:

- Site coordinator
- Team Supervisors
- Social Mobilizers
- Interviewers
- Data editors

Fig 3.7.1a: Field Team composition in each city for IBBS, Pakistan 2016-17



3.7.2 Venues for interviews

Venues that were used for conducting interviews varied depending on the population being surveyed. Identified eligible participants took part in a face-to-face interview with trained study interviewers.

All KPs recruited from street spots (through multi stage cluster sampling) were brought to the central office and were interviewed there. This included all PWIDs, street based FSWs, MSM operating at venues and street based TGs. FSWs operating in brothels, homes and Khotikhana were interviewed at their site of operation. Likewise, Dera based TGs were interviewed at the Dera.

3.7.3 Recruitment

The social mobilizer facilitated the recruitment of an individual, selected randomly from the spot. Once the social mobilizers identified all eligible participants at a selected spot, the recruiter/interviewer randomly selected a key population member using the selection criteria for each KP (see case definitions for all KPs, section 3.1) The mobilizer was required to facilitate the process of recruitment by approaching the selected subject, introducing the study and also sought consent for participation. If the eligible participant refused, the next available community member was being recruited. If the interview was taken at the same site, the interviewer

forwarded to the next step. If the interview was taken in the field office, the subject was transported to the field office in the transport provided.

3.7.4 The interview and HIV testing Process

Once the person was ready to take up the behavioral interview, a study code was applied. The same code was used for the biological as well as the behavioral data, and was provided by the team supervisor. The consent form was read aloud to each eligible participant. This form provided the participants with an overview of the objectives of the study, the confidential nature of the interview, the right of the participants to refuse to answer questions, as well as the right of subjects to end the interview at any time. Consent was also taken for HIV testing. To maintain confidentiality of the participating individuals, they were not asked to sign the informed consent form, but the interviewer signed on their behalf.

Once informed consent was obtained, pre-counselling for HIV testing was done and blood sample was taken for the first HIV test (test 1 = Alere Determine HIV-1/2 Ag/Ab Combo). The collection of the samples involved the use of a lancet device that automatically retracted so that accidental skin punctures were virtually impossible. After the participant washed their hands with an alcohol-based hand sanitizer, the area to be punctured was sterilized with an alcohol pad and allowed to dry. The lancet device was placed on the selected area and then depressed. This resulted in a puncture of the skin and the subsequent formation of drops of blood that were then, collected and HIV antibody tests were performed.

While the results of the test were awaited, administration of the questionnaire was commenced by the interviewer asking questions and filling out the questionnaire. The administration of the questionnaire took approx. 25 minutes (on average) which varied depending on the participant's response. By the time the behavioral interview was completed, the test results of the first HIV test were also available. It was foretold that as 02 rapid tests were being performed, a second sample will be needed if the screening test showed positive or indeterminate result.

If the result of the first rapid test was negative, no more testing was done. However, the participating subject was still referred to a VCT center and service delivery (if available).

In case the test result was positive, another rapid test was done, (test 2 = Uni-Gold HIV)⁵.

Following the results (+ve or -ve) post-test counselling was done and the subjects were referred to the VCT center and further to HIV Treatment care and support in case of a positive test. Fig 3.7.4a and b show the interview and testing protocol provided to the field teams.

⁵ Pakistan Country Strategy for HIV testing and Counselling based on Situation & Response Analysis, update December 2013

Fig 3.7.4a: Interview and HIV testing protocol for conducting Office based Interviews

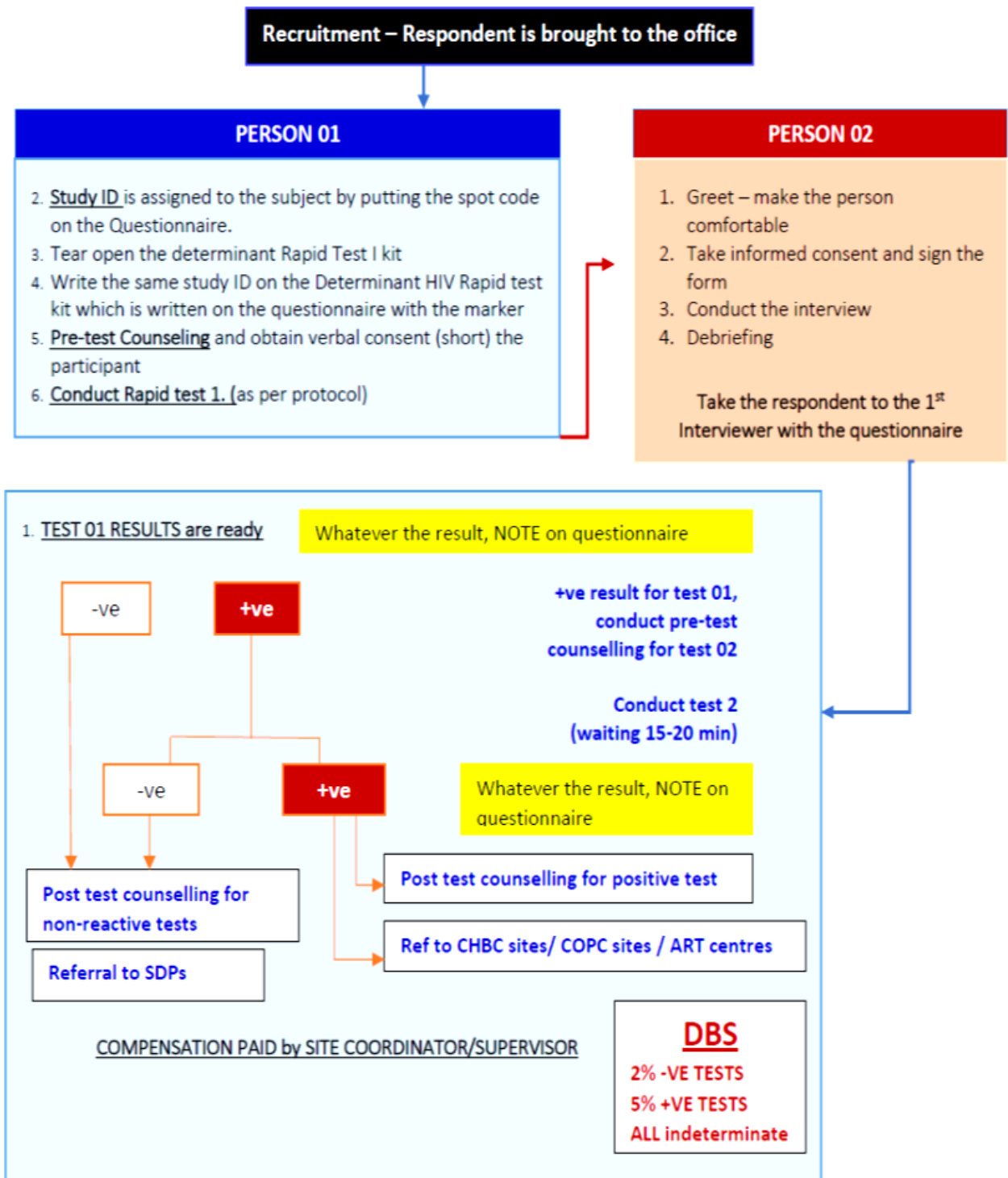
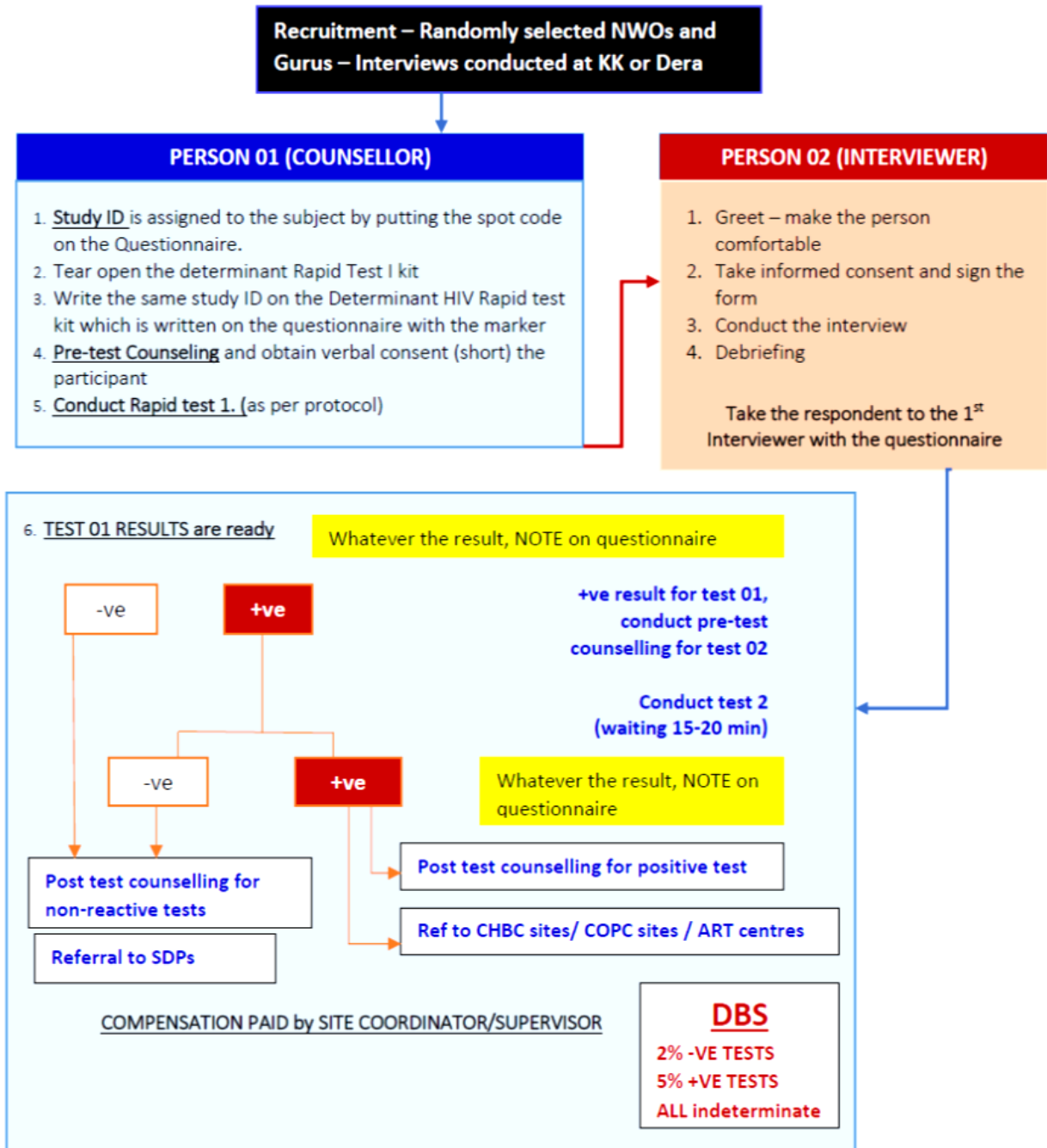


Fig.3.7.4b: Interview and HIV testing protocol for conducting field based Interviews



For all indeterminate tests, 2% HIV negative and 5% HIV positive tests, a Dried Blood Spot (DBS) specimen using Hemospot device was collected to be subsequently confirmed by the National reference HIV laboratory (NRL) at NACP.

3.7.5 Debriefing, Compensation and Referrals

After completing the interview, a debriefing session was held with participants so as to allow the interviewer to respond to any questions that the participants had. Information was also provided to participants during this session on the modes of transmission and prevention of HIV and primary health care services.

All participants were compensated for their time and participation in the study. The amount of compensation was different for each KP and was proportional to make up for the time they are away from their work. FSW were paid 800 PKR (approx... 8 USD), PWID were paid 200 PKR (approx. 2 USD), while MSM and TGs were paid an amount of 400 PKR (approx. 4 USD).

A referral system was developed, where all participating members of KPs were referred to the closest VCT center and HIV service delivery program if available for that specific key population in that city. In case of a positive result, they were connected to the HIV care and support services. Adolescents participating in the study were referred to available child welfare services in the city.

3.7.6 Refusals

According to the protocol, if a participant agreed to provide questionnaire information, but not to undertake HIV test, only the questionnaire was being administered and compensation was to be provided. However, the participant was not counted toward achieving the target sample size. Similarly, if a person refused to participate in the study, the reasons for non-participation were asked and noted down along with the gender and approximate age.

3.8 Biological samples shipping and storing

HIV testing was done according to National HIV testing guideline in which two rapid tests were used and result was communicated to the respondent. Upon completion of interview, consenting participants were requested to provide a blood sample for HIV antibody testing. Collection of blood samples involved use of a lancet device pen that automatically retracted so that accidental skin punctures were virtually impossible. After participants washed their hands with an alcohol-based hand sanitizer, the area to be punctured was sterilized with an alcohol pad and allowed to dry. The lancet device was placed on the selected area and then depressed. This resulted in a puncture of the skin and the subsequent formation of drops of blood that were collected and HIV antibody tests were performed. It was foretold that as two rapid tests were being performed, a second sample will be needed if the screening test showed positive or indeterminate result. Dried blood spots were taken on Hemo-spot device for 2% of HIV negative test, 5% of the HIV positive test and all indeterminate rapid tests. The Hemo-spot device was a cartridge containing an absorbent paper and desiccant covered with an application surface that contained a small opening to allow entry of blood. One to two drops of blood from a finger prick by lancet were

applied, the cartridge was closed and the desiccant rapidly dried the sample. Once the device closed, the sample was ready for shipping or storage while the moisture-tight cartridge and tamper-resistant latch assured samples remain uncompromised. Each Hemo-spot device was coded with the unique subject identifier number at the back of the device.

The specimens were handed over to team leaders and subsequently to the study coordinators on a daily basis by the data collection staff. These were in turn transported weekly to National Reference Labs on completion of data collection.

3.9 Biohazard Waste Handling and Occupational Exposure

A set of guidelines entitled Universal Precautions for Prevention of Transmission of HIV, Hepatitis B Virus, and Other Blood borne Pathogens in Health-Care Settings had been developed by Family Health International (Appendix 1). These guidelines were being followed in this study. In the extremely unlikely event of a needle stick injury from the lancet, a referral was to be made to the nearest tertiary care hospital where local protocols for occupational exposure were to be followed.

All biological waste was collected in a biohazard bag and was transported to the local District Head Quarter hospitals or another hospital where incinerator was available for incineration. In case an incinerator is not available at a site, WHO guidelines for disposal of biohazard were followed.

3.10 Data Management

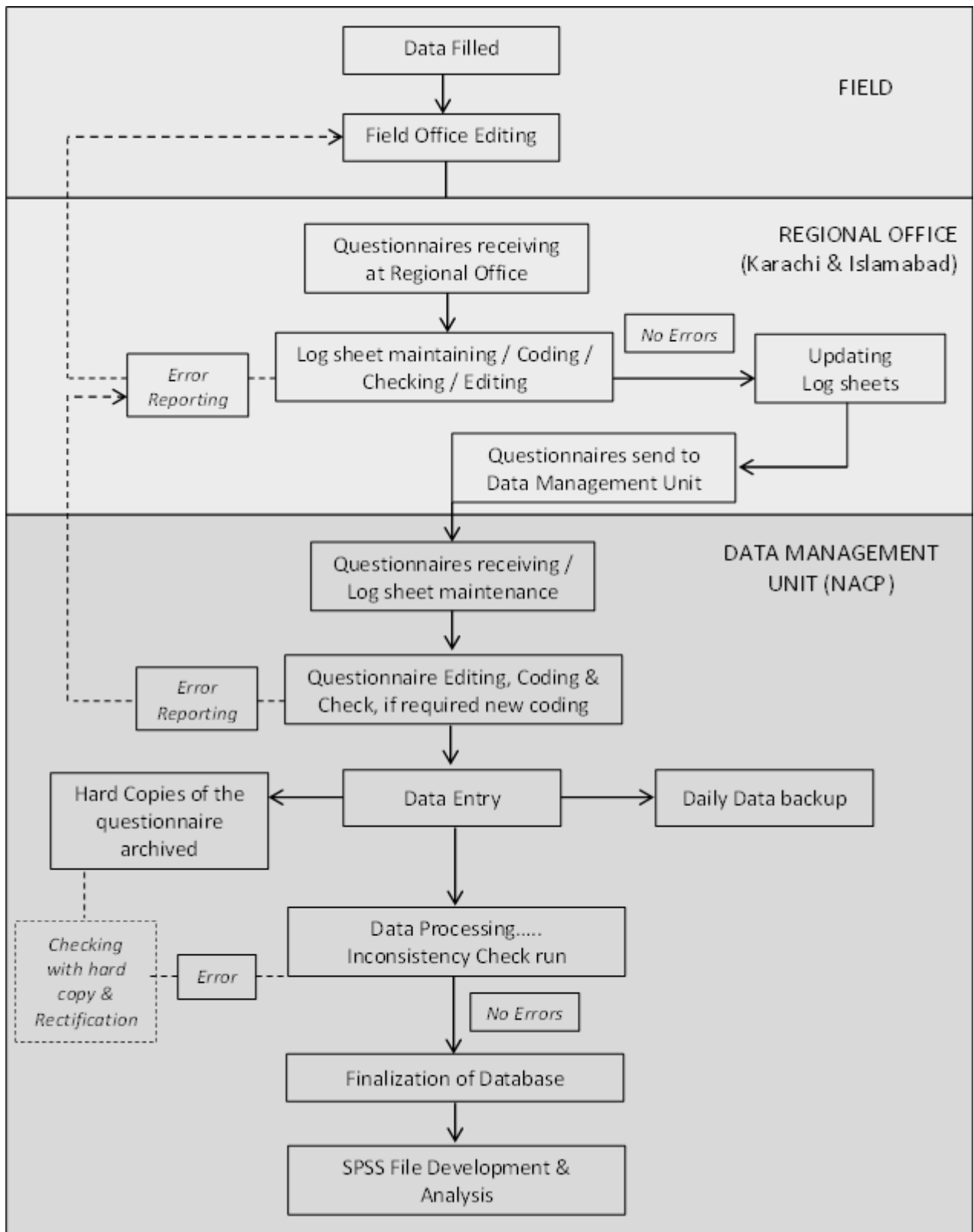
Data was managed at various levels:

- i) Field data management
- ii) Regional Data Management
- iii) Technical support Team/unit

In the field, the interviewer was providing hard copies of the questionnaires to the relevant supervisor and to the Data Editor on a daily basis. Each supervisor was checking the questionnaires for completeness, appropriateness and responses to difficult questions. Detailed editing included coding of responses for open ended and semi-open ended questions, which was conducted by Data Editors who provided feedback to the interviewers. All coding was done centrally at Data management unit (DMU), NACP Islamabad

Edited questionnaires were sent to regional data management units set up in Karachi and Islamabad weekly. All questionnaires from Sindh and Baluchistan were sent to Karachi regional office set up by the implementing NGO, while questionnaires from Punjab and KPK were sent to the regional office management unit. These regional offices had trained editors who were further supervised by senior technical staff of the implementing NGOs. Regional office editors were

Fig 3.10a: Data flow and management scheme for SGS Data, IBBS Pakistan 2016-17



responsible for checking the quality of editing done at field level and also provided feedback to field editors/supervisors on interview quality. Editors were also responsible to get new codes for non-coded responses from DMU. Upon satisfactory editing and coding of questionnaires as

checked by the site supervisors it was sent to the DMU at NACP.

At the Data Management Unit (DMU), the UM staff was directly responsible for data receiving, handling and management. All responses to open ended questions were done centrally by the DMU staff. A Data Coordinator maintained an electronic log sheet and maintained a coding list. All questionnaires were further checked for any errors in editing or coding for providing feedback to regional office. Any issues identified were rectified by DMU editors before entering into the data base. The database manager at DMU was responsible for all data entry and also conducted data entry error checks, validating and finalizing the database through performing inconsistency checks, limits value checks etc.

Although HIV test results were noted on the questionnaires, a separate sheet was included along with the questionnaires with study codes of all subjects providing HIV status. The biological and behavioral information was linked using this list and confirming the status of each subject by verifying it through information noted on the questionnaire.

The final data set was converted to SPSS™ files for analysis. The electronic data was password protected and only authorized officials had access to the data files. All hardcopy data was stored in the National AIDS Control Program office in a secure room.

3.11 Quality Assurance

3.11.1 Behavioral surveillance

At the field level, the team supervisors were responsible for quality assurance of behavioral data collected. Supervisors were responsible for getting at-least 25% of the interviews directly observed by one of the senior members of the team or the site coordinator. Supervisors were also responsible to ensure eligibility, completeness and consistency of completed questionnaires at the end of each day. Any questionnaires with significant errors were being discarded.

The site coordinator also ensured quality of data collected by randomly checking at-least 5% of the forms through random checks.

Independent of the field team, a monitoring and quality assurance (M&QA) team was hired by NACP with support from UNAIDS and PACPs. The monitoring staff paid random visits to various field sites and directly observed the interview procedures. The team confirmed sampling methodology, recruitment procedure and verified that the protocol was adhered to in the field.

3.11.2 Biological surveillance

As already mentioned, the National reference HIV laboratory was engaged to conduct QA of the HIV blood testing. In addition to transporting all HIV indeterminate samples, 5 % of all positive samples and 2% of all of the negative samples were also transported to the lab for confirmation of results as a quality assurance procedure.

3.12 Ethical Considerations

The study protocol was designed to meet international ethical protocols by taking effective measures to avoid risk, protect individuals' rights, and ensure safety of all study participants. Protecting the rights of individuals of the study population during an integrated behavioral and biological surveillance (IBBS) is of an utmost priority.

The study protocol was reviewed and approved by Pakistan Medical Research Council (PMRC). In addition, all members of the Technical Working group were provided copies of the protocol for their inputs and suggestions to incorporate all ethical principles of conducting research with key populations. All efforts were made to follow the research protocol to ensure harm minimization and that all those involved in the data collection were appropriately trained and familiar with the study protocol and monitoring measures were in place for quality control.

3.12.1 Safety of the field teams

A number of steps were taken to ensure the safety of the team.

- a) Field team members were provided with identification cards/letter from the provincial health department. Each team member was required to carry the IDs/letter any time they are in the field.
- b) Contact was made with the local community police office by the Coordinator to inform them about the research and solicit support.
- c) Each field team member was required to have a Cell phone, for which call credit was provided for emergency calls.
- d) Field team members were not permitted to work alone. All fieldwork was done in (at least) pairs. Female interviewers were always accompanied with male colleagues and at no time were allowed to work alone or without the presence of a male colleague in the team.
- e) A session on security measures included in the training program, where experiences and lessons learned from previous projects were shared and discussed. Training also included how to assess for safety and potential hazards in an area. Safety concerns included areas that are isolated, poorly lit, and/or identified by informants (or team members' own experiences) as being unsafe. If staff was unsure about the safety of an area, this was worked through with the Coordinator, including the implementation of safeguards to proceed. These included only visiting the area during the day, when no large groups were present in the area.
- f) In the course of fieldwork, staff was permitted to leave a location if they felt that it was unsafe. This was known by their partner/teammate(s), and the coordinator was to be informed of their decision to discuss the next steps. Constant contact was maintained between the field team and Coordinator while the team was in the field. This was

undertaken in the form of phone contact or text message at least twice a day with the team's exact location, and an ongoing assessment of safety.

- g) Safety was a regular item for de-briefing every day. The team was to discuss any untoward situations or security threats faced in the field and discuss measures to avoid or mitigate similar situations in the future.
- h) All safety issues/concerns were to be documented. All incident reports were retained by the Coordinator for the duration of the project. If required the technical Advisory Group and Coordinator responded to all incident reports within 24 hours.

3.12.2 Safety of the key populations

SGS has been successfully conducted in Pakistan over the last many years and no harm to a community or its individual members has ever been reported. The following considerations were incorporated into the study design:

Community leadership and involvement: It was not possible to implement this study adequately without the explicit and active involvement of the local population representatives, beginning with the initial discussions, through formative stages, qualitative work, and any mapping and survey elements used. In effect, the community was given the power to make decisions on how this project was implemented. If community members or other stakeholders at any stage expressed a concern (confidentiality, other risks, etc.), these were addressed to the satisfaction of both stakeholders and the research team.

Safety of the target population: Considerable effort was taken to maintain the safety of respondents. It was acknowledged that completing an interview comprising potentially sensitive questions in a public place could cause discomfort or even put respondents at risk. The team was trained to ensure that interviews were undertaken in a private place and that the initial approach to a potential respondent did not compromise the safety of the respondent (nor their own).

Confidentiality of responses: Strict measures were taken to ensure and maintain participants' confidentiality. No nominal information was required or used for any part of the investigation. No written consent was sought. A non-identifying coding system was used to track study data while assuring non-disclosure of participants' identities. No initials were collected and no linking of individuals was possible with future studies. All survey related materials (e.g., completed questionnaires, etc.) were kept in a secure and locked cabinet at the survey field office, which was accessible only to the study coordinator and staff. Electronic data was password protected, and only PIs and authorized officials had access to the data files. The final report does not contain information which could lead to identification of spots and places where key populations congregate. The tables and maps presented in the report are population estimates and do not

include details about individual spots nor persons. Details on spots and key populations are provided separately to PACPs, the confidentiality of which is assured by the organization.

3.12.3 Recruitment Process

Participation was voluntary and no coercion was used in the recruitment process. Individuals who refused to participate in the study were not adversely affected in any way. List of spots from where KPs were to be recruited was provided to site coordinator and supervisors. At the selected spot or location, individuals were selected with help of social mobilizers. On refusal or non-availability of the subject the next participant available on the spot/location was invited to participate. Participation in the study was entirely voluntarily, no coercion was used either from study team or social mobilizers for recruitment. Anyone wishing to find out about more information on the survey was given contact details of the study Coordinator or members of the local research team. All participants were given a thorough briefing on the survey and an explanation of the procedures. All participants were informed of the procedures that would ensure their confidentiality.

3.12.4 Informed Consent

It was very important to obtain informed and voluntary consent from the respondents before proceeding with the IBBS. The consent form helps educate the respondents on the purpose of the study, its benefits and risks, its confidentiality, and what participation will bring about; Respondents/participants were given the option of choosing how/if they would participate for the study. Recruitment of participants was conducted only after describing the study procedures and obtaining informed consent. During the process of obtaining informed consent, participants were clearly informed of their participation is voluntary and that non-participation would have no negative consequences in terms of access to programs or services.

For IBBS the Informed verbal consent was taken through a standard consent form at the beginning of the questionnaire that was read out to the participant by the interviewer. For study participants, less than 18 years of age, assent form was developed which was read and explained by the interviewer. The interviewer subsequently signed the appropriate place on the consent/assent form to indicate his/her willingness before proceeding with data collection. Understanding for the purpose of the risk behavior survey, the potential risks involved (i.e. during HIV testing or collection of the blood spot), and willingness to complete the interview and provide a finger prick blood sample constituted voluntary and informed consent. All participants were informed of their right to refuse or answer any questions with which they did not feel comfortable; withdraw from the survey at any time; during the interview or blood sample collection.

3.12.5 Compensation

The sex workers study reimbursed the participants. For IBBS compensation was to be provided to the participants in consistent with the amount they would receive and engaged for an equivalent amount of time in the normal income generation activity. i.e. approx 8 USD for FSWs and 4 USD for MSM and TGSs. For PWID, the compensation is 2 USD.

In case the study subject had already begun but withdrew from the interview before finishing and was not willing to continue further, s/he was still being compensated. If study subject did not want to participate after listening to the study information and outline of consent process, he/she was not being compensated.

3.13 Limitations:

A few limitations of IBBS needed to be considered:

- There might be some over or under sampling of some key population sub-types especially the ones that are hidden and hardest to reach. Thus, most MSM operating through the internet or mobile apps were not represented in the sample. Likewise, some high-class sex workers and MSM might be missing out as it was not possible for the field teams to include them in the study.
- Most of the questions were related to exposures that took place in the past leading to potential recall bias. In order to minimize recall bias, interviewers were well trained in probing techniques.
- Information collected from the study subjects was entirely based on self-reported data. Although research has shown that self-reported data when obtained under non-threatening conditions is reliable, an association between self-reported HIV risk behaviors and socially desirable responding has been documented in the literature. Steps to minimize social desirability bias in our study included:
 - Providing private and confidential areas for interviewing,
 - Stressing the confidential nature of the survey,
 - Using interviewers who are experienced in working with vulnerable populations
 - Establishing rapport, and conducting risk behavior counseling/debriefing after each interview.

4. PEOPLE WHO INJECT DRUGS (PWIDS)

A SUMMARY OF KEY FINDINGS

- Among all interviewed PWIDs, 99.4% were males.
- Average age of PWIDs was 31.7 years \pm 8.7 (median = 30 years), with approximately 44% of the PWIDs being less than 30 years of age.
- Approximately 50% of the PWIDs were unmarried and 37.7% were currently married. Of those PWIDs who were married 86.1% had one or more child.
- Nearly 40% of the PWID interviewed were illiterate, 62.4% lived at home, 30.4% in open spaces i.e. street or shrines and 58.9% live with their families. Median monthly income was 10,000 PKR.
- On an average, PWIDs started injecting drugs at the age of 26.5 years, and were injecting for an average of 5.2 years at the time of the survey. The youngest average age of initiation was reported by PWIDs in Bannu and Larkana at 23.3 years, while Rawalpindi had the oldest average age of initiation at 33.5 years. PWIDS from Nawabshah and Kasur reported injecting drugs for the longest duration (10.8 and 9.0 years respectively). The average duration of injecting was lowest among PWIDs from Peshawar and Quetta (2.6 and 2.9 years respectively)
- A significant proportion of PWIDs belonged to the city where they were interviewed (89%).
- More than half of PWIDs surveyed (56.8%) reported injecting two to three times a day in the past month, 31% reported injecting once a day while 11.3% reported injecting more than three times a day. The average number of injections per day ranged from 1.2 to 3.1 injections per day with Karachi and Bahawalpur reporting the highest number of injections per day (avg=3.1 and 3.0 respectively) while Peshawar reported the lowest number (avg=1.2).
- Public spaces including parks, streets and/or open areas were most commonly cited as venues where respondents injected for the last time (66.1%). A lesser proportion of PWIDs reported injecting drugs at home (14.9%) and Shrines/darbar (11.2%).
- Poly drug use was reported from nearly all cities and Avil (injection containing antihistamine pheneramine maleate) and heroin were the drugs of choice in most cities.
- 38.8% reported always using a new syringe, while 19.6% reported using a new syringe most of the time in the past one month
- Approximately 31% of the PWIDs reported sharing needle/syringe with other PWIDs at their last injection. Sharing needle/syringe was most commonly reported from Bannu (65.1%) followed by Nawabshah (60.6%) and Kasur (56%).
- More than a fifth of all PWIDs reported injecting with a needle used by another PWID, while one fourth of the PWID reported passing on their used needle to another PWID. 27.7% of PWIDs reported that they used injecting paraphernalia including a cooker, water, cotton, caps etc., while 9.2% reported sharing one or more of these items.
- Approximately 40% of PWIDs reported having sex with a regular female partner in the past six months. Condom use was low; 15.8% reported using condom at last sex with regular partner.
- Nearly 28.3% of PWIDs reported having had sex with FSWs in the past six months: average number of paid female sex partners was 5.9 \pm 7.1. Condom use was even lower; only 7.7% reported using condom with a paid female sexual partner at last sex.

- 23.6% of PWIDs reported having sex with MSWs and/or HSWs in the past six months. Condom use during last sex with a MSW/TGSW was reported by 5.8% of PWIDs with 11.2% reporting using lubricant.
- 73.2% of PWIDs had heard of HIV and/or AIDS. More than half the PWIDs interviewed (58.1%) reported knowing that HIV could be transmitted by sharp instruments/needle (syringe), while 52% were aware of sexual mode of HIV transmission. Only 22.3% knew that transfusion of infected blood can also cause HIV.
- Information regarding HIV prevention was low; 32.2% of PWIDs knew that using a clean needle/syringe for injections protects against HIV transmission, while 38.8% knew about condoms being an effective HIV prevention method. One third of the PWIDs (32%) reported sexual abstinence as a mode of HIV prevention
- PWIDs own self-perception of risk for HIV was low with only 28.2% believed that they were at risk of acquiring HIV.
- Approximately 41% of PWIDs knew of a place where they could be tested for HIV. 35.8% reported that they were ever tested for HIV and 28.4% reported of an HIV test done in the past year. Approximately one third (30.9%) of these knew their HIV status
- On average the only 46% of PWIDs were aware of the HIV prevention program in their city, while utilization of services was reported by 24.6% of all PWIDs interviewed.
- PWIDs reported accessing the services provided at SDPs predominantly to obtain new syringes (22.4%), anti-septic dressing (11%) and counseling (10.5%) in the past twelve months.
- About 64% of PWIDs interviewed reported being discriminated for being PWIDs, while 31% reported being treated unfairly or denied health care. More than half the PWIDs (55.2%) reported physical abuse (hit, choked or threatened with a knife or other weapon).
- In the past 12 months, 38.5% of the PWIDs reported being arrested
- Overall, weighted prevalence of HIV among PWID was 38.4% (95% CI; 37.9, 38.9) [un-weighted prevalence 20.9% (95% CI: 19.7, 22.2)]. All cities except Bannu reported concentrated epidemic. The highest prevalence was among PWIDs from Kasur (50.8%), Karachi (48.7%), Bahawalpur (25.1%) and Mirpurkhas (23.2%).

4.1 Estimated Numbers

The mapping study estimated 37,137 (range; 31,138 to 41,752) people who inject drugs spread over 7,401 spots in 14 cities of Pakistan. Of the total estimated number of PWID mapped, almost two thirds were reported from Karachi, which has 24,036 PWID. Bahawalpur reported the second highest estimated number of PWID, with 2,755 estimated PWID, making up 7.4% of the total estimated number of PWID. The third highest estimate for PWID was reported from Hyderabad (2,164 PWID), making up 5.8% of the total estimated number of PWID. The predominant proportion of PWIDs that were mapped in 14 cities across Pakistan were all men, leading to the conclusion that the PWID population in Pakistan is largely male. A very insignificant number of

Female PWIDs were reported in the mapping exercise; only 44 female PWID were reported from 19 spots, giving it an average of 2.1 female PWID per spot.

Table 4.1a: Estimated number of People Who Inject Drugs in Pakistan, 2016-17

City	Spots	Adj. Min	Adj. Max	Adj. Avg.	% dist.
Quetta	86	397	558	503	1.4%
Turbat	45	233	379	316	0.9%
Bannu	54	116	173	146	0.4%
Peshawar	252	594	1,085	871	2.3%
Bahawalpur	574	2,274	3,235	2,755	7.4%
Jhelum	121	254	383	339	0.9%
Kasur	148	646	783	715	1.9%
Rawalpindi	461	1,051	1,542	1,308	3.5%
Hyderabad	520	1,801	2,499	2,164	5.8%
Karachi	4574	20,809	26,982	24,036	64.7%
Larkana	159	734	1,242	1,204	3.2%
Mirpurkhas	84	659	836	778	2.1%
Nawabshah	146	815	1,071	984	2.7%
Sukkur	177	757	984	1,016	2.7%
	7,401	31,138	41,752	37,137	

4.2 Key Socio-demographic Characteristics

Of the 4,062 PWIDs interviewed, 99.4% were males. Only 23 females were interviewed (9 in Mirpurkhas, 6 in Quetta, 4 in Bahawalpur, 3 in Turbat and 1 in Hyderabad). For PWIDs, our sampling strategy and recruitment of eligible respondents was restricted to physical spots. Since most female injectors inject at homes, these numbers do not reflect the overall proportion of female PWIDs in Pakistan, which might be a little more than what was captured by our sample. On the other hand there is no evidence that injecting drugs among females is a very common phenomenon in Pakistan. In a previous research conducted by UNODC in 2010⁶ a total of only 71 female injecting drug users (FIDUs) were identified among the total estimated number of 4,632 FIDUs, in the 13 cities mapped which calculated a prevalence of 1.5% of IDU among female drug users showing that injecting drugs is not very popular among females in Pakistan. In any case, the number of females who inject drugs presented in mapping and subsequent IBBS survey should be read with caution.

⁶ Female drug use in Pakistan, United Nations Office on Drugs and Crime Country Office Pakistan, 2010

Table 4.2a: Socio-demographic characteristics of PWIDs in Pakistan, 2016-17

Characteristics	PWIDs%
Gender	
Male	99.4
Female	0.6
Age	
13-19 years	3.1
20-24 years	15.8
25-29 years	25.4
30-34 years	21.9
35 and above years	33.1
Average age \pm SD (years)	31.7 \pm 8.7
Marital status	
Unmarried	50.3
Married	37.7
Separated	4.6
Divorced	2.9
Widower	4.5
Number of Children	
None	13.9
1-2	40.4
3 or 4	30.7
5 and above	15.0
Educational status	
Illiterate	40.1
Up to 05 years	24.5
06 to 10 years	30.4
> 10 years	4.3
Current living arrangement	
Home	62.4
Shrine/Darbar	8.7
Dera	2.0
Street	21.7
Others**	5.1
Living with	
Lives alone	13.2
Relatives	3.5

Family	58.9
Friends	8.0
With other PWIDs	16.4
Median income/month in PKR***	10,000 (94.5 USD)

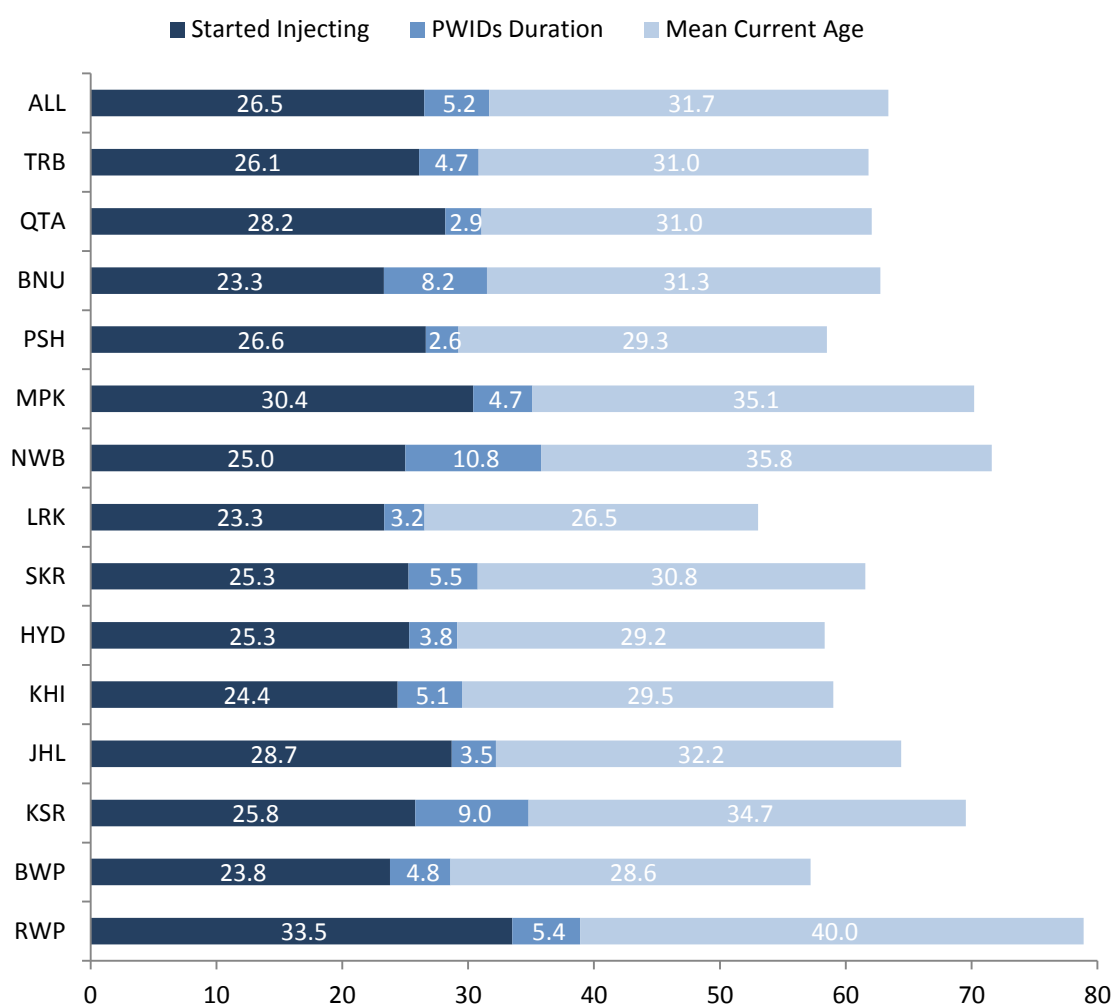
** Other include Guesthouse/hotel (0.5%), quarter flat (3.8%), hostel (0.6%)

***Average income \pm SD (PKR) 11,173 \pm 11,098 (106 \pm 105 USD)

PKR 1.00 = US \$ 0.0094 <https://www.oanda.com/currency/converter/>

The average age of PWIDs was 31.7 years \pm 8.7 (median = 30 years), with approximately 44% of the PWIDs being less than 30 years of age. The highest proportion (33.1%) of PWIDs were 35 years or above (Table 4.2a). A very few PWIDs were less than 20 years of age.

Figure 4.2a: Average age at initiation of injecting drug use, duration of use and current age of PWIDs by city, Pakistan 2016-17

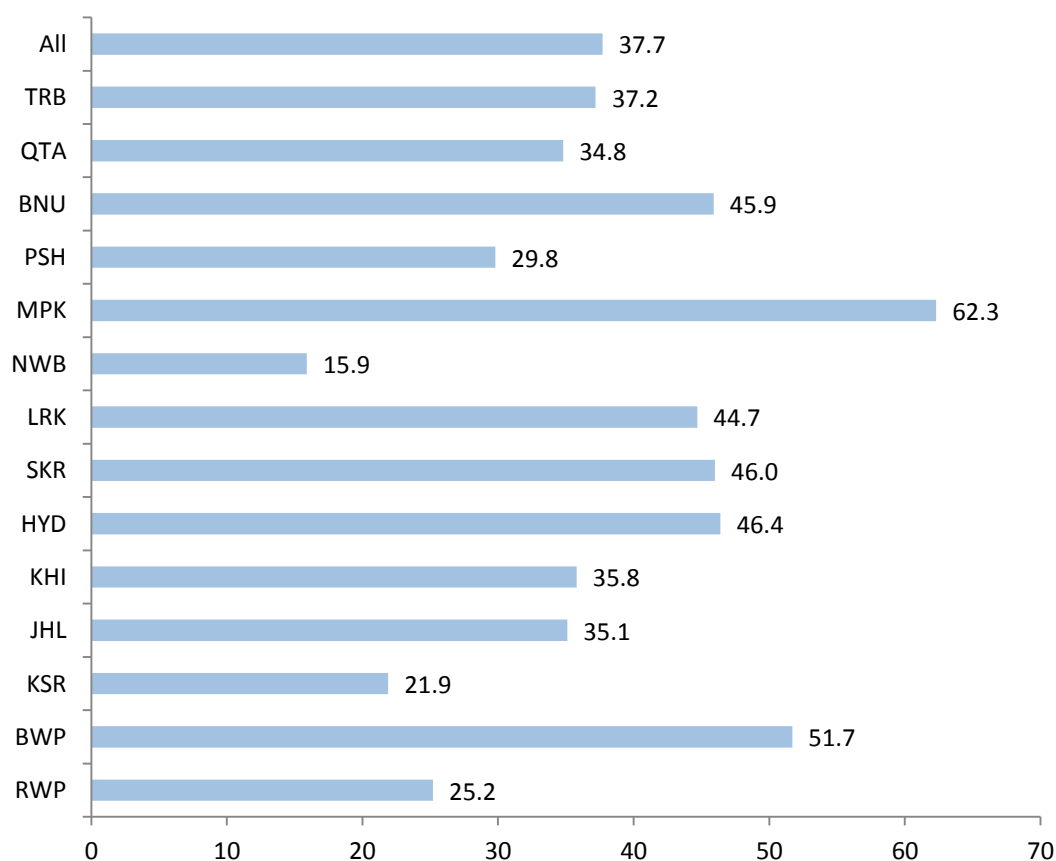


Injecting drug users (PWID) were inquired about the age of initiation drug injecting drugs. On an average, PWIDs started injecting drugs at the age of 26.5 years, and had been injecting for a

period of about 5.2 years at the time of the survey. City wise variations were noted, with average age of initiation being the youngest in Bannu and Larkana at 23.3 years, while Rawalpindi had the oldest average age of initiation at 33.5 years. PWIDS from Nawabshah and Kasur reported injecting drugs for the longest duration (10.8 and 9.0 years respectively). The average duration of injecting was lowest among PWIDs from Peshawar and Quetta (2.6 and 2.9 years respectively) (Figure 4.2a).

Half of the PWID interviewed were unmarried, while approximately 37.7% were currently married (Table 3.2a). Of those PWID that were married, 40.4% reported having 1-2 children, while 30.7% had 3-4 children. The highest proportions of married PWIDs were reported in Mirpurkhas (62.3%) and Bahawalpur (51.7%). The lowest proportion of married PWID was reported in Nawabshah, with only 15.9% of the PWIDs reporting being married (Figure 4.2b).

Figure 4.2b: Proportion of currently married PWIDs by city, IBBS 2016-17

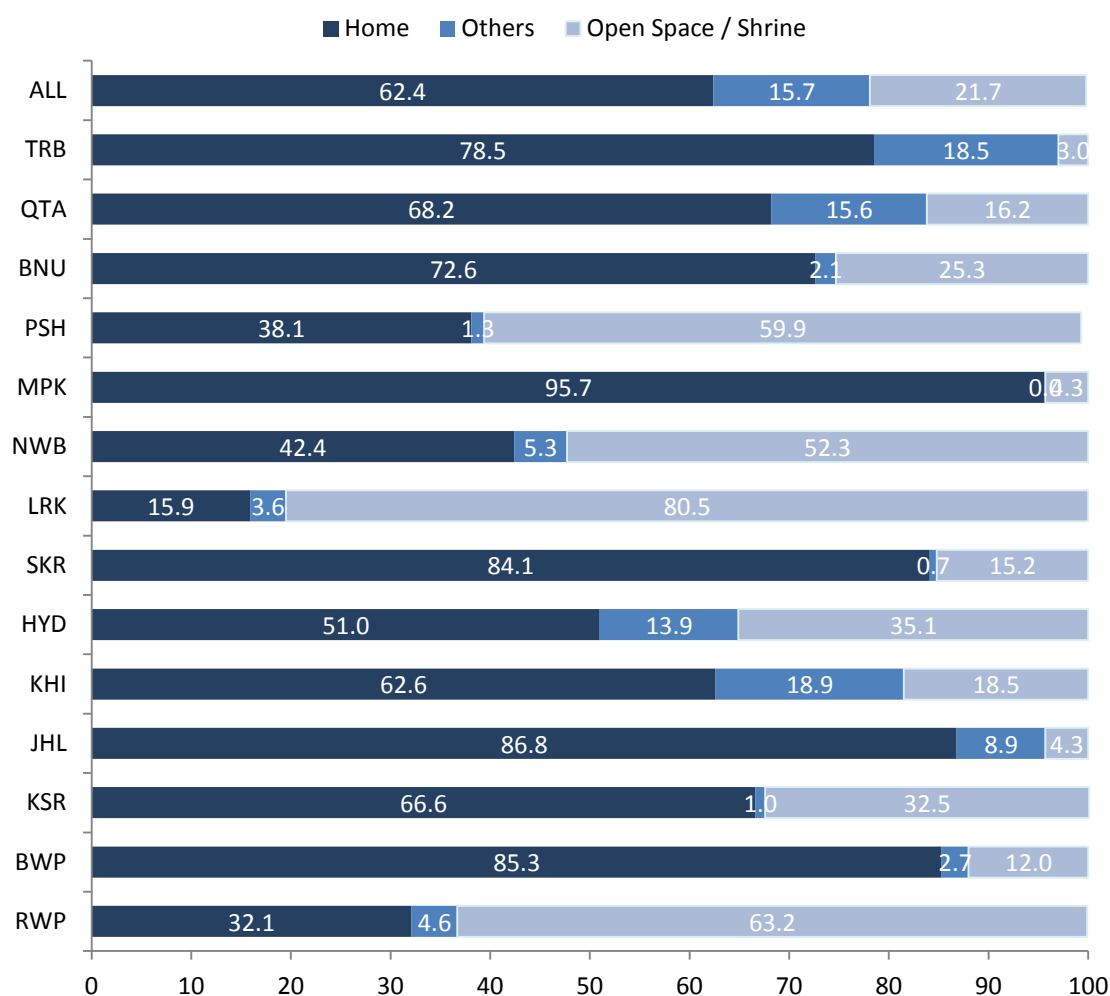


Less than half (40.1%) of the PWIDs interviewed had not received formal education (Table 4.2a), while 24.5% had up to 5 years of education and 30.4% had between 6 and 10 years of formal education.

The median monthly income was PKR 10,000 or US \$94.5 per month (Average = PKR 11,173 ± 11,098 (106± 105 USD) (Table 4.2a).

PWIDs were asked about their current living arrangement. Approximately two thirds (62.4%) were living at homes, while one fifth were living on the street (21.7%). More than half of the PWIDs surveyed lived with their family (58.9%), while 16.4% reported living with other PWIDs and 13.2% reported living alone. Further analyses showed geographic variations in living arrangements. Mirpurkhas, Jhelum and Bahawalpur had the larger proportion of PWIDs living at home, while Larkana, Rawalpindi and Peshawar had the largest reported proportion of PWIDs living on the streets (Figure 4.2c).

Fig 4.2c: Living arrangements of home based and street based PWIDs by city, IBBS 2016-17



4.3 Migration and Mobility

A significant proportion of PWIDs had originated in the city where they were interviewed (89%). Overall, 3% of all PWIDs interviewed reported visiting the city for drugs. The PWIDs who reported to have moved to the city where they were interviewed reported having lived in that city for an average of 7.1 years. More than one third of the PWIDs (34.5%) reported travelling to another city

in the past 12 months, with Karachi (5.3%) and Lahore (3.8%) being the most visited cities. A small proportion of PWIDs (4.5%) reported travelling abroad; 1.9% of the PWIDs had been involved in sex work during their travels abroad, while 1.1% of all the PWIDs interviewed reported injecting drugs while travelling abroad (Table 4.3a).

Table 4.3a: Migratory Pattern of the PWIDs, IBBS 2016-17

Variable	PWIDs %
Migratory Pattern (influx)	
Migrated from other cities	11.0
Visiting the city for drug	3.0
Average duration of staying in the city of interview (SD)	7.1 (8.2)
Mobility Pattern (outflux)	
Traveled to other city in the past 12 months	34.5
Most common cities traveled to	
• Karachi	5.3
• Lahore	3.8
• Hyderabad	1.8
• Kotri	1.0
• Islamabad	1.0
International Travel	
Ever travel aboard	4.5
Had sexual encounter during travel	1.9
Injected during travel	1.1

4.4 Drug Injecting Practices

More than half of PWIDs surveyed (56.8%) reported injecting two to three times a day in the past month, 31% reported injecting once a day while 11.3% reported injecting more than three times a day (Table 4.4a).

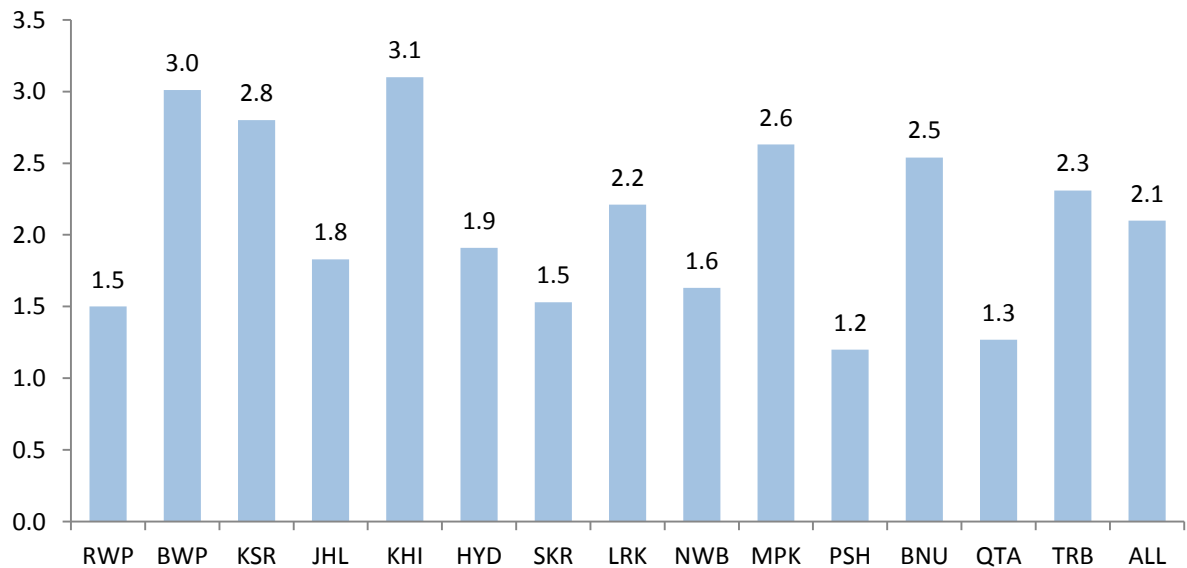
The average number of injections per day ranged from 1.2 to 3.1 injections per day with Karachi and Bahawalpur reporting the highest number of injections per day (avg=3.1 and 3.0 respectively) while Peshawar reported the lowest number (avg=1.2). The type of drug injected and its correlation to injection frequency can be more closely examined by the programs as for example, heroin injecting PWIDs may need to inject more frequently than those who inject other synthetic drugs.

Table 4.4a: Injecting Practices of PWIDs, IBBS 2016-17

Variable	PWIDs %
Number of injection per day in past one month	
▪ Once a day	31.0
▪ 2-3 times a day	56.8
▪ 4 or more times a day	11.3
Injected by "Professional" injectors	
▪ Always	9.3
▪ Most of the time	14.7
▪ Usually	11.1
▪ Sometimes	24.5
▪ Occasionally	17.6
▪ Never	19.9
Injected by professional injector	36.9
Used a new syringe for injecting*	
▪ Always	38.8
▪ Most of the times	19.6
▪ Usually	12.8
▪ Sometimes	12.3
▪ Occasionally	6.6
▪ Never	6.9

*Totals might not add up to 100% at all times because of a few no responses

Fig 4.4a: Average number of injections per day by city, IBBS 2016-17



PWIDs were asked about whether they sought the help of a professional injector. Approximately 9% of the PWIDs reported always seeking help from professional injectors during the past month (Table 4.4a) while 14.7% reported using a professional injector most of the time. One fifth of the PWIDs (19.9%) reported never using a professional injector. Overall, 36.9% of all the PWIDs reported using a professional injector for injecting drugs. There was substantial variation between cities in the proportion of PWIDs who reported always using the services of professional injectors ranging between 44.4% in Larkana to 0.3% in Nawabshah Figure 4.4b).

Fig 4.4b: PWIDs (%) always used services of "professional" injectors Pakistan 2016-17

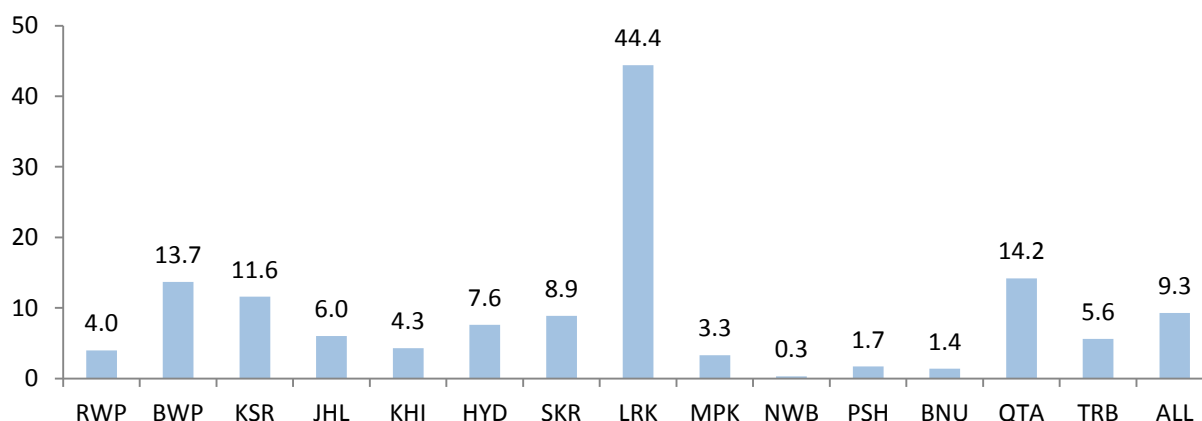


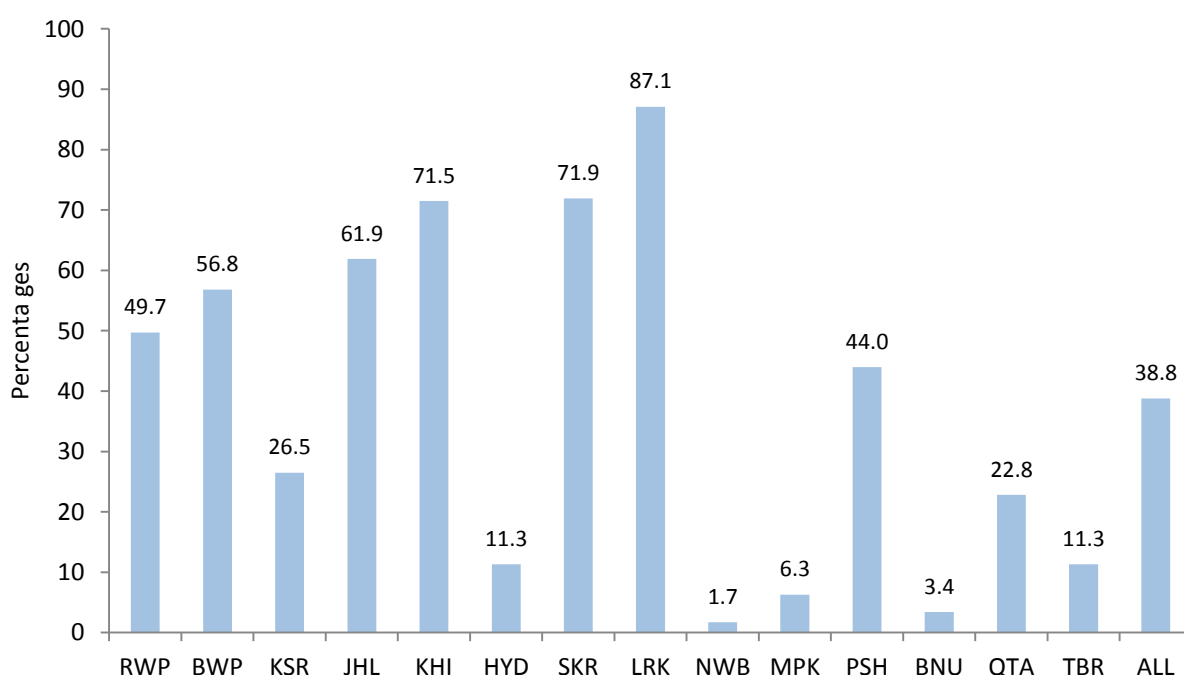
Table 4.4b: Types of drugs injected at least once in past month, Pakistan 2016-17

Drugs	Avil	Diazpm	Bupron	Heroin	Sosegon	Pentzgon	Pentonil	Phnrgan
RWP	66.6	0	2.0	74.8	1.7	0.3	0.3	0
BWP	56.2	16.1	4.5	57.9	2.7	2.4	8.2	0.3
KSR	94.0	18.2	3.3	94.7	30.1	4.0	4.0	37.1
JHL	68.5	10.9	3.3	89.7	0	1.0	0	12.6
KHI	96.7	0.3	1.7	98.7	0	0	0	0
HYD	83.8	69.9	2.3	84.1	19.5	1.0	0.7	0
SKR	82.5	2.6	6.0	69.2	0	0	0	0
LRK	92.4	12.9	1.0	98.3	0	0	0	0
NWB	77.8	21.2	22.5	87.7	2.0	0	1.0	0.3
MPK	96.7	1.0	2.0	89.7	0.7	3	0.7	0
PSH	96.4	1.7	0.3	54	9.9	0.3	0	0.3
BNU	59.6	61	14.4	13	43.8	21.9	3.4	12.3
QTA	71.5	20.2	3.0	84.4	14.9	1.0	1.3	0.7
TRB	52.0	6.6	16.9	76.2	3.6	2.0	2.3	1.0

Poly drug use was common in all cities and all types of opiates, anti-histamines, narcotic analgesics, psychoactive drugs and heroin were injected. Avil (Phineramine maleate) and heroin were the drugs of choice in most cities.

When asked about whether they used a new syringe for injecting, 38.8% reported always using a new syringe, while 19.6% reported using a new syringe most of the time. Only 6.9% of the PWIDs reported never using a new syringe for injecting drugs (Table 4.4a). However, responses varied substantially across cities with the highest proportion reported in Larkana (87.1%) followed by Sukkur (71.9%), Karachi (71.5%), Jhelum (61.9%) and Bahawalpur (56.8%) (Fig 4.4c). The lowest reported use of a new syringe was by PWIDs in Nawabshah (1.7%) and Bannu (3.4%).

Fig 4.4c: PWIDs always using a new syringe for injecting in past month, Pakistan 2016-17



We also inquired the location where they last injected drugs. Public spaces including parks, streets and/or open areas were most commonly cited as venues for the most recent injection (66.1%). A far lesser proportion of PWIDs reported injecting drugs at home (14.9%) and Shrines/darbar (11.2%). These results confirm that most of the drug injecting in Pakistan happen on streets which are fairly open and visible.

A vast majority of PWIDs (67%) reported last injecting with friends and/or acquaintances/ sexual partner. However, 27.0% reported injecting alone (Table 4.4c). Approximately 31% the PWIDs reported sharing their needle/syringe during their last injection. To understand the high-risk behaviors of PWIDs, they were asked about needle sharing. More than a fifth of all PWIDs (22.4%) reported injecting with a needle used by another PWID, while 24.9% of the PWID reported

passing on the needle they used to another PWID after their use. Further analyses to investigate needle-sharing patterns show that 9.1% of the PWIDs reported sharing the same needle with more than 2 PWID, while 8% reported sharing the same needle with two, whilst 6.7% reported sharing the same needle with one other PWID. Sharing needle/syringe was most commonly reported from Bannu (65.1%) followed by Nawabshah (60.6%) and Kasur (56%) (Figure 4.4d, Figure 4.4e and Figure 4.4f).

Table 4.4c: Injection practices on last injection among PWIDs, Pakistan 2016-17

Variables	PWIDs %
Last time injected at	
▪ Park/street/open spaces	66.1
▪ Home	14.9
▪ Shrines/ <i>darbar</i>	11.2
▪ Hotel/shop	5.6
Last time injected "with"	
▪ Family members	1.0
▪ Friends/Acquaintances/sexual partner	68.3
▪ Drug sellers	2.8
▪ Strangers	0.8
▪ Alone	27.0
Sharing needle/syringe at last injection	31.2
Injected with a needle used by another PWID	22.4
Passed a needle / syringe to another PWID	24.9
Proportion of PWIDs sharing same needle	
▪ One	6.7
▪ Two	8.0
▪ More than two	9.1
Injection Paraphernalia	
Used injection paraphernalia	27.7
Shared injection paraphernalia	9.2

Fig 4.4d: PWIDs using a shared syringes/needles on last injection, Pakistan 2016-17

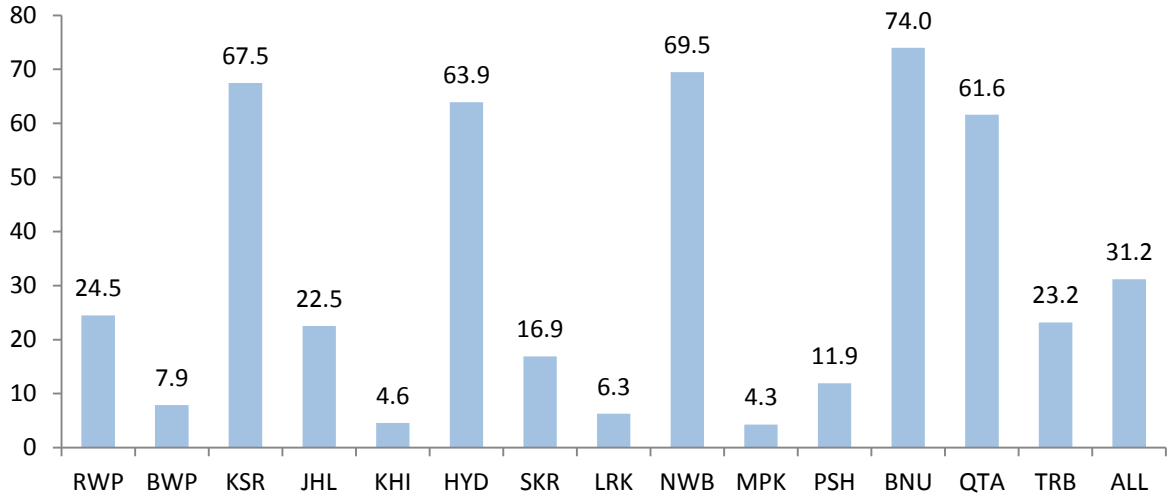


Fig 4.4e: Used someone else's syringes/needles, Pakistan 2016-17

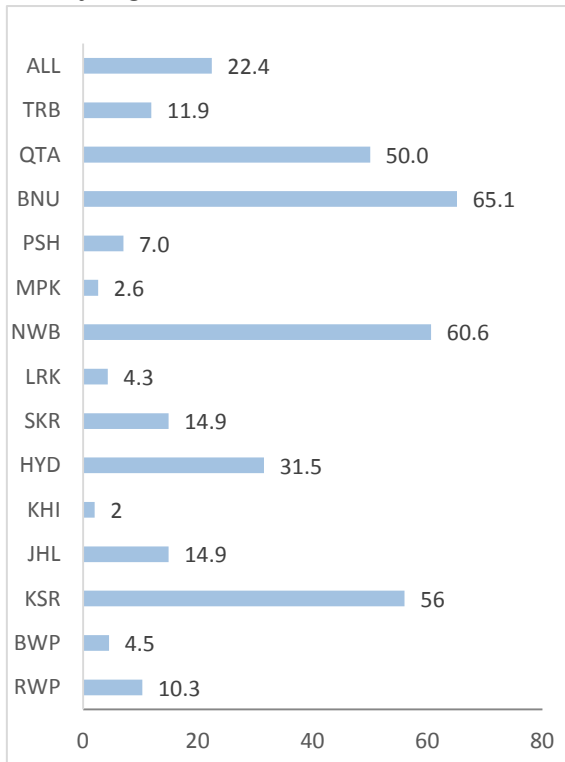
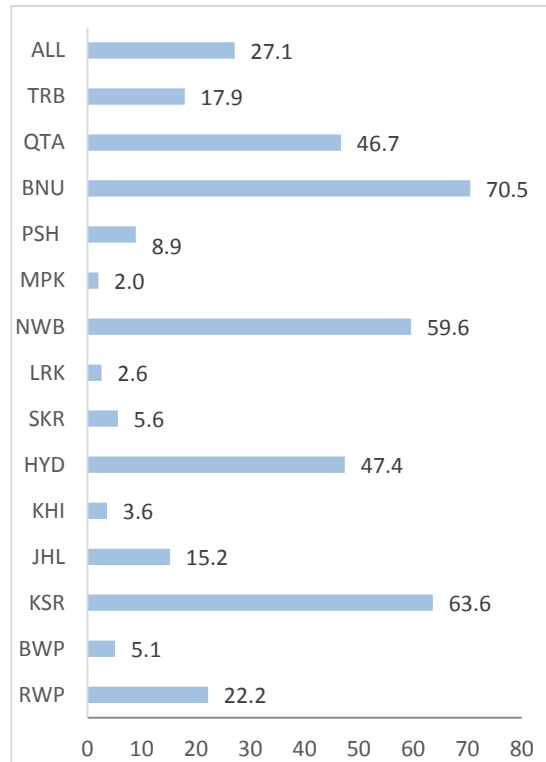


Fig 4.4f: Passed on syringes/needle to someone else, Pakistan 2016-17



Approximately 27.7% of PWIDs reported that they had used injecting paraphernalia including a cooker, water, cotton, caps etc., while 9.2% reported sharing one or more of these items (Table 4.4c).

4.5 Sexual Behaviors and Practices

The HIV epidemic among PWIDs in Pakistan is characterized by high prevalence; transmission into other key populations, including MSM, TGs and FSWs, could signify epidemic transition. Given the importance of PWIDs networks in HIV transmission dynamics and the high HIV prevalence reported among PWIDs in previous IBBS rounds, we examined sexual behaviors and practices.

Table 4.5a: Selected sexual behavior patterns among PWIDs, Pakistan 2016-17

Practices / Behaviors	PWIDs %
Age at first sexual intercourse (mean \pm S.D)	19.13 \pm 3.9
Never had sexual intercourse	17.8
Sexually active with regular female sex partner	40.3
Condom use at last sex	15.8
Had sex with FSW (last 6 months)	28.3
▪ Mean number of paid female partners (mean \pm S.D)(mode)	5.9 \pm 7.1 (2)
▪ Condom use in last sex with paid female sexual partner	7.7
Had sex with a MSW or TG-SW (last 6 months)	23.6
Condom used in last sex with MSW or TGSW	5.8
Lubricant use in last sex with MSW or TGSW	11.2
Alcohol used during sexual act in past 12 months	17.1
Exchanged/sold blood for drugs or money (last 12 months)	4.8

The mean age at first sexual intercourse was reported to be 19.13 \pm 3.9 years. Approximately one fifth of PWIDs reported that they never had sex (17.8%).

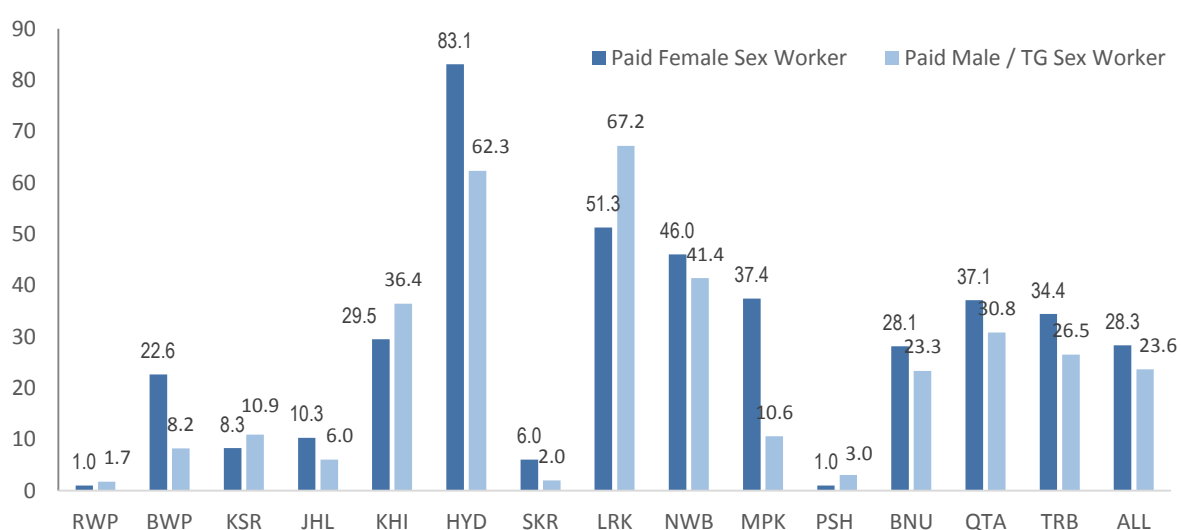
Approximately 40% of PWIDs reported having sex with a regular female partner in the past six months, which correlates with the proportion of married PWIDs. Condom use with a regular partner during the last sexual encounter was reported by 15.8% of PWIDs.

Nearly 28.3% of PWIDs reported having had sex with FSWs in the past six months. Among those reporting sex with a FSW, the mean number of paid female sex partners was 5.9 \pm 7.1 in the last six months. Condom use with a paid female sexual partner was reported at 7.7%. In addition to

buying sex from FSWs, 23.6% of PWIDs reported sex with MSWs and/or HSWs in the past six months. Condom use during last sex with a MSW/TGSW was reported by 5.8% of PWIDs with 11.2% reporting using lubricant. Alcohol use during sexual act in the past year was reported by 17.1% of PWIDs, while 4.8% reported exchanging/selling blood for drugs or money in the past year.

Most cities showed a higher number of sexual transactions with FSWs than with TGSWs/MSWs. PWIDs from Hyderabad and Larkana had the highest proportions reporting sex with FSW or MSW/TGSW. The lowest proportions were reported from Rawalpindi, Peshawar and Sukkur.

Fig 4.5a: PWIDs who paid a sex worker in past six months by city, Pakistan 2016-17



4.6 HIV and STI-related Knowledge

Approximately 73.2% of PWIDs had heard of HIV and/or AIDS (Table 4.6a). About Forty-two percent believed that a healthy-looking person can be infected with HIV. More than half the PWIDs interviewed (58.1%) reported knowing that HIV could be transmitted by sharp instruments/needle (syringe), while 52% were aware of sexual intercourse as a mode of HIV transmission. However, only 22.3% knew that transfusion of infected blood can also cause HIV.

Prevention related information collected from PWIDs showed that only 32.2% of PWIDs knew that using a clean needle/syringe for injections protects against HIV transmission, while 38.8% knew about condoms being an effective HIV prevention method. One third of the PWIDs (32%) reported sexual abstinence as a mode of HIV prevention.

When inquired about their own self-perception of risk for HIV, 28.2% believed that they were at risk of acquiring HIV. Approximately 41% of PWIDs knew of a place where they could be tested for HIV, while 35.8% had ever been tested for HIV in the past and 28.4% reported having been

tested for HIV in the past year. Approximately one third (30.9%) of all the PWIDs reported knowing their HIV status.

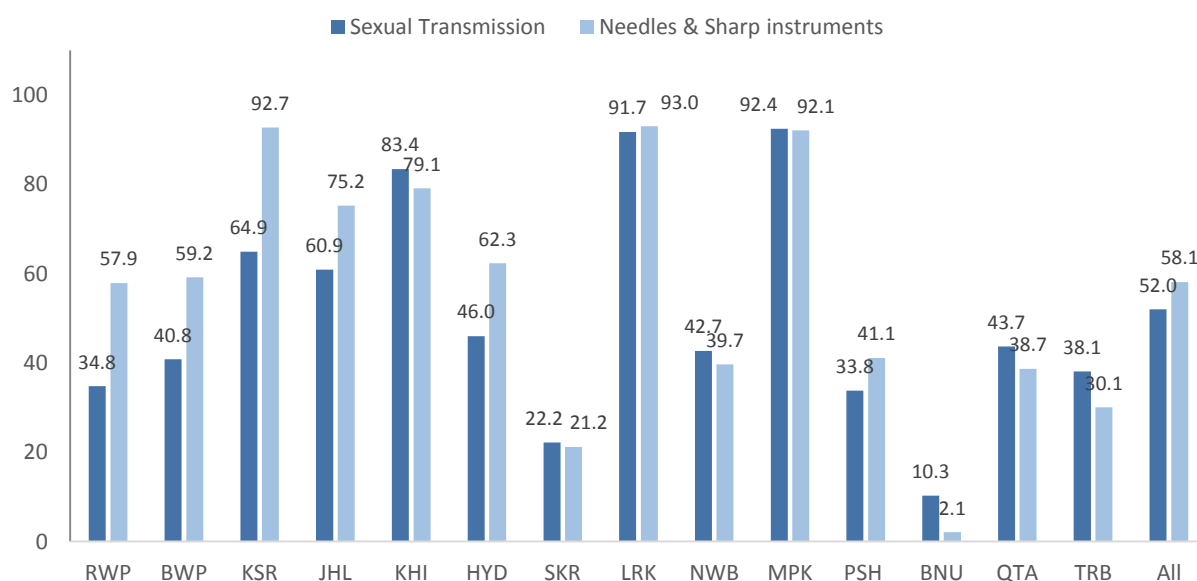
Table 4.6a: HIV and STI related knowledge among PWIDs, IBBS 2016-17

Knowledge Area	PWIDs %
Ever heard of HIV and/or AIDS	73.2
Healthy looking person can have HIV/AIDS	41.5
Self-perception of risk for HIV	28.2
HIV transmission	
HIV transmitted by sharp Instruments/needles/syringes	58.1
HIV transmitted by sexual intercourse	52.0
HIV transmitted by blood transfusion	22.3
HIV Prevention	
Clean syringes/needles to prevent HIV transmission	32.2
Condoms can prevent HIV transmission	38.8
Sexual abstinence to prevent HIV transmission	32.0
HIV testing	
Know where to receive HIV test	40.9
Have ever been tested for HIV	35.8
Have been tested for HIV in past 12 months	28.4
Knows test results	30.9
Sexually Transmitted Infections	
Awareness of sexually transmitted infection (STIs)	56.6
Self-reported STI in past 12 months	15.6
Symptoms experienced	
• Urethral discharge	6.7
• Scrotal swelling	4.1
• Genital Ulcers	0.8
• Genital Warts	7.6
• Anal Discharge	3.1
Received treatment for reported STI	14.0

Approximately 57% of PWIDs knew about other sexually transmitted infections, with 15.6% reporting being infected with STIs in the past twelve months of whom only (14%) had received treatment.

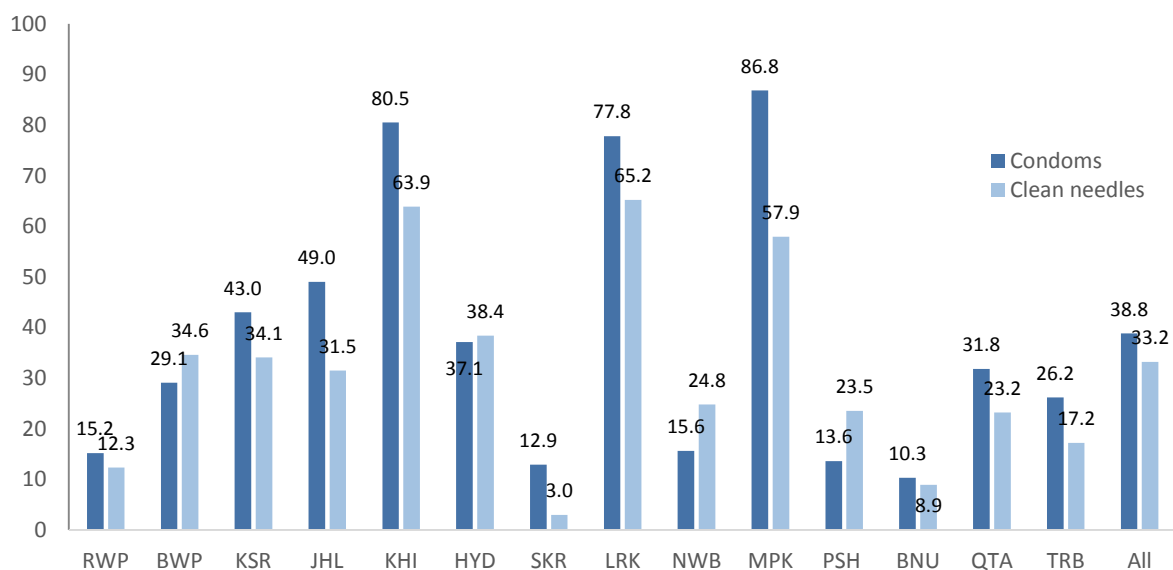
Knowledge about modes of HIV transmission was variable by city. Knowledge about both sexual transmission and through needle/sharp instruments was highest among PWIDs from Mirpurkhas and Larkana – both reporting knowledge levels greater than 90%. PWIDs from Bannu, had the lowest knowledge levels about modes of HIV transmission (Figure 4.6a).

Fig 4.6a: Knowledge of modes of HIV transmission among PWIDs by city, IBBS 2016-17



Interestingly, while knowledge about sexual transmission of HIV was high in most cities, knowledge about the use of condoms in preventing transmission was low across all cities. Only PWIDs in Mirpurkhas, Larkana and Karachi reported proportions higher than 75%. Awareness about using clean needles/syringes in the prevention of HIV was even lower across all cities (Figure 4.6b).

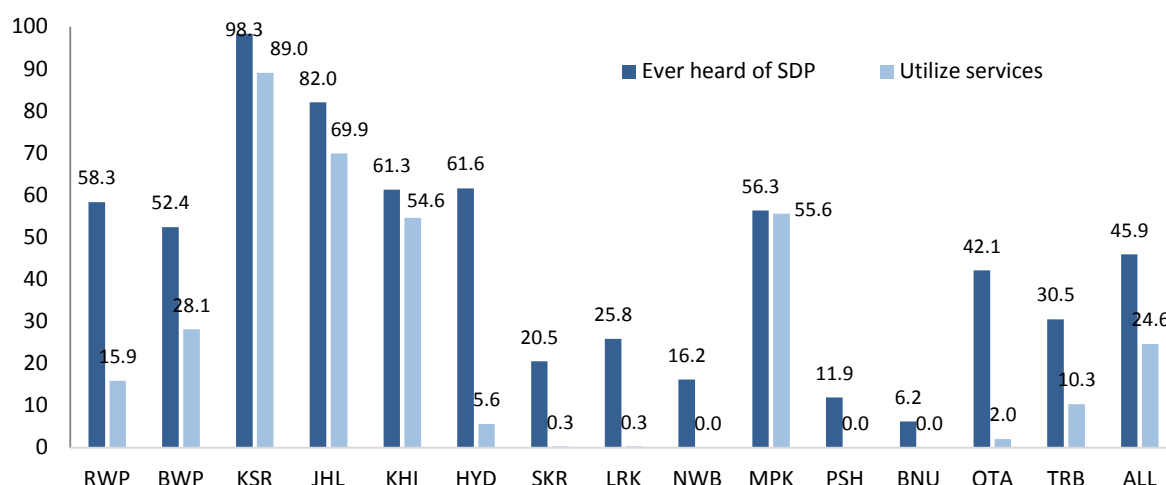
Fig 4.6b: Knowledge of HIV preventive measures among PWIDs by city, IBBS 2016-17



4.7 Program Exposure and Utilization

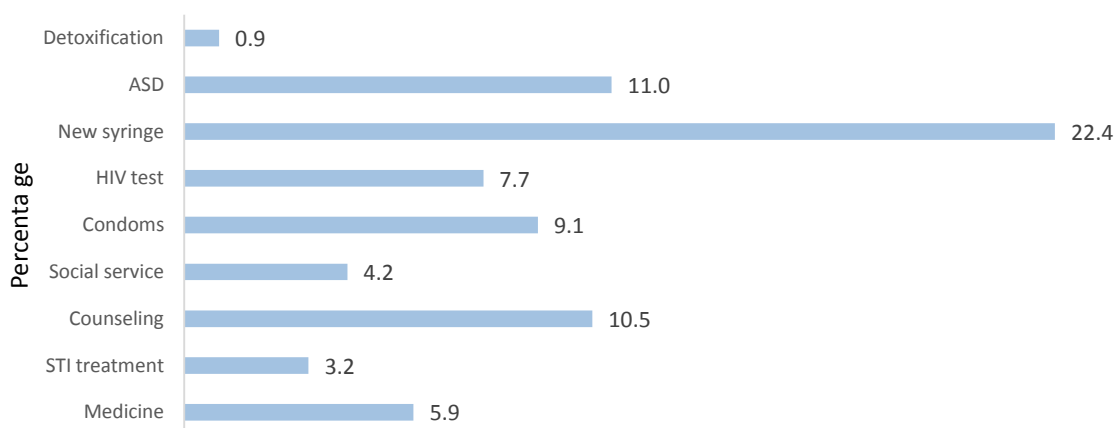
Both knowledge of existence as well as utilization of HIV prevention programs by the PWIDs surveyed was fairly low. On average the only 46% of PWIDs were aware of the HIV prevention program in their city. Utilization of services was even lower, reported by 24.6% of all PWIDs interviewed. The knowledge and utilization of HIV SDPs was reported highest by PWIDs from Kasur, Jhelum, Karachi, and Mirpurkhas. Awareness and utilization of these services was variable across cities, with PWIDs from Kasur and Jhelum reporting high proportions for both knowledge and utilization. Utilization was exceptionally low in Peshawar, Hyderabad, Sukkur, Larkana, Nawabshah, Bannu, Quetta and Turbat.

Fig 4.7a: knowledge and utilization of SDPs among PWIDs* Pakistan, 2016-17



PWIDs reported accessing the services provided at SDPs predominantly to obtain new syringes (22.4%, Figure 4.7b), followed by 11% reporting utilization of services for anti-septic dressing (ASD) and 10.5% for counseling services (Figure 4.7b).

Fig 4.7b: Common services utilized at SDPs in past 12 months among PWIDs, IBBS 2016-17



City wise utilization of various services provided by SDPs is shown in Table 4.7b. Of note, none of the services are reported from Peshawar, Bannu and Nawabshah.

Table 4.7b: Services utilized by PWIDs in past 12 months by city, IBBS 2016-17

	PHC	STI Rx	Counsel	Social services	Condoms	HIV test	Syringe	(ASD)	Detox
RWP	6.0	0.3	-	-	-	0.3	14.6	-	-
BWP	2.1	2.1	1.4	-	5.5	12.3	28.1	2.1	1.4
KSR	53.6	24.8	57.3	0.7	12.3	30.5	85.4	2.6	0.3
JHL	1.0	0.7	25.2	3.0	16.2	42.7	61.3	45.7	3.3

KHI	2.0	12.3	49.0	1.0	45.4	10.3	53.0	51.3	1.7
HYD	4.3	-	3.3	2.3	-	-	2.3	-	-
SKR	0.3	-	-	-	0.3	0.3	-	-	-
LRK	-	-	-	0.3	0.3	-	-	-	-
NWB	-	-	-	-	-	-	-	-	-
MPK	3.0	0.3	5.3	48.3	41.7	2.0	53.3	44.4	4.3
PSH	-	-	-	-	-	-	-	-	-
BNU	-	-	-	-	-	-	-	-	-
QTA	2.0	-	0.3	-	-	-	-	-	-
TRB	5.6	3.3	-	0.7	1.7	5.0	4.3	1.7	1.0

4.8 Harassment and Discrimination

PWIDs were asked questions related to harassment, violence and discrimination. Respondents were inquired if they have faced any stigma and discrimination because of being a key population member.

About two thirds of PWIDs interviewed reported being discriminated against, while 31% reported ever being treated unfairly or denied health care.

They were further inquired if they have faced any physical violence as well. More than half the PWIDs reported ever been physically hurt – either by being hit, choked or threatened with a knife or other weapon). One third of PWIDs reported ever being tricked/lied into having sex without consent and ever beaten or otherwise physically forced to have sex.

In the past 12 months, 38.5% of the PWIDs reported being arrested (table 4.8a).

Table 4.8a: Harassment, Discrimination and Violence reported by PWIDs, Pakistan 2016-17

	PWID (%)
Being discriminated	63.8
Ever been treated unfairly or denied health care	30.5
Ever been physically hurt (hit or choked or threatened with a knife or other weapon)	55.2
Ever tricked/ lied into having sex without consent	34.0
Ever beaten or otherwise physically forced to have sex	32.4
Arrested in the past 12 months	38.5

4.9 HIV Prevalence

Overall, weighted prevalence of HIV among PWID was 38.4% (95% CI; 37.9,38.9) [un-weighted prevalence 20.9% (95% CI: 19.7,22.2)]. The highest prevalence was among PWIDs from Kasur (50.8%), Karachi (48.7%), Bahawalpur (25.1%) and Mirpurkhas (23.2%) (Table 4.9a).

Table 4.9a: HIV Prevalence among PWIDs by City, Pakistan 2016-17

	Tested	Positive	Prevalence %	Prevalence 95% CI
Rawalpindi	302	65	21.5	17.3, 26.5
Bahawalpur	292	73	25.1	20.5, 30.4
Kasur	302	153	50.8	45.2, 56.5
Jhelum	302	54	17.9	13.1, 21.9
Karachi	302	147	48.7	43.1, 54.3
Hyderabad	302	40	13.2	9.9, 17.5
Sukkur	302	50	16.7	13.0, 21.5
Larkana	302	49	16.2	12.5, 20.8
Nawabshah	302	40	13.2	9.9, 17.5
Mirpurkhas	302	70	23.2	18.8, 28.3
Peshawar	302	30	9.9	7.0, 13.8
Bannu	146	5	3.4	1.5, 7.8
Quetta	302	25	8.3	5.7, 11.9
Turbat	302	50	16.6	12.8, 21.2

5. TRANSGENDER POPULATIONS

The Round 5 mapping and IBBS utilized a new inclusion criterion and strategy for the transgender key population. While the previous IBBS round focused on Hijra Sex Workers (HSWs), the criteria was changed to include all Transgender in this study. As discussed in section 3, "Any person who identifies him/herself as a transvestite/transsexual and undertakes sexual activity with a man". TGs who sell sex for money or material benefits, were also included. For IBBS, all TGs, aged 13 years and above were included in the study.

Data are presented within the two basic sub-groups of TGs that were identified in Mapping, and the results of IBBS are in concurrence with the mapping results. The two sub-groups include the "Transgender sex workers" (TG-SW) and the "Non-sex workers Transgender" (Non-SW TGs). Transgender sex workers were defined as, "Individuals who identified themselves as transgendered and received money or goods in exchange for sexual services, either regularly or occasionally". The "non-SWs TGs were those who might have sexual partners but that did not partake in sexual activity for money or benefits". A total of 5,191 TGs were interviewed across 23 cities during the IBBS. Among them 88.8% (4611) reported that they receive money in exchange for sex and identified themselves as TG sex workers (TG-SW) and 11.2% (580) reported that they did not take money thus being termed TG-non sex workers (Non-SW TGs). Some of the key findings are summarized below:

A SUMMARY OF KEY FINDINGS

- *The predominant proportion of all TGs interviewed (55.7%) referred to themselves as Zanana. [TG-SW (54.9%), Non-SWTGs (62.5%)], while 39.0% of all TGs referred to themselves as Hijra [(TG-SW= 39.4%; Non-SWTGs =30%).]*
- *The average age for all TGs was 28.1 ± 6.7 years (median = 27 years). TG-SWs were slightly younger [27.9 ± 6.4 (median= 27 years)] in comparison to the Non-SWTGs [29.9 ± 8.5 (median: 28 years)]. Approximately 6% of all TGs were aged 13-19 years, while the highest proportion (33.7%) of TGs were between the ages of 25-29 years. On average, TG-SWs initiated sex work at a young age (16.9 years and were involved in sex work for approximately 10.9 years.*
- *Overall, 87.2% of TGs were unmarried [unmarried proportion; 87.3% of TG-SWs and 85.7% of the Non-SWTGs], 44.5% were illiterate (TG-SW = 43.4%; Non-SWTGs = 53.1%)] and 69% lived in Deras (TG-SW = 69.7% and Non SW-TGs=63%). A little more than one fifth of all TGs interviewed did not belong to the city of interview*
- *The average monthly income was reported to be PKR 20,000 (197 USD) per month from all sources. TG-SWs reported earning PKR 10,000 (95.40 USD) per month from sex work alone. Income from sex work for TG-SW had an inverse relationship with age, with the youngest age group interviewed reporting the highest income. TG-SW age group 13-19 years -reporting the highest average monthly income from sex work at 12,884 PKR as compared to 8,521 PKR at 35+ years.*

- *Approximately one-third (33.3%) of TGSWs reported soliciting clients in public places by roaming around, while approximately 34.5% used cell phones and 22.7% reported relying on gurus for soliciting clients. On an average, TGSWs entertain 2 clients per day and 31.1 clients per month. More than half of the TG-SWs interviewed reported being involved in unpaid sex (57.7%), having on average 2.3 unpaid sexual partners in the past month.*
- *Consistent condom use is low, only 13.1% of the TGSWs reported consistently using condoms with paid clients. Condom use at last paid anal sex act was reported by 27.7% and 7.5% for last paid oral sex. 63.5% reported using lubricant at last anal sex act. Condom use was much lower for unpaid partners; condom use at last unpaid anal (13.1%) and oral sex (6.0%). Higher educational status of TG-SWs showed an effect on consistent condom use. TG-SWs with more than 10 years of education were twice more likely to report consistent condom use comparative to those with 6-10 years of education.*
- *Non-SWTGs reported having an average of 3.7 sexual partners during the past month. Consistent condom use was reported by only 9.7% of Non-SWTGs. At last anal sex, 12.1% of Non-SWTGs reported using a condom, while 2.4% of Non-SWTGs reported using a condom at last oral sex.*
- *Use of alcohol/drugs during sex was reported by 44.2% of the TGSW in the past 12 months. For non SWTGs, alcohol/drug use during sex was reported by 31%.*
- *Among all TGs interviewed 2.4% having injected drugs and 4.2% reported having sex with a PWID in past 12 months. Approximately 4% of TG-SWs reported having sex with a PWID in the past year, while 2.6% reported injecting drugs in the past 12months. For non SWTGs, 3.3% reported having sex with a PWID in the past year and 0.3% reported injecting drugs in the past 12 months.*
- *Approximately 75% of all the TGs had heard of HIV and/or AIDS; 78.0% of TG-Sw and only 52.6% of Non-SWTGs have heard about HIV and/or AIDS*
- *Nearly 58% of all TGs interviewed [TG-SW; 61.0%, Non-SWTGs; 35.3%] knew that HIV can be transmitted by sex and 32.8% [TG-SW; 34.2%, Non-SWTGs; 21.7%] knew that HIV could be transmitted through a sharp instrument/syringe. Approximately 47% of all TGs [TG-SW; 49.6%, Non-SWTGs; 30.5%] were aware that condoms can prevent HIV transmission.*
- *Approximately 43% of all TGs [TG-SW; 45.7%, Non-SWTGs; 16.7%] knew of a place where an HIV test could be done. HIV testing was low with 34.2% of all TGs (37.3% of TG-SWs) reported getting tested, while very few Non-SWTGs (9.3%) reported getting tested.*
- *About 60% of all TGs [TG-SW; 63.2%, Non-SWTGs; 36.9%] had knowledge about various STIs, while 20% reported having an STI in the last 12 months.*
 - *Approximately 39% of TGs were aware of any HIV prevention programs (SDPs) in their city. Awareness about SDPs amongst TG-SW was more than double (41.7%) comparative to Non-SWTGs (16.4%). Only 15.1% ever utilized these services. Utilization was higher amongst TG-SWs compared to Non-SWTGs (16.5% vs. 4.5%). Obtaining condoms from the SDP was the primary service for which SDPs were accessed in the past year (13.9%), followed by counselling (10.4%) and HIV testing (8.2%).*
- *More than half (52.0%) of all the TGs reported being discriminated against; twice as many TG-SWs reported being discriminated in comparison to Non-SWTGs (55.8% vs*

21.4%).

- *More than half of all the TGs (53.3%) [TG-SW; 56.0%, Non-SWTGs; 32.6%] reported ever being physically hurt (hit or choked or threatened with a knife or other weapon), while 56% of all TGs [TG-SW; 58.3%, Non-SWTGs; 33.6%] reported being tricked/ lied into having sex without consent. Almost half of the interviewed TG (51.4%) [TG-SW; 54.3%, Non-SWTGs; 28.3%] reported ever being beaten or otherwise physically forced to have sex.*
- *Approximately 20.0% of all TGs reported been arrested in the past 12 months. About 21.0% TG-SW and 9.7% of Non-SWTGs reported arrest in the same time period*
- *The weighted HIV prevalence for TG was 7.1% (95% CI; 6.8, 7.4) [un-weighted prevalence 5.6% (95% CI: 5.0, 6.2)]. The highest prevalence for HIV overall for all TGs was reported from Larkana (18.2%) followed by Bannu (15%) and Karachi (12.9%). In the 23 cities where IBBS was conducted for TGs, only two cities-Kasur and Jhelum-had no TGs that tested positive for HIV.*
- *The weighted HIV prevalence reported in TG-SW was 7.5% (95% CI; 7.2, 7.8) [un-weighted prevalence 5.9% (95% CI: 5.3, 6.6)]. The weighted HIV prevalence among Non-SWTGs was 3.0% (95% CI; 2.4, 3.7) [un-weighted prevalence 2.7% (95% CI: 1.6, 4.3)].*

5.1 Distribution and Estimated Numbers

The average number of TGs estimated in the 23 cities mapped were 31,790 ranging between 26,804 and 36,776 at 9,820 spots. Of the 23 cities in Pakistan, four of the cities had the major concentration of TGs, forming more than 60% of the total estimated number TGs in Pakistan. These cities included Karachi (9,123), Lahore, (3,936), Multan (3,130) and Faisalabad (2,737). Bannu and Turbat reported the lowest number of TGs among all the cities mapped with 38 and 82 TGs respectively. The results are shown in Table 5.1a.

Table 5.1a: Estimates of Transgender in 23 cities mapped in Pakistan, 2016-17

City	Spot No	Min	Max	Avg.	% Dist
Quetta	97	516	629	573	1.8%
Turbat	14	75	89	82	0.3%
Bannu	17	33	42	38	0.1%
Peshawar	48	179	279	229	0.7%
Bahawalpur	367	1,343	1,812	1,578	5.0%
Dera Ghazi Khan	36	116	196	156	0.5%

Faisalabad	739	1,952	3,521	2,737	8.6%
Gujranwala	215	490	707	598	1.9%
Gujrat	43	89	117	103	0.3%
Jhelum	108	340	466	403	1.3%
Kasur	125	442	570	506	1.6%
Lahore	1,304	3,418	4,455	3,936	12.4%
Multan	1,662	2,506	3,754	3,130	9.8%
Rawalpindi	601	1,250	1,910	1,580	5.0%
Sargodha	212	1,077	1,348	1,213	3.8%
Sheikhupura	155	709	892	800	2.5%
Sialkot	109	464	600	532	1.7%
Hyderabad	368	958	1,166	1,062	3.3%
Karachi	2,805	7,865	10,381	9,123	28.7%
Larkana	189	945	1,315	1,130	3.6%
Mirpurkhas	123	250	327	289	0.9%
Nawabshah	101	327	438	383	1.2%
Sukkur	382	1,457	1,761	1,609	5.1%
	9,820	26,804	36,776	31,790	

5.2 Socio-demographic Characteristics

Table 5.2a provides information on the key socio-demographic characteristics of the TG population. Overall, the predominant proportion of all TGs interviewed (55.7%) referred to themselves as Zanana. [TG-SW (54.9%), Non-SW TGs (62.5%)], while 39.0% of all TGs referred to themselves as Hijra [(TG-SW= 39.4%; Non-SW TGs =30%)].

The average age for all TGs was 28.1 ± 6.7 years (median = 27 years). Transgender sex workers were slightly younger [27.9 ± 6.4 (median= 27 years)] in comparison to the Non-SW TGs [29.9 ± 8.5 (median: 28 years)]. Approximately 6% of all TGs were aged 13-19 years, while the highest proportion (33.7%) of TGs were between the ages of 25-29 years.

Table 5.2a: Socio-demographic characteristics of TGs, IBBS 2016-17

Characteristics	All TGs (%)	TG-SW (%)	Non-SW TGs (%)
Self-reported Gender			
▪ Hijra	39.0	40.1	30.2
▪ Zanana	55.7	54.9	62.5
▪ Straight/Heterosexual	0.4	0.3	1.0
▪ Gay/Homosexual	2.0	2.1	1.6
▪ Bisexual	2.9	2.7	4.7
Current age			
▪ 13-19 years	6.3	6.3	5.9
▪ 20-24 years	24.2	24.7	20.3
▪ 25-29 years	33.7	34.2	29.8
▪ 30-34 years	19.9	19.7	20.9
▪ 35 + years	15.9	15.0	23.1
Mean age \pm SD (median) years	28.1 \pm 6.7 (27)	27.9 \pm 6.4 (27)	29.9 \pm 8.5 (28)
Marital status			
▪ Unmarried	87.2	87.3	85.7
▪ Currently married	10.5	10.1	13.6
▪ Separated / divorced	2.2	2.4	0.7
▪ Widowed	0.1	0.2	0
Number of Children			
▪ None	27.0	27.6	22.4
▪ 1-2 children	41.9	42.4	38.2
▪ 3 or 4	24.2	22.8	34.2
▪ > 5	7.0	7.2	5.3
Year of formal education			
▪ Illiterate	44.5	43.4	53.1
▪ Up to 05 years	23.5	24.1	18.8
▪ 06 to 10 years	28.7	29.2	25.0
▪ > 10 years	3.3	3.3	2.8
Living arrangement			
Place of living			
▪ Dera	69.0	69.7	63.0
▪ Lives at home	22.6	21.7	30.2
▪ Other / Open Places*	8.4	8.6	6.8
Living with			

▪ Alone	5.7	5.5	7.1
▪ With Family / Relatives	19.1	18.4	25.3
▪ With Friends	5.1	5.1	4.5
▪ With other TGs/Guru	70.0	71.0	63.1
Other sources of income	88.3	86.8	100.0
Income (PKR)			
▪ Median Monthly Income (all sources)	20,000 (190 USD)	20,000 (190 USD)	15,000 (142 USD)
▪ Median Monthly Income (SW)	10,000 (95.4 USD)	10,000 (95.4 USD)	NA

*include shrine/Darbars, street, etc.

Mean monthly income \pm SD of All TGs (from all resources): 20,810 \pm 8,674 PKR (197 \pm 82 USD)

Mean monthly income \pm SD of TG-SWs (from all resources): 21,270 \pm 8,662 PKR (202 \pm 82 USD)

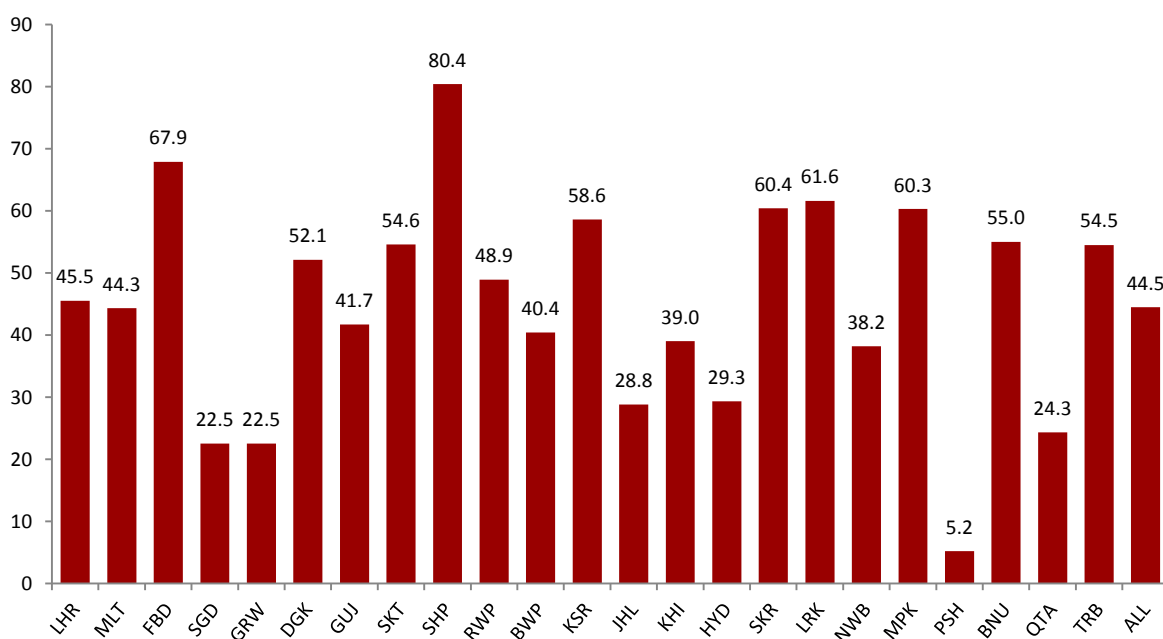
Mean monthly income \pm SD of Non-SW TGs (from all resources): 16,860 \pm 7,726 PKR (160 \pm 73 USD)

Mean monthly income \pm SD (from sex work 11,310 \pm 7,006 PKR (107 \pm 66 USD)

PKR 1.00 = US \$ 0.0094 <https://www.oanda.com/currency/converter/>

TGs were asked about their educational status. Overall, 44.5% of the TGs interviewed reported being illiterate – with a greater proportion of Non-SW TGs comparative to TG-SW reportedly being illiterate (TG-SW = 43.4%; Non-SW TGs = 53.1%). Of all the TGs interviewed, one fourth had education levels up to 5 years and 6-10 years each. Only 3.3% reported education levels of more than 10 years. Sheikhpura had the highest proportion of TGs that reported being illiterate (80%), while TGs from Peshawar reported the lowest proportions of illiteracy.

Fig 5.2a: Illiteracy among ALL TGs by city, IBBS 2016-17



TG-SWs from Sheikhpura reported the highest levels of illiteracy (91%), followed up TG-SWs from Faisalabad (68%) and Larkana (62%). TG-SWs from Peshawar had the lowest level of illiteracy (5%) compared to all other cities (Figure 5.2b). City wise variation for Non-SW TGs show highest illiteracy levels in DG Khan (76.9%) and Sheikhpura (75.6%), while no Non-SW TGs reported being illiterate in Larkana and Bannu (Figure 5.2c).

Fig 5.2b: Illiteracy among TG-SWs by city, IBBS 2016-17

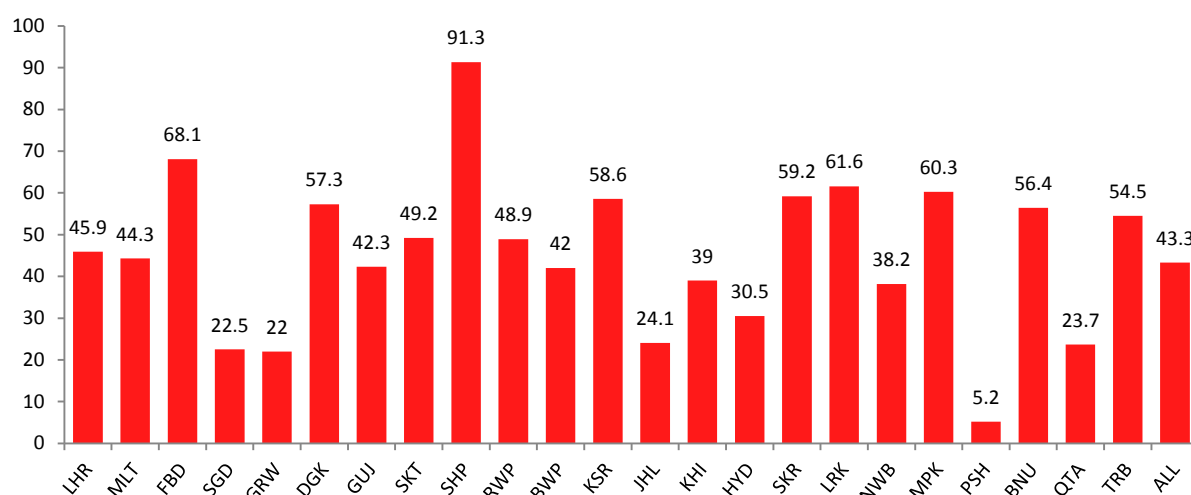
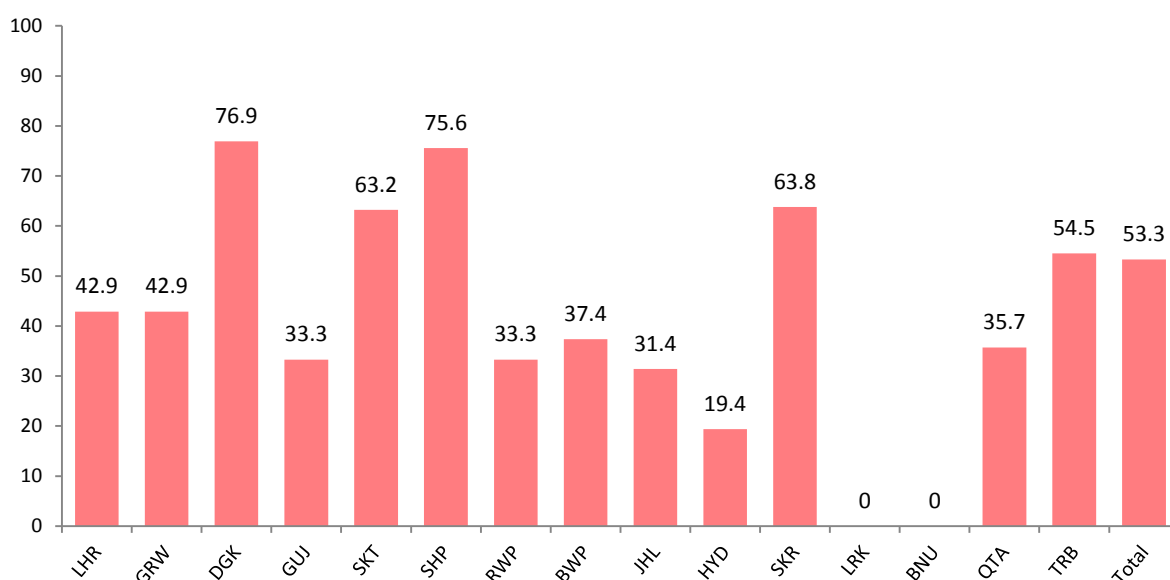


Fig 5.2c: Illiteracy among Non-SW TGs by city, IBBS 2016-17



Overall, a large majority of TGs, 87.2%, reported being unmarried, while 10.5% reported currently being married. Typology wise, 87.3% of TG-SWs and 85.7% of the Non-SW TGs reported being

unmarried. A slightly higher proportion of Non-SW TGs reported being married comparative to TGSW (13.6% and 10.1% respectively) (Table 5.2a). Overall, city wise analysis of TGs that reported being currently married is shown in figure 5.2d. TGs from Gujrat, Faisalabad and Lahore reported the highest proportion for being currently married (26.2%, 25.7% and 25.6% respectively). Typology wise city breakdown for current marriage is reported in figure 5.2e and figure 5.2f.

Fig 5.2d: Proportion of currently married TGs city wise, IBBS 2016-17

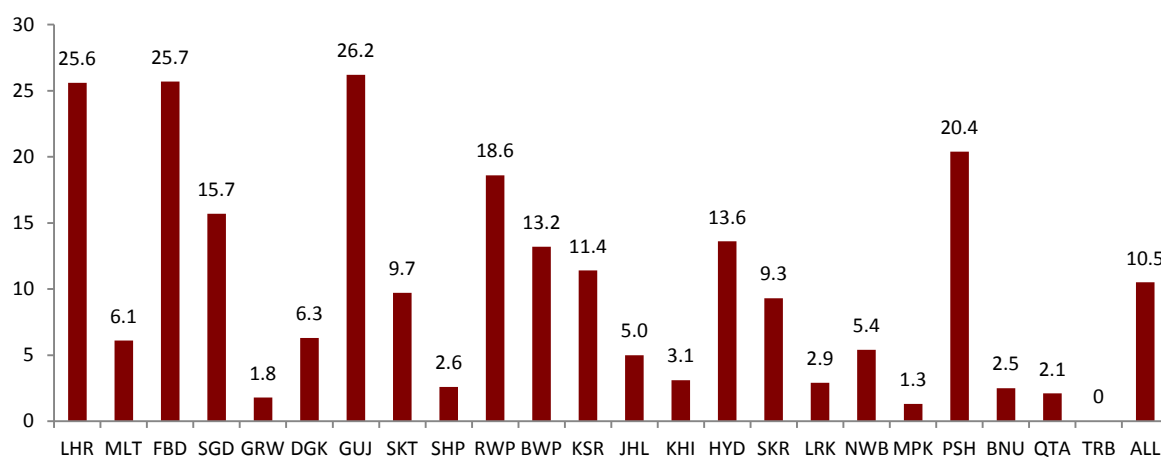


Fig 5.2e: Proportion of currently married TG-SW city wise, IBBS 2016-17

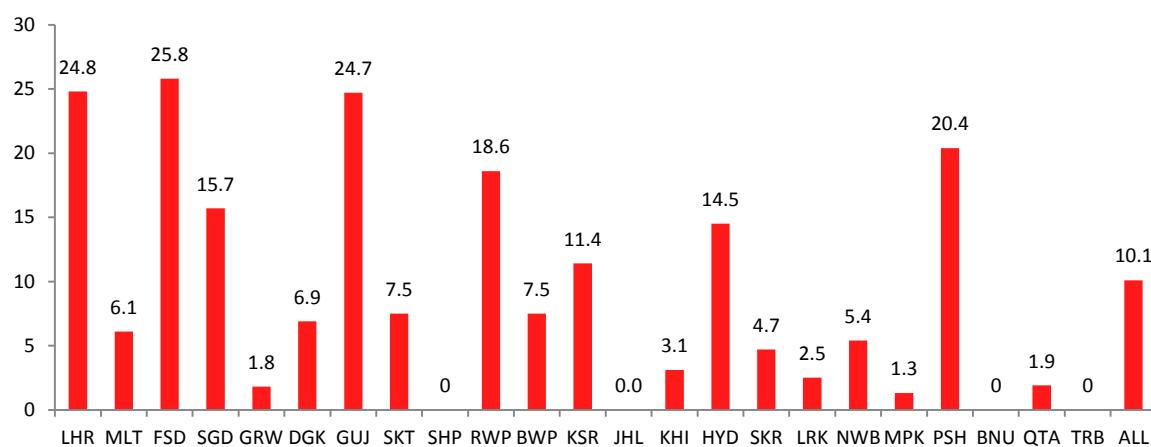
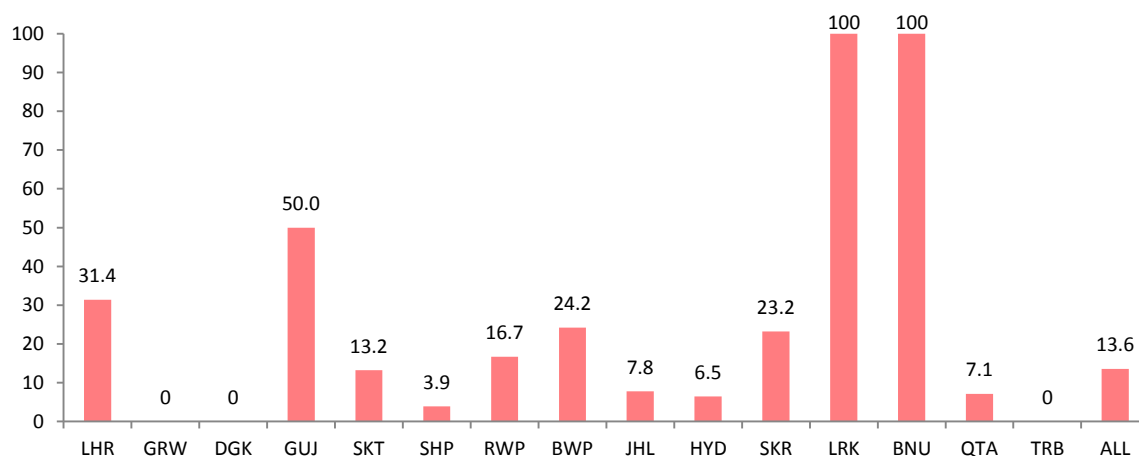


Fig 5.2f: Proportion of married Non-SW TGs city wise, IBBS 2016-17



TGs were asked about their living arrangements. Overall, a predominant proportion of the TGs reported living at deras (69%); a larger proportion of TG-SW reported living at deras in comparison to Non-SW TGs (69.7% and 63% respectively). Among those TGs that reported living at home, the proportion reported by Non-SW TGs was greater (30.2%) comparative to 21.7% among TG-SWs.

TGs were asked how much their median monthly income was. Overall, TGs reported earning Rs. 20,000 (197 USD) per month from all sources of income. TG-SWs reported earning Rs. 10,000 (95.40 USD) per month from sex work alone. Further analyses show that income from sex work for TG-SW reduced with age, with the youngest age group interviewed - 13-19 years -reporting the highest average monthly income from sex work (figure 5.2g).

Fig 5.2g: Mean monthly sex work income of TG-SWs by age group, IBBS 2016-17

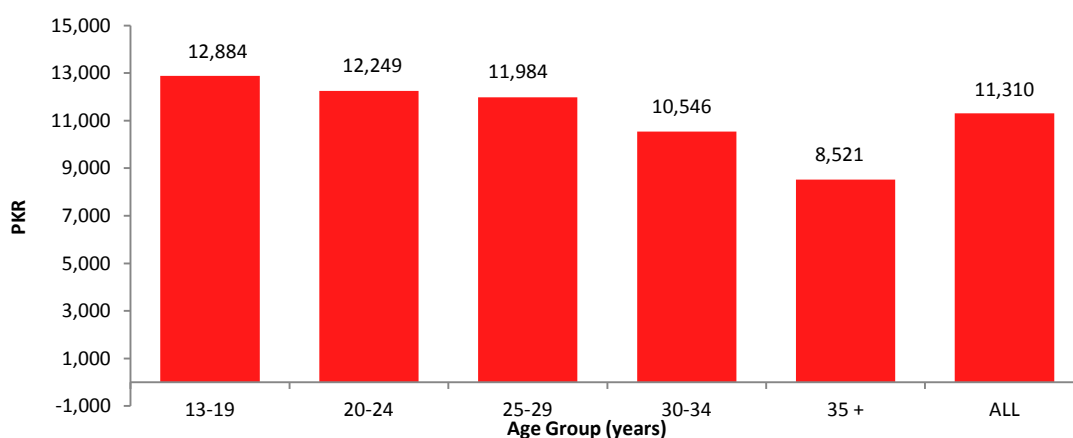
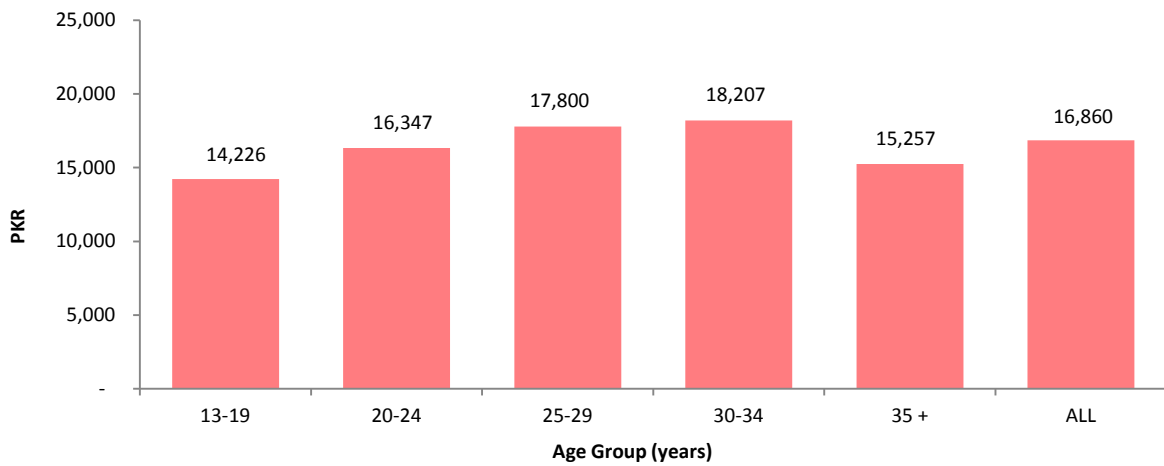
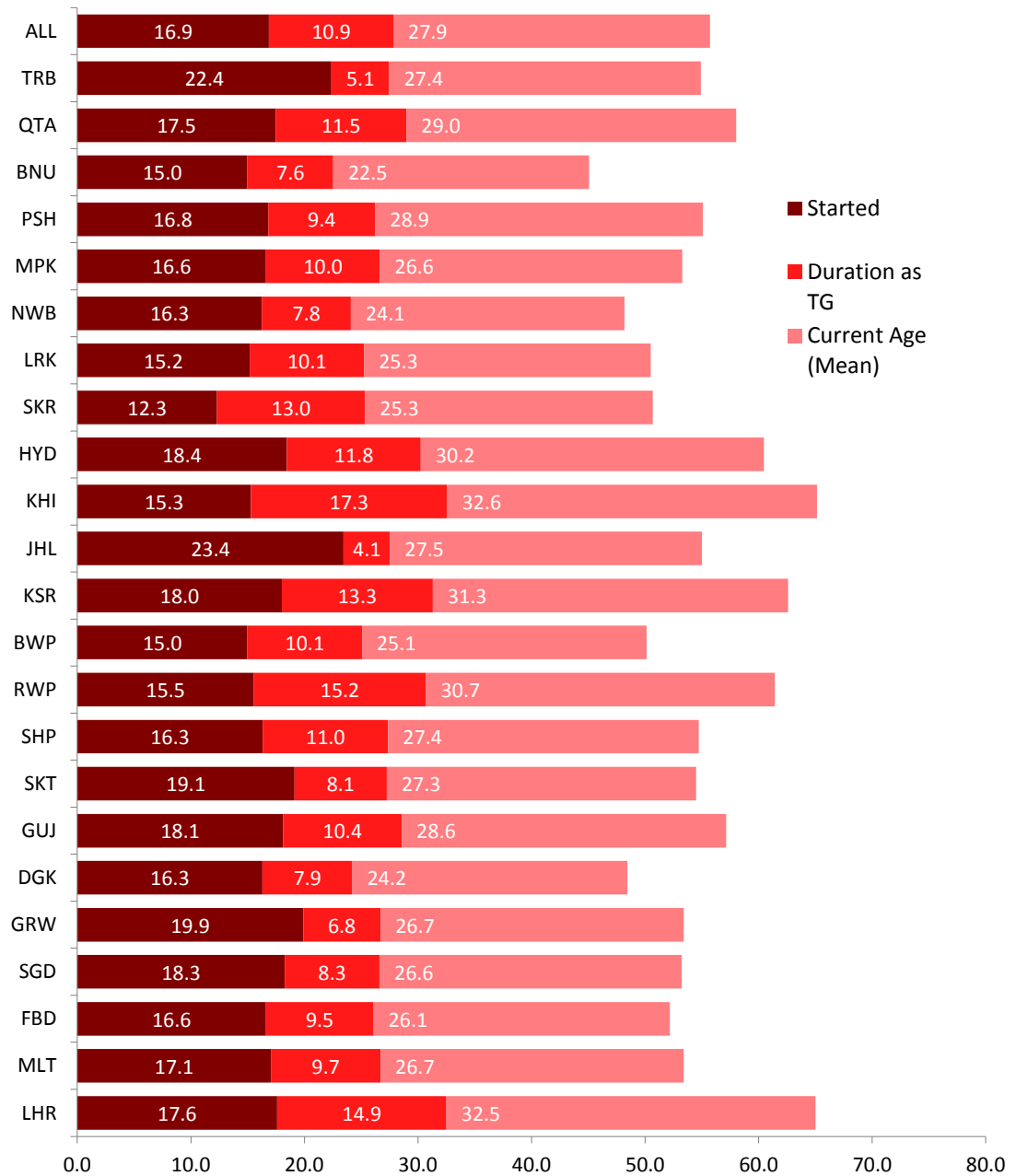


Fig 5.2h: Mean monthly income for Non-SW TGs IBBS 2016-17



On an average, TG-SWs reported starting sex work at the age of 16.9 years and were involved in sex work for approximately 10.9 years. Age of initiation into sex work was lowest in Sukkur (mean = 12.3 years) followed by Bahawalpur (mean= 15.0 years), while those in Turbat were the oldest when they began sex work (mean = 22.4 years). TGSWs in Karachi were involved in sex work for the longest period (mean = 17.3 years), whereas those in Jhelum were in sex work for a shortest time period (mean = 4.1 years) (Figure 5.2i).

Fig 5.2i: Average age of initiation, duration in sex work & current age of TG-SWs, IBBS Pakistan 2016-17



5.3 Migration and Mobility

A significant proportion of TGs interviewed did not belong to the city of interview (21.4%), with 10.2% of all TGs reporting visiting the city of the interview especially for sex work. On an average, the duration of stay in the city of interview was reported to be 9.1 years. By typology, a larger proportion of TG-SWs in comparison to Non-SW TGs migrated to the city of interview (21.8 % vs. 17.9% respectively) and also stayed in that city longer (9.3 years compared to 7.0 years respectively)

More than a third of all TGs reported travelling to other cities in the past year for sex work/ partners, whereby a greater proportion of TG-SW reporting out bound travel comparative to Non-SW TGs (38.8% vs. 14.3% respectively). Lahore followed by Karachi was the most commonly visited cities reported by TGs. A very small proportion of TGs reported travelling abroad (1.6%)

Table 5.3a: Mobility pattern of TGs overall and by typology, IBBS 2016-17

	All TGs (%)	TG-SW (%)	Non-SW TGs (%)
Migratory Pattern (In Migration)			
Migrated from other cities	21.4	21.8	17.9
Visiting the city specially for sex	10.2	11.3	2.1
Duration of stay in the city of interview (mean \pm SD) in years	9.1 \pm 7.6	9.3 \pm 7.5	7.0 \pm 7.4
Migratory Pattern (Out Migration)			
Travel to other cities for sex (last 12 months)	36.1	38.8	14.3
Most Common cities traveled to			
Lahore	13.4	12.7	27.7
Karachi	10.8	11.1	4.8
Multan	4.4	4.4	6.0
Patoki	3.8	4.0	0
Hyderabad	3.4	3.6	-
International Travel			
Ever traveled abroad	1.6	1.8	0.5
Involved in sex work when living abroad	69.0	71.6	0

Bannu followed by Karachi and Turbat reported the highest proportion of migrant (65%, 60.7%, 50.9 respectively) (Figure 5.3a). Similar proportions were noted for TG-SWs (Figure 5.3b). Interestingly among Non-SW TGs, all the interviewees in Bannu had migrated from another city (figure 5.3c).

Fig 5.3a: Proportion of migrants All TGs by city, IBBS 2016-17

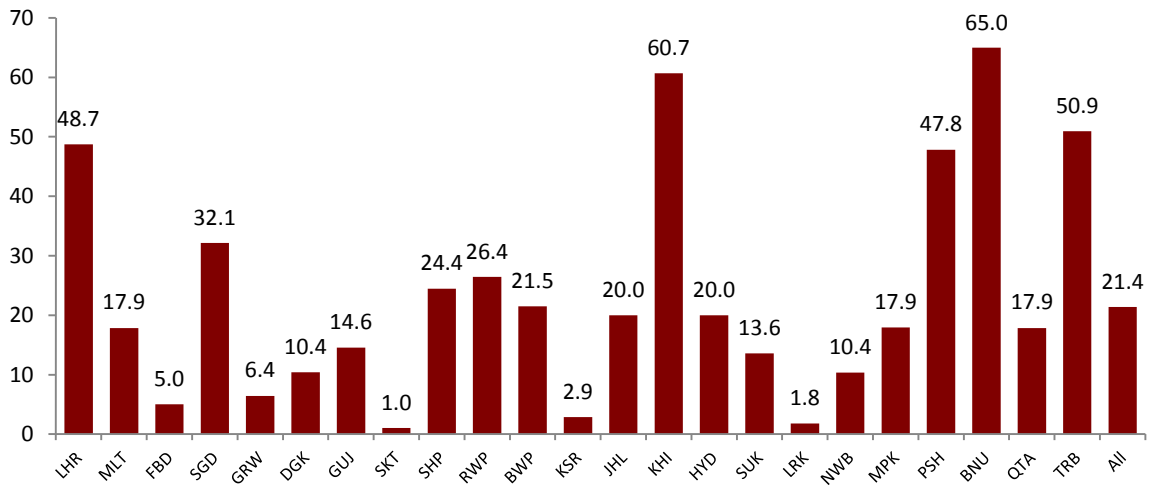


Fig 5.3b: Proportion of migrants TG-SWs by city, IBBS 2016-17

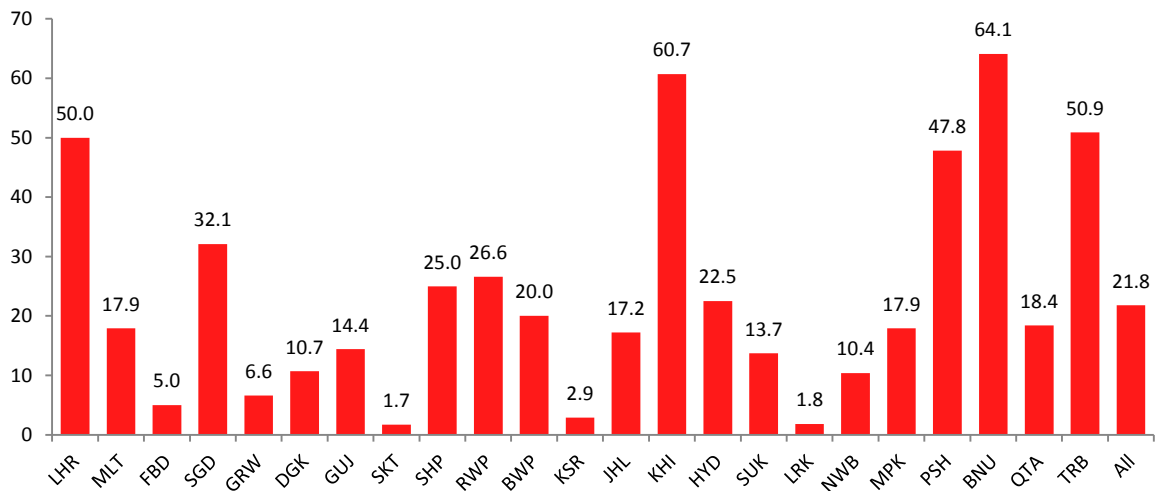
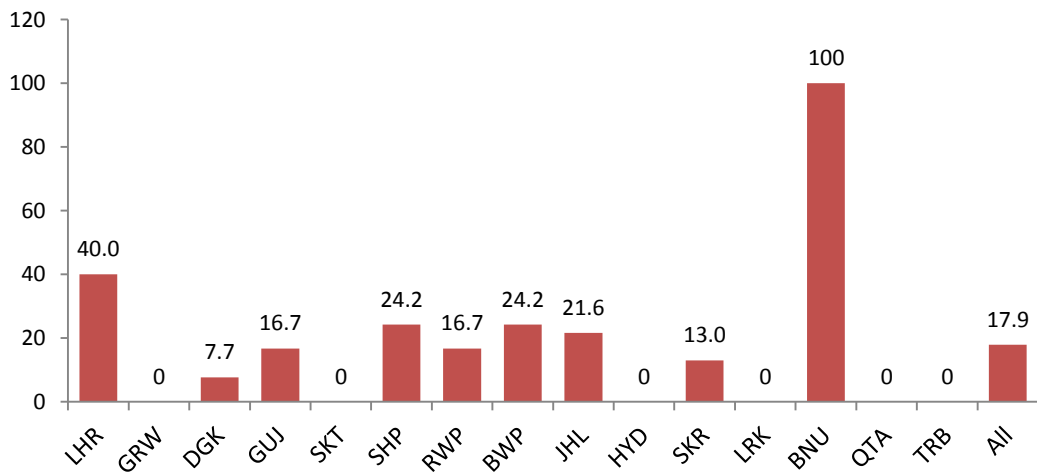


Fig 5.3c: Proportion of migrants Non-SW TGs by city, IBBS 2016-17



5.4 HIV Risk Behaviors and Practices

5.4.1 Transgender Sex Workers

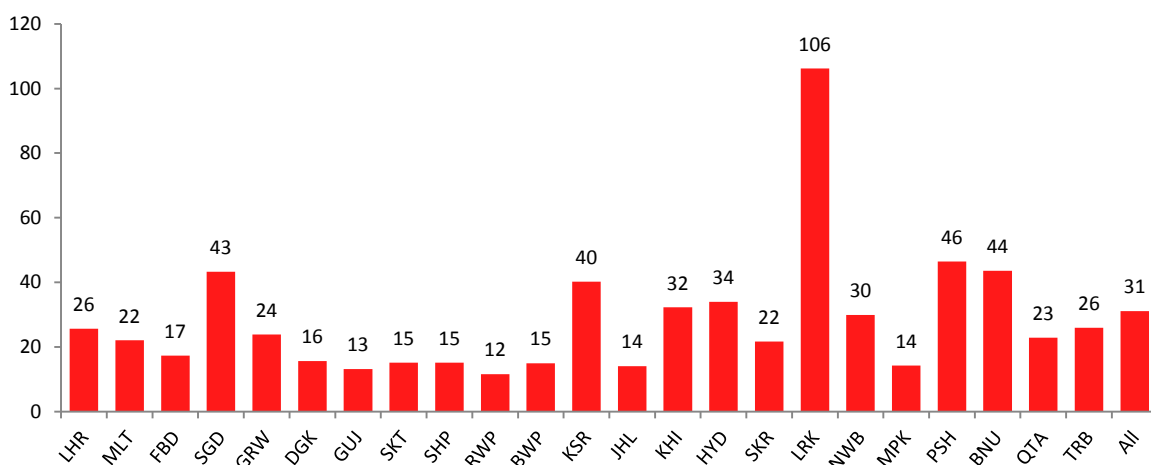
This section contains results from 4611 TG-SW across 23 cities. Approximately one-third (33.3%) of TGSWs reported soliciting clients in public places by roaming around, while approximately 34.5% used cell phones and 22.7% reported relying on gurus for soliciting clients (Table 5.4.1a). On an average, TGSWs had 2 clients per day and 31.1 clients per month. More than half the TG-SWs interviewed reported being involved in unpaid sex (57.7%), having on average 2.3 unpaid sexual partners in the past month.

Table 5.4.1a: HIV risk behaviors and practices of TG-SWs, IBBS 2016-17

Practice / Behaviour	TG-SWs (%)
Main source of clients	
▪ Pimp / <i>guru</i>	22.7
▪ Roaming around	33.3
▪ Cell phones	34.5
▪ Client referral	8.3
▪ Other sources	0.5
No. of Clients	
▪ Avg. clients / day \pm SD	2.0 \pm 1.1
▪ Avg. clients last month \pm SD	31.1 \pm 27.9
▪ Involved in unpaid sex	57.7
▪ Avg No of unpaid partners in last month (mean \pm SD) (mode)	2.3 \pm 2.7 (1)
Consistent condom use with	
▪ Paid Clients	13.1
▪ Non Paid partners	6.7
Condom use at last paid client	
▪ Anal sex	27.7
▪ Oral sex	7.5
Condom use at last non paid partner	
▪ Anal sex	13.1
▪ Oral sex	6.0
Lubricant use during last anal sex with client	63.5
Alcohol/drug use during sex in the past 12 months	44.2
Had sex with PWID in past 12 months	4.3
Injected drugs in the past 12 months	2.6
Sold blood for money in past 12 months	3.9

Figure 5.4.1a shows the average number of clients for TG-SWs in the past month per city. Larkana reported the highest average number of clients as reported by TG-SWs in the past month (106 clients). TG-SWs from Sargodha, Kasur, Peshawar and Bannu reported having an average of 40-46 clients in the past month. The lowest client load in the past month was reported by TG-SWs in Rawalpindi (average of 12 clients).

Fig 5.4.1a: Average number of clients in the past month for TG-SWs by city, IBBS 2016-17



When asked about consistent condom use, 13.1% of the TG-SWs reported consistently using condoms with paying clients, while 63.5% reported using lubricant at last anal sex act (Table 5.4.1a). Condom use at last paid anal sex act was reported by 27.7% of TG-SWs while only 7.5% reported using a condom at last paid oral sex act. The proportions of condom use reported at last unpaid anal and oral sex were much lower comparatively (Table 5.4.1a). Very little variation in consistent use of condoms was noted across the different age groups, as reported in figure 5.4.1b. Educational status of TG-SWs was shown to have an effect on consistent condom use. Figure 5.4.1c shows those TG-SWs with more than 10 years of education were twice more likely to report consistent condom use comparative to those with 6-10 years of education.

Fig 5.4.1b: Consistent condom use by TG-SWs with clients by age groups, Pakistan 2016-17

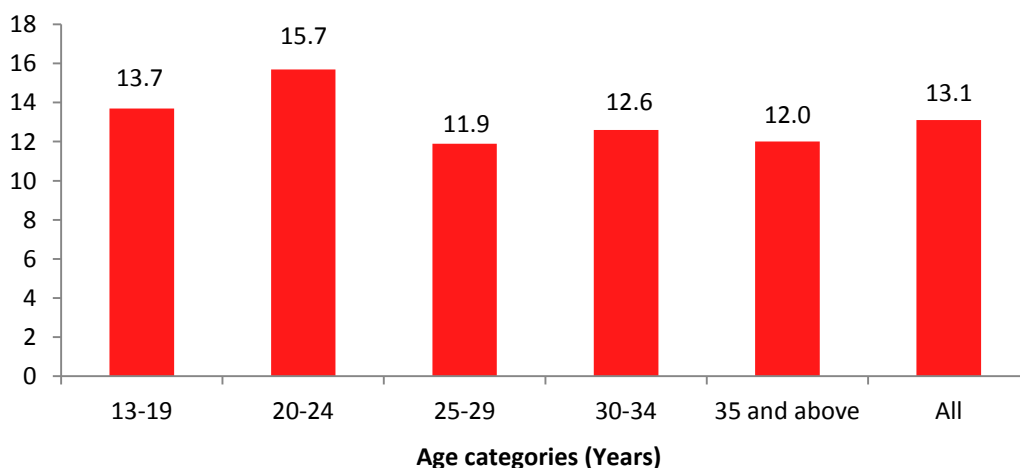
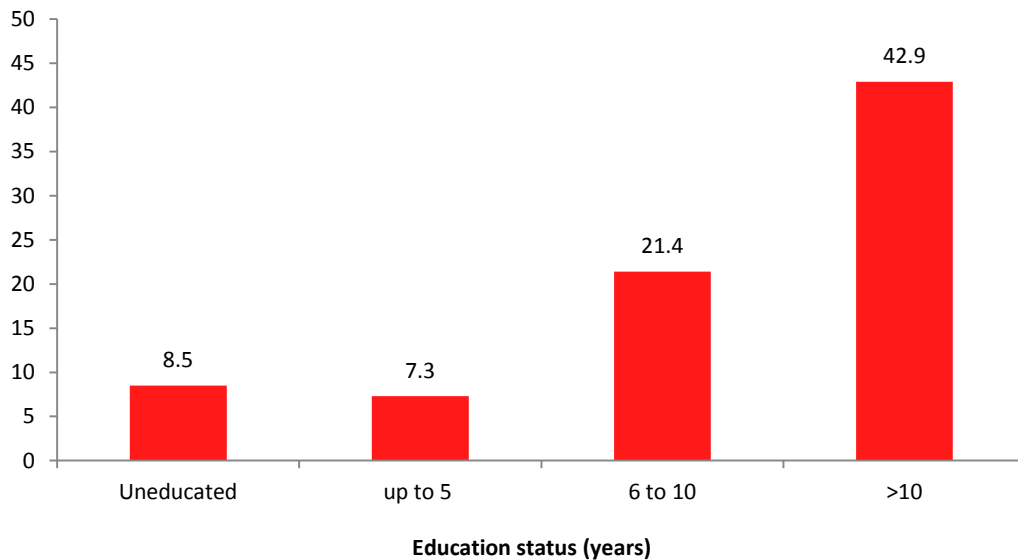
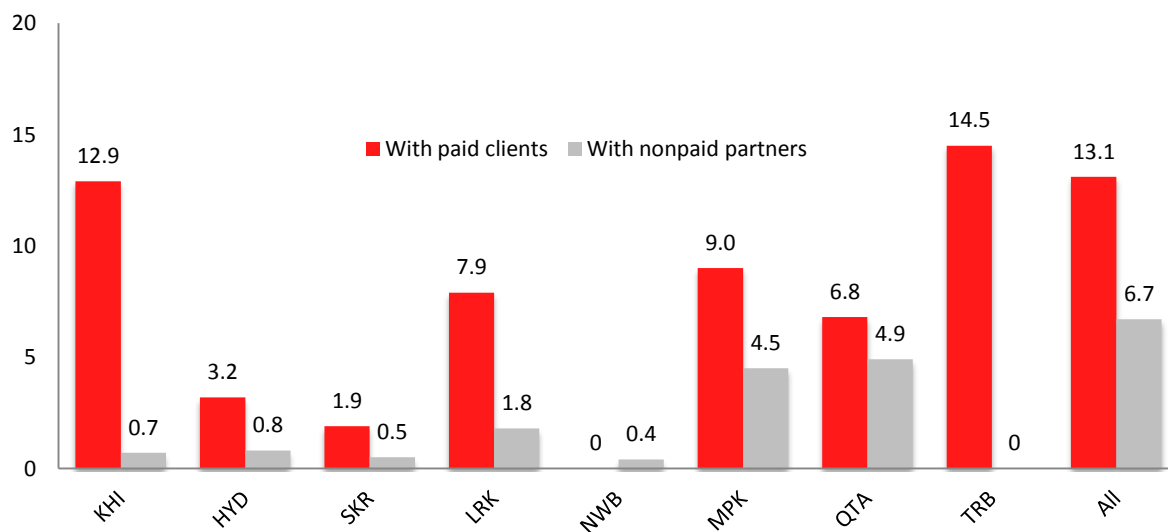


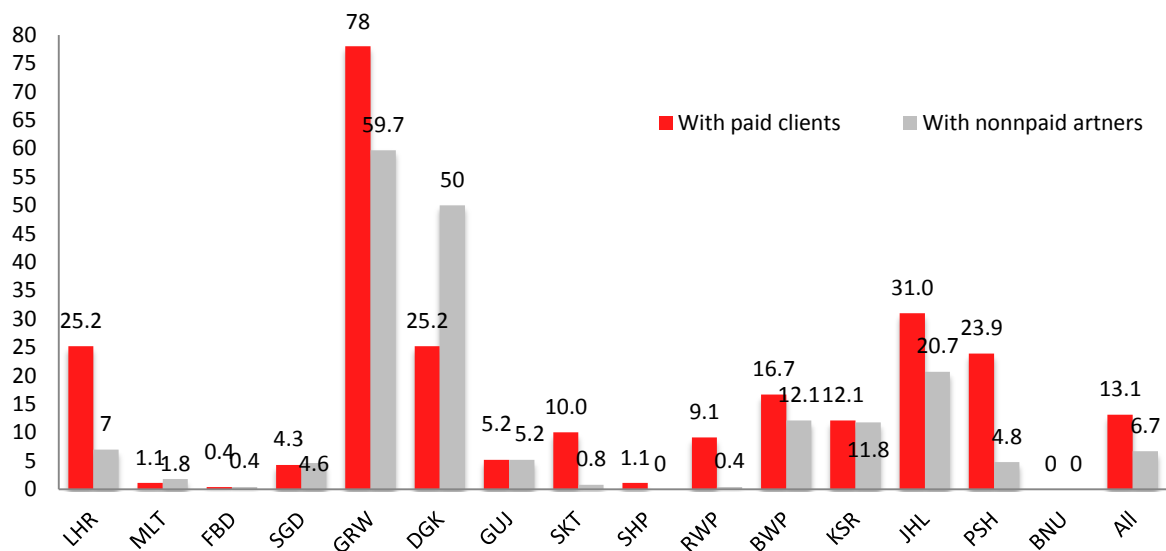
Fig 5.4.1c: Consistent Condom use with clients by education, Pakistan, 2016-17



City-wise variation in consistent condom use was also noted; especially when differential analysis based on paid and non-paid (regular) sexual partners was carried out. Consistent condom use with paid clients was higher in all cities comparative to non-paid partners. Among cities in Sindh and Balochistan, TG-SWs in Turbat, Karachi and Mirpurkhas reported the highest proportions of consistent condom use with clients and unpaid partners. Among cities in Punjab and KPK, TG-SWs in Gujranwala, DG Khan and Jhelum reported the highest proportions for consistent condom use among clients and nonpaid partners (figure 5.4.1d).

Fig 5.4.1d: Consistent Condom use with clients/non-paid partners, Pakistan 2016-17





Respondents were asked to show whether they had a condom with them at the time of the interview. Most of the TG-SW from Gujranwala (71%), Karachi (70%) and Jhelum (62%) were carrying a condom at the time of the interview. TG-SW interviewed in Bannu had no condoms with them at the time of the interview, while only 1% of TG-SWs in Multan were carrying a condom (Figure 5.4.1e).

Fig 5.4.1e: TG-SWs carrying a condom at the time of the survey by city, IBBS 2016-17

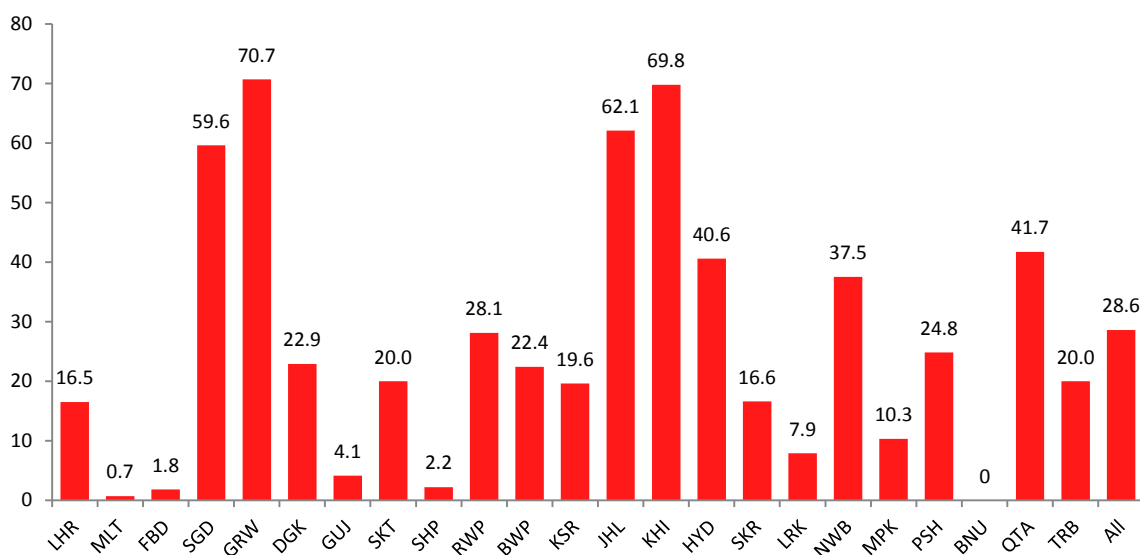
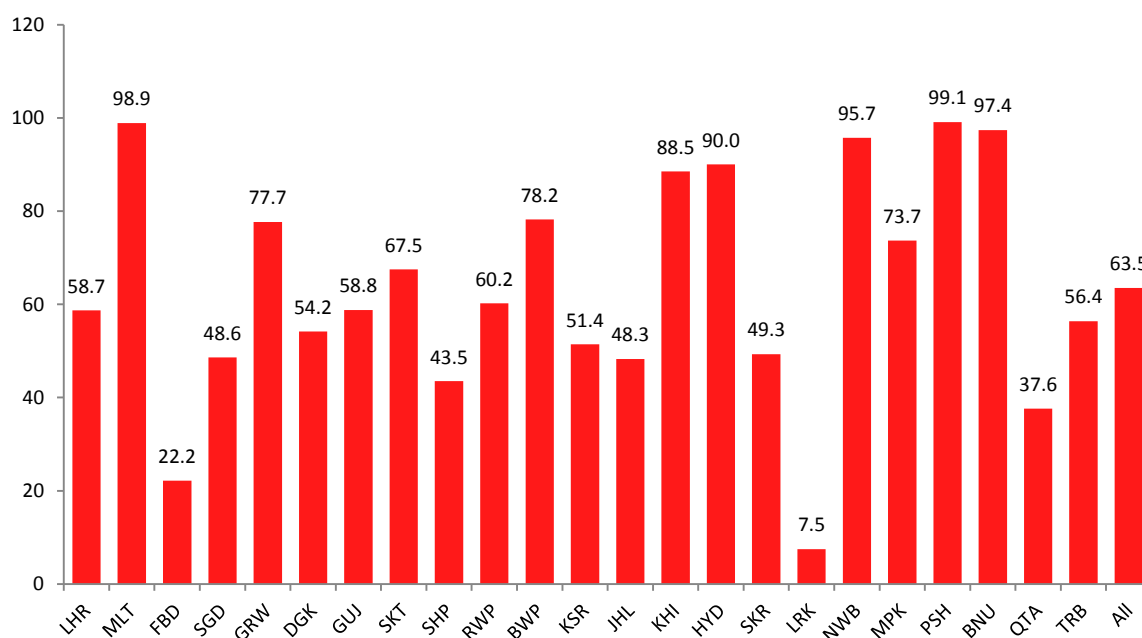


Figure 5.4.1f shows the proportion of TG-SWs that used lubricants during their last anal encounter by city. Almost all the TG-SWs interviewed from Peshawar, Multan, Bannu, Nawabshah and Hyderabad reported using lubricants. It should be noted here that the use of a lubricant does not necessarily means the use of a water based lubricant as recommended by HIV prevention

strategy. It could be any sort of lubrication used for anal sex, which could be oil, cream or lotions. The lowest proportion of lubricant use was reported among TG-SWs from Larkana at 8%.

Fig 5.4.1f: Use of lubricants at last anal sex with a client by city, Pakistan 2016-17



Use of alcohol/drugs during sex was reported by 44.2% of the TGSW in the past 12 months. To understand their interaction with other key populations, TGSWs were asked about whether they had sex with a PWID in the past 12 months and whether they injected drugs in the past 6 months. Approximately 4% of TG-SWs reported having sex with a PWID in the past year, while 2.6% reported injecting drugs in the past 12 months.

5.4.2 Non-Sex Workers Transgender

Among all the TGs interviewed, 580 were Non-SW TGs from 15 cities. It is important to note that not all cities had Non-SW TGs i.e. transgender that do not have sex in exchange of money or goods.

Non-SW TGs reported having an average of 3.7 sexual partners during the past month. Consistent condom use with sexual partners was reported by 9.7% of Non-SW TGs. At last anal sex, 12.1% of Non-SW TGs reported using a condom, while 2.4% of Non-SW TGs reported using a condom at last oral sex. Alcohol/drug use during sex was reported by a third of the Non-SW TGs interviewed (31%). A very small proportion of Non-SW TGs reported having sex with a PWID in the past year, injecting drugs in the past 12 months or selling blood for money in the past year (3.3%, 0.3% and 3.1% respectively) (table 5.4.2a)

Table 5.4.2a: HIV risk behaviours and practices of Non-SW TGs, Pakistan 2016-17

Practice / Behaviour	Non-SW TGs %
No of regular partners during last month (mean \pm SD) (mode)	3.7 \pm 3.9 (1)
Consistent condom use with sexual partner/s	9.7
Condom use at last intercourse	
Anal sex	12.1
Oral sex	2.4
Alcohol/drug use during sex in the past 12 months	31.0
Had sex with PWIDs in past 12 months	3.3
Injected drugs in the past 12 months	0.3
Sold blood for money in past 12 months	3.1

To understand more about consistent condom use by Non-SW TGs we looked at it by age, education and city. The results are shown in Figures 5.4.2a, b & c.

Fig 5.4.2a: Consistent condom use by Non-SW TGs by age groups, Pakistan 2016-17

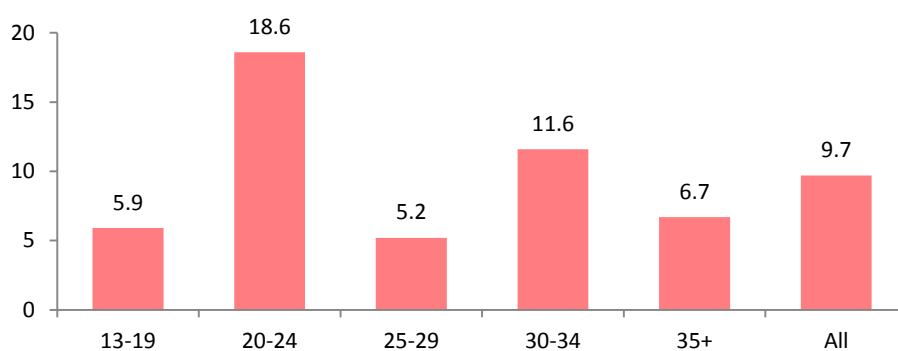


Fig 5.4.2b: Consistent condom use by Non-SW TGs by education, Pakistan 2016-17

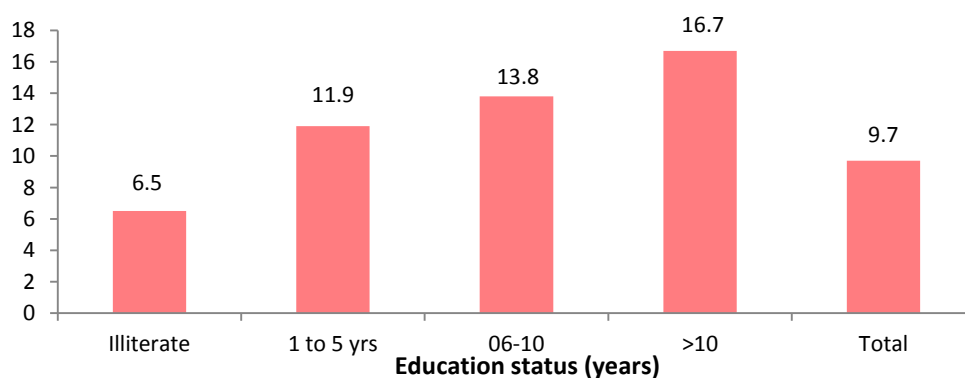
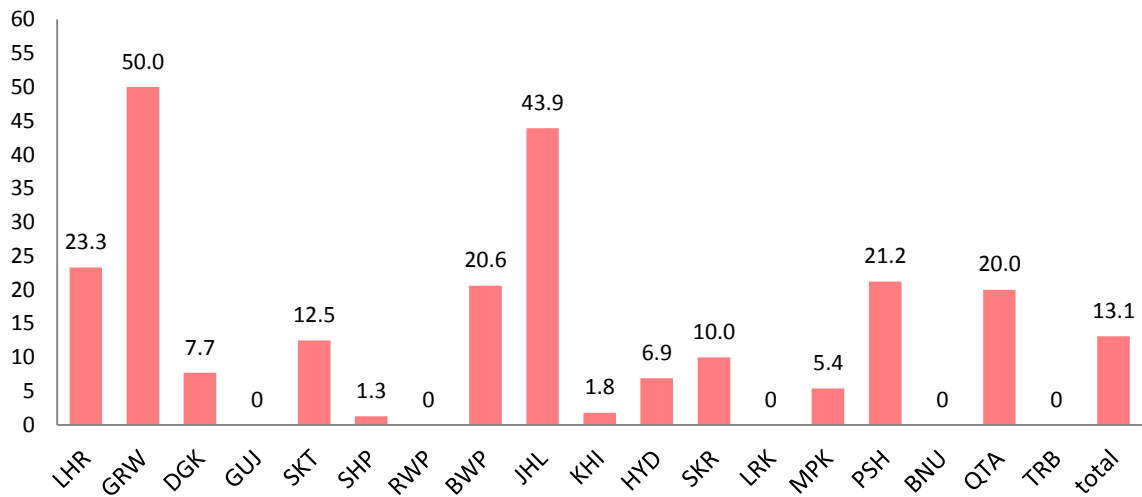


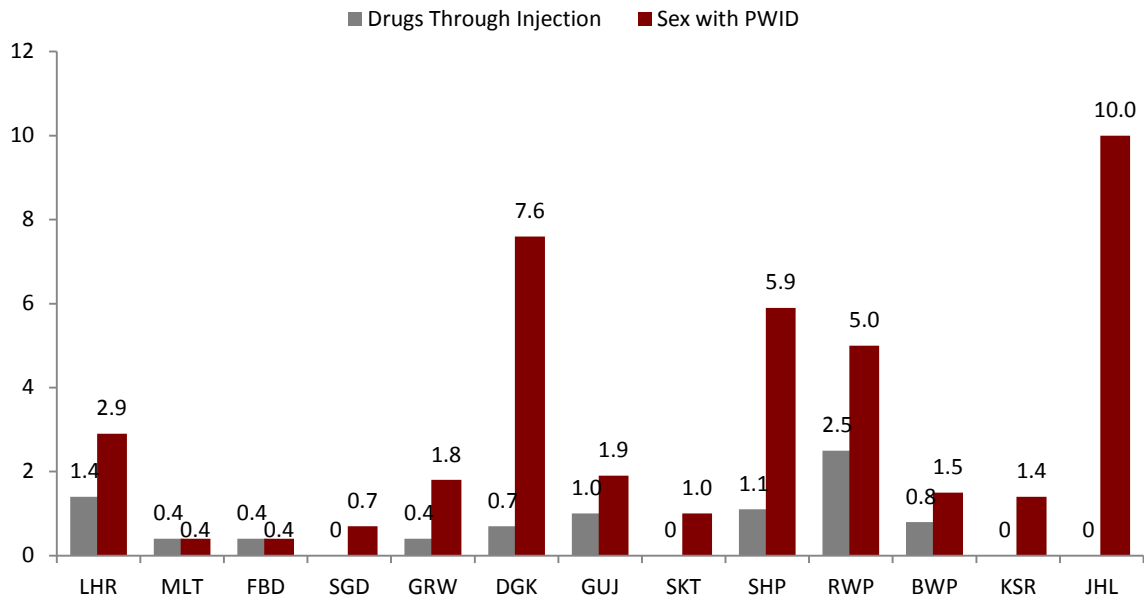
Fig 5.4.2c: Non-SW TGs consistently using condoms by city, Pakistan 2016-17

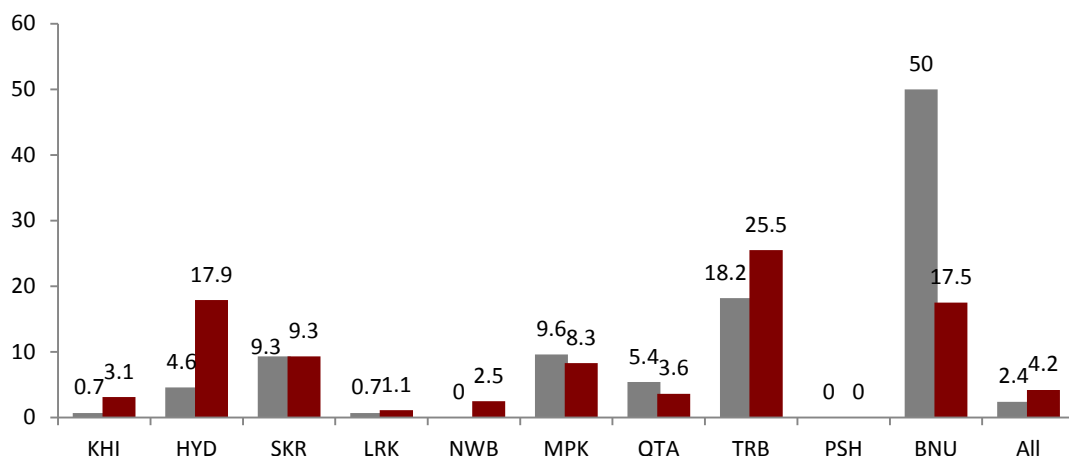


5.4.3 Drug Injecting

Among all TGs interviewed, 4.3% of TGSW and 3.3% of the Non-SW TGs reported having sex with a PWID in the past year, whereas 2.6% of TGSWs and 0.3% of the Non-SW TGs reported that they had injected drugs in the past 12 months (Table 5.4.1a). Among cities, Bannu and Turbat reported the highest proportions of TGs injecting drugs and having sex with a PWID (Figure 5.4.3a).

Fig 5.4.3a: TGs injecting drugs and having sex with a PWID, Pakistan 2016-17





5.5 HIV and STI Related Knowledge

Approximately 75% of all the TGs had heard of HIV and/or AIDS (Table 5.5a), while 46.4% believed that a healthy looking person could have the disease. More than half the TGs interviewed (58.1%) reported being aware that HIV can be transmitted by sexually and 32.8% knew that HIV could be transmitted through a sharp instrument/syringe (Table 5.5a). Approximately 47% of all TGs reported being aware that condoms can prevent HIV transmission, while one third of all TGs reported being aware that sexual abstinence to prevent HIV transmission. Only 19.1% of the TGs were aware that the use of clean needles was important in preventing HIV transmission (Table 5.5a). By typology, knowledge levels about HIV, its modes of transmission and prevention methods were better amongst TG-SW than Non-SW TGs.

Table 5.5a: HIV and STI related knowledge among TGs, IBBS 2016-17

Knowledge area	All TGs (%)	TG-SW (%)	Non-SW TGs (%)
Ever heard of HIV and/or AIDS	75.1	78.0	52.6
Healthy looking person can have HIV/AIDS	46.4	48.9	26.4
HIV transmitted by sexual intercourse	58.1	61.0	35.3
HIV transmitted by sharp instrument/needle	32.8	34.2	21.7
Condom can prevent HIV transmission	47.4	49.6	30.5
Sexual abstinence to prevent HIV transmission	31.2	32.6	20.7
Clean needle/syringe can prevent HIV	19.1	19.8	13.1
Ever tested for HIV	34.2	37.3	9.3
Know where to receive HIV test	42.5	45.7	16.7
Self-perception of risk for HIV	23.0	24.5	11.2
Awareness of sexually transmitted infection (STIs)			
Aware of STIs	60.3	63.2	36.9
Self-reported STI in past 12 months	20.6	22.6	4.3

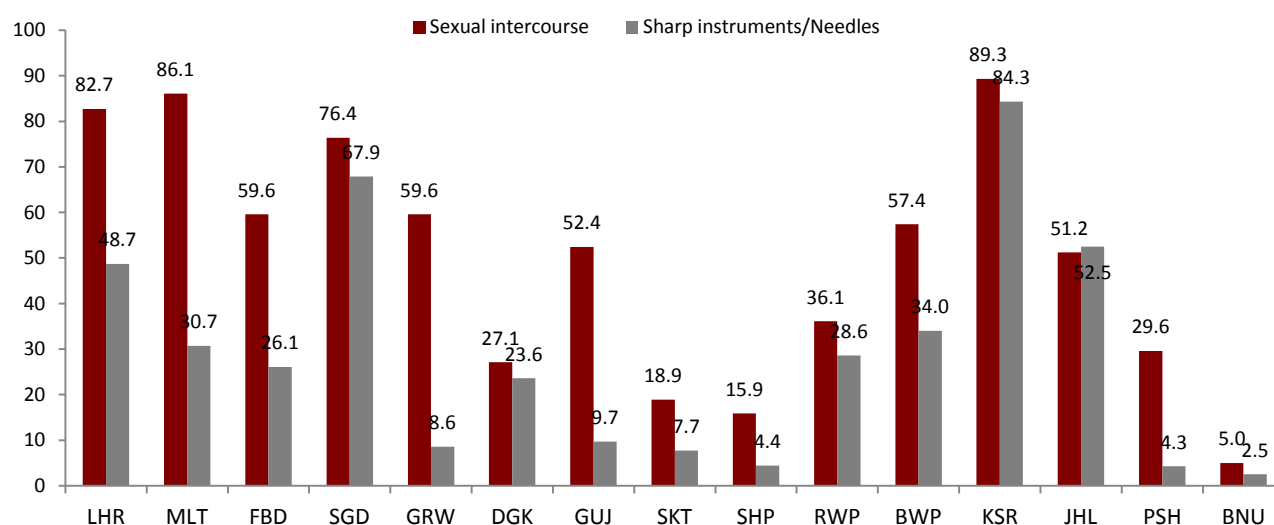
Symptoms experienced-

Urethral discharge	2.1	2.2	1.6
Scrotal swelling	4.9	5.4	0.3
Genital Ulcers	1.6	1.8	0.3
Genital Warts	11.2	12.3	2.8
Anal Discharge	6.8	7.5	1.4
Received treatment for reported STIs	20.0	22.1	4.1

HIV testing was reported by 34.2% of all TGs - 37.3% of TG-SWs reported getting tested, while far fewer Non-SW TGs reported getting tested (9.3%, Table 5.5a). When asked about their self-perceived risk for HIV, 23% of all TGs reported being at risk for HIV. Approximately 43% of all TGs interviewed reported knowing where to receive a HIV test. With regards to sexually transmitted infections, 60% of all TGs had knowledge about STIs, while 20% self-reported having a STI in the past 12 months. One fifth of all the TGs reported receiving treatment for the self-reported STI. The proportions for STI knowledge, reporting and treatment were higher amongst TG-SWs than Non-SW TGs.

City wise variation was noted for knowledge about modes of HIV transmission. Kasur was the only city where TGs reported knowing about both sexual intercourse and needles/sharp objects as modes of HIV transmission. Bannu had the lowest knowledge levels among all the cities where TGs were interviewed. Overall, knowledge about sexual transmission of HIV was higher than knowledge about transmission through needles/sharp items (Figure 5.5a). City wise variations for TG-SW and Non-SW TGs are presented in Figures 5.5b and Figure 5.5c respectively.

Fig 5.5a: Knowledge of modes of HIV transmission among ALL TGs by city, Pakistan 2016-17



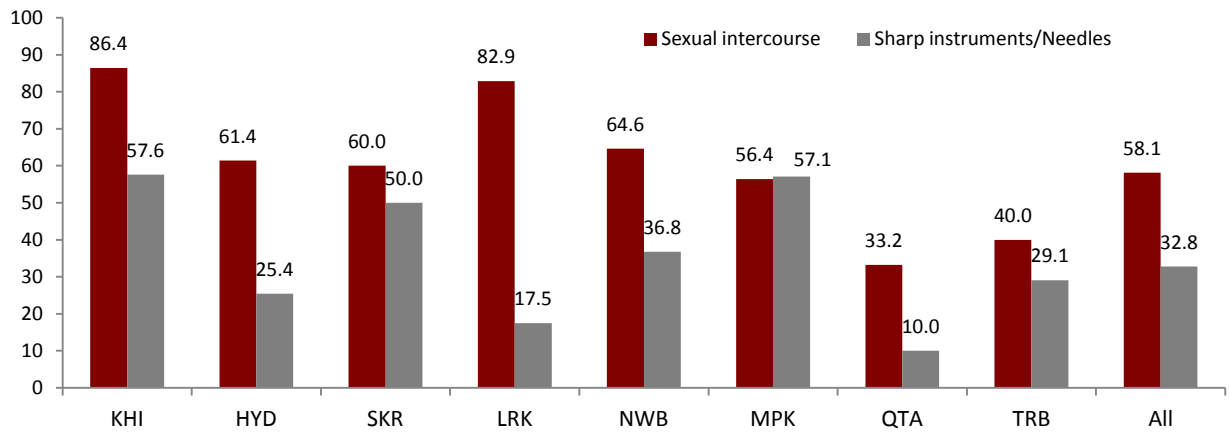


Fig 5.5b: Knowledge of HIV transmission in TG-SW by city, Pakistan 2016-17

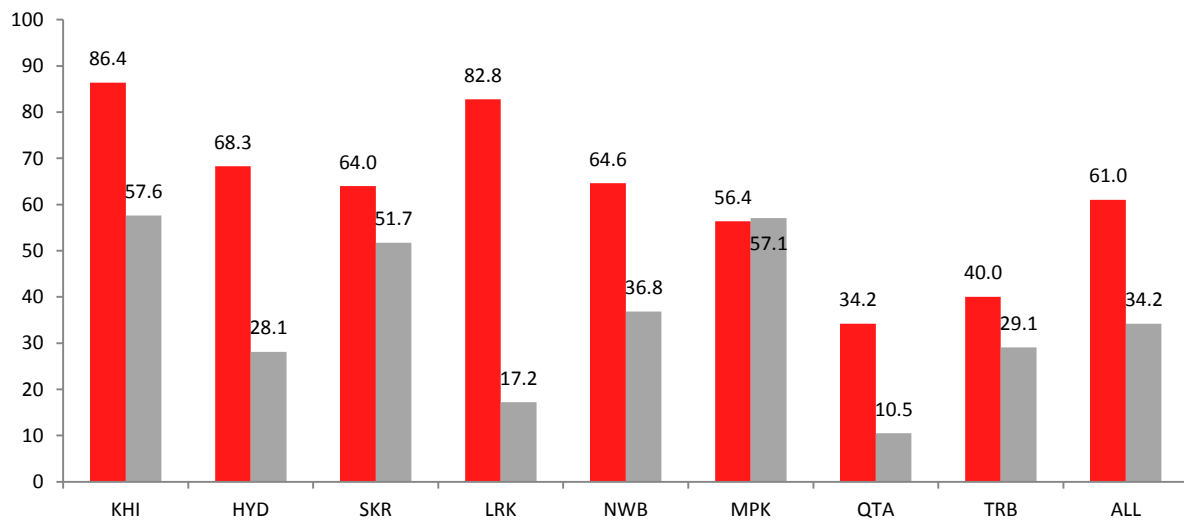
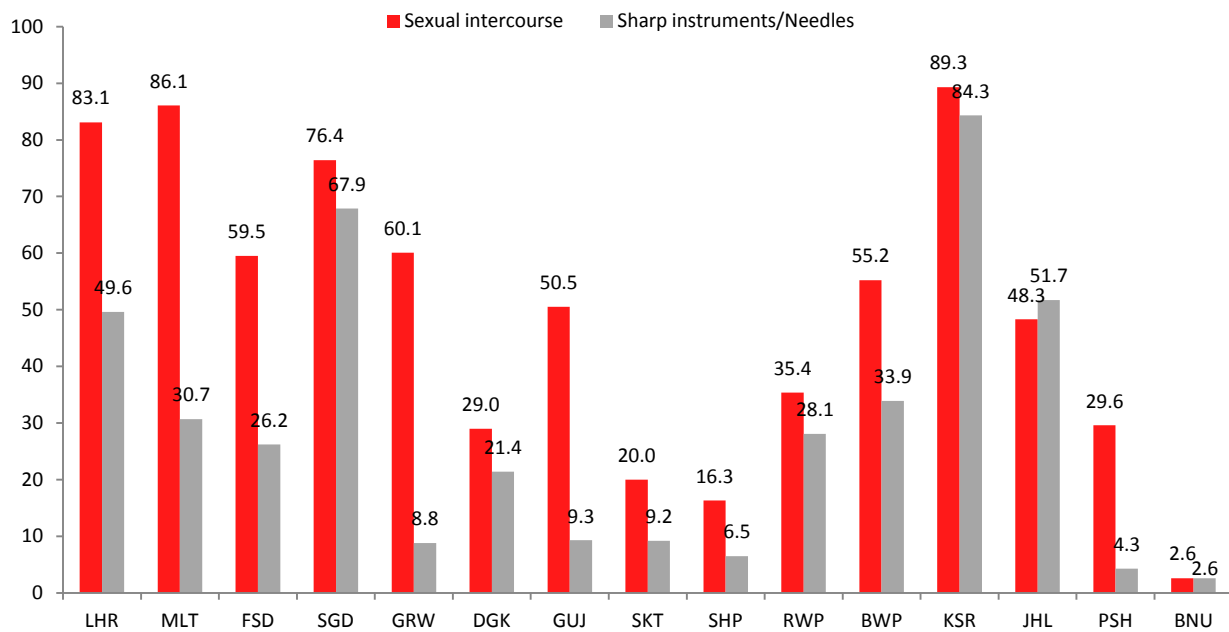
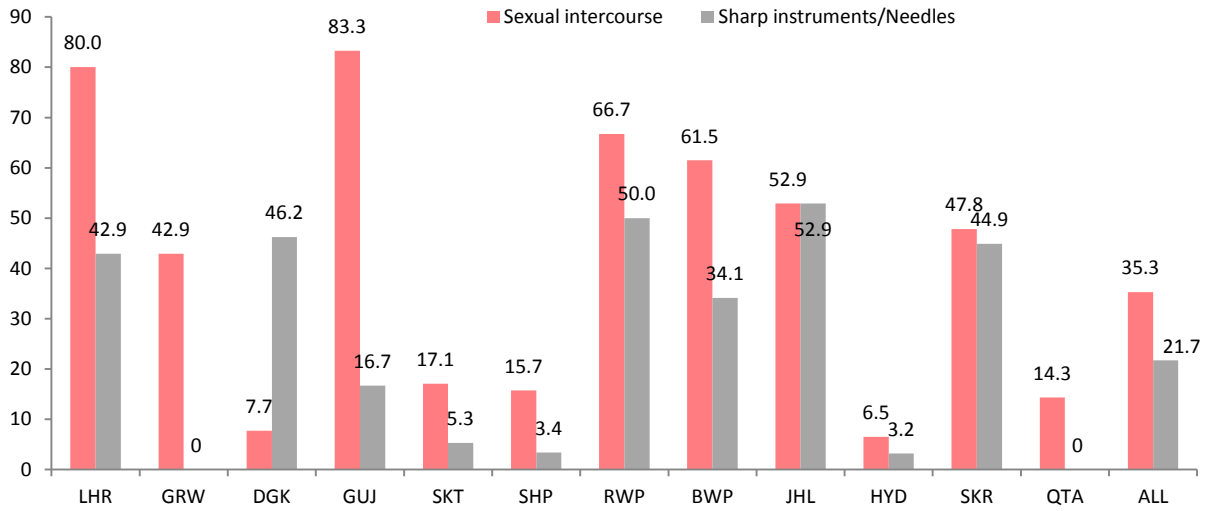
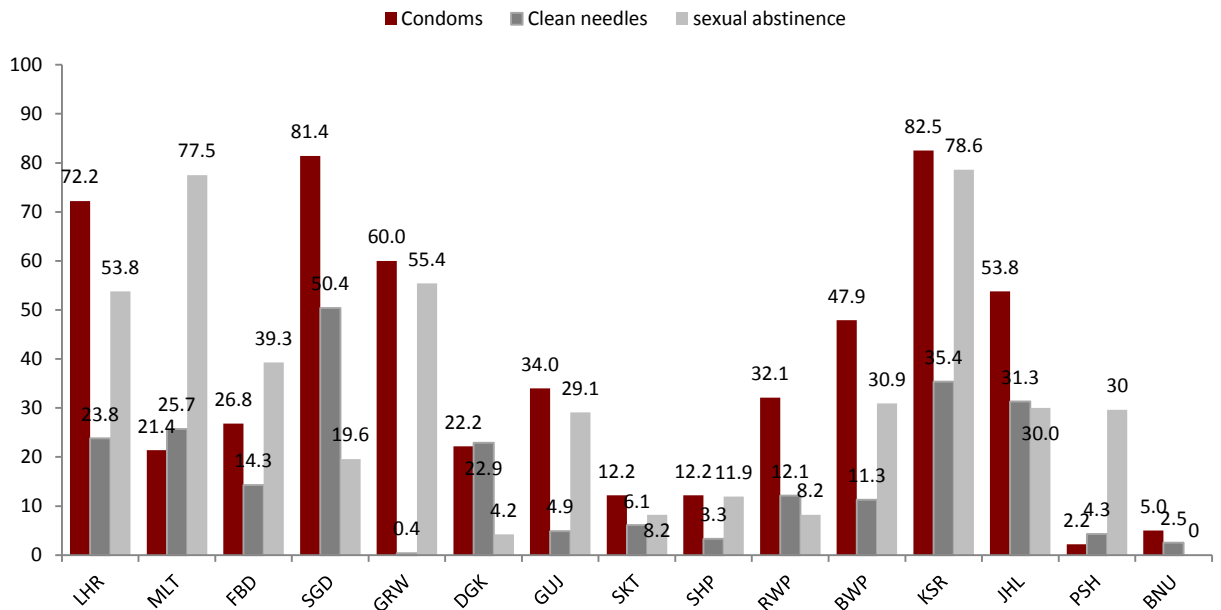


Fig 5.5c: Knowledge of HIV transmission amongst Non-SW TGs by city, Pakistan 2016-17



City wise analyses of knowledge of HIV prevention measures among TGs also show great variation. Knowledge about condoms as a preventive measure was higher in all cities comparative to knowledge about clean needles and sexual abstinence, with proportions reported in Karachi, Kasur, Larkana and Sargodha being the highest amongst all other cities (Figure 5.5d). Knowledge about clean needles as a preventive measure was the lowest among all three preventive measures, with the proportions reported by TGS in different cities being extremely low.

Fig 5.5d: Knowledge of HIV preventive measures among ALL TGs, Pakistan 2016-17



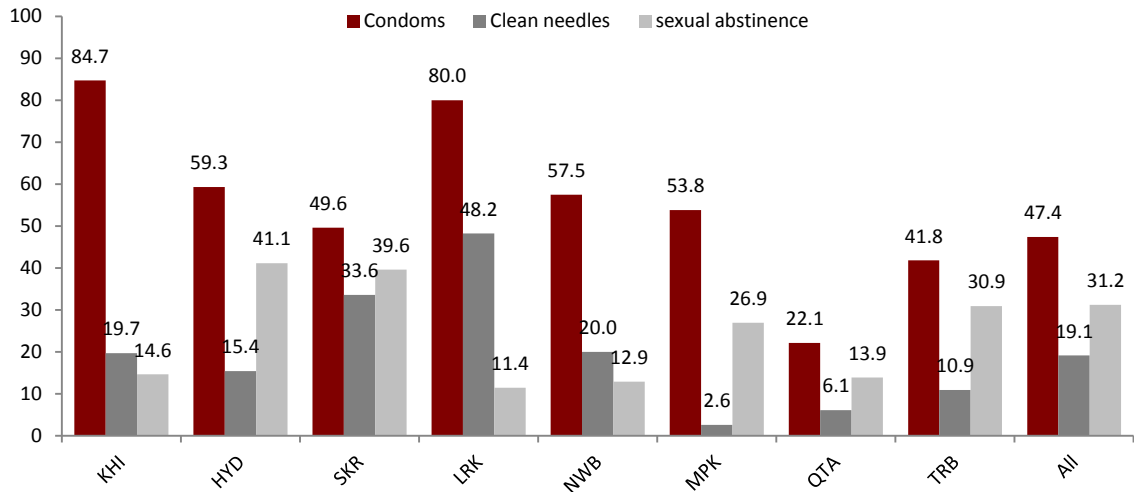


Fig 5.5e: Knowledge of HIV preventive measures amongst TG-SW by Cities, Pakistan 2016-17

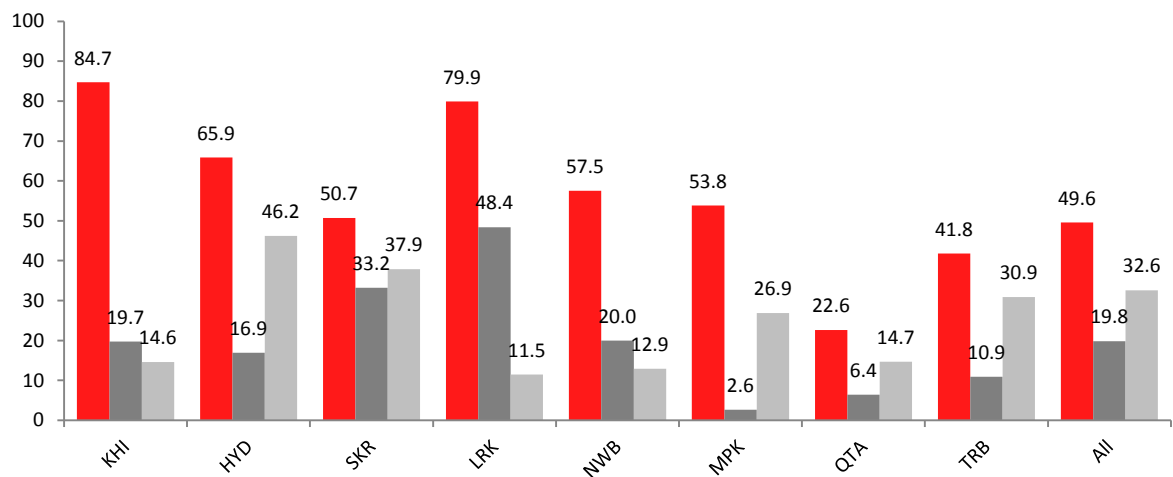
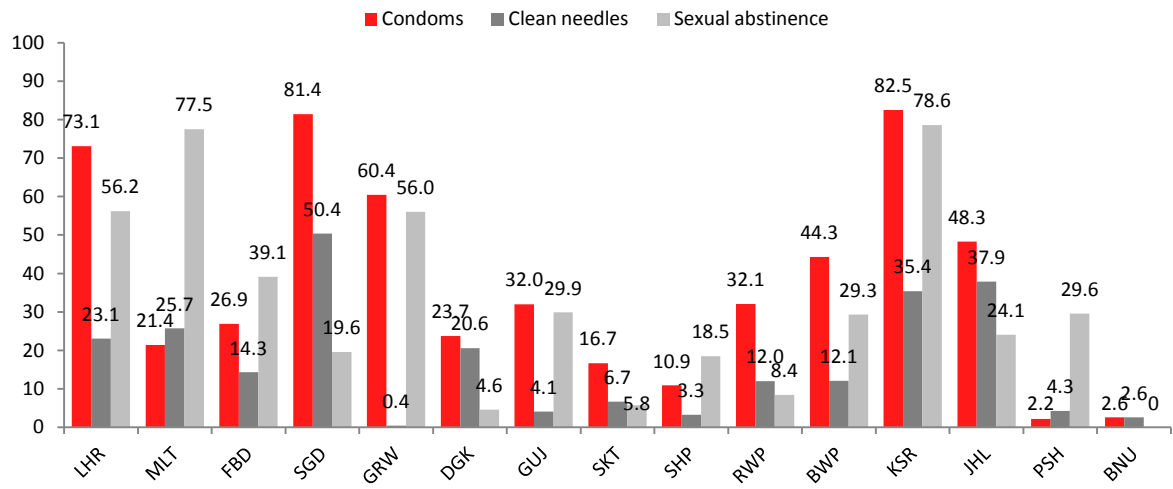
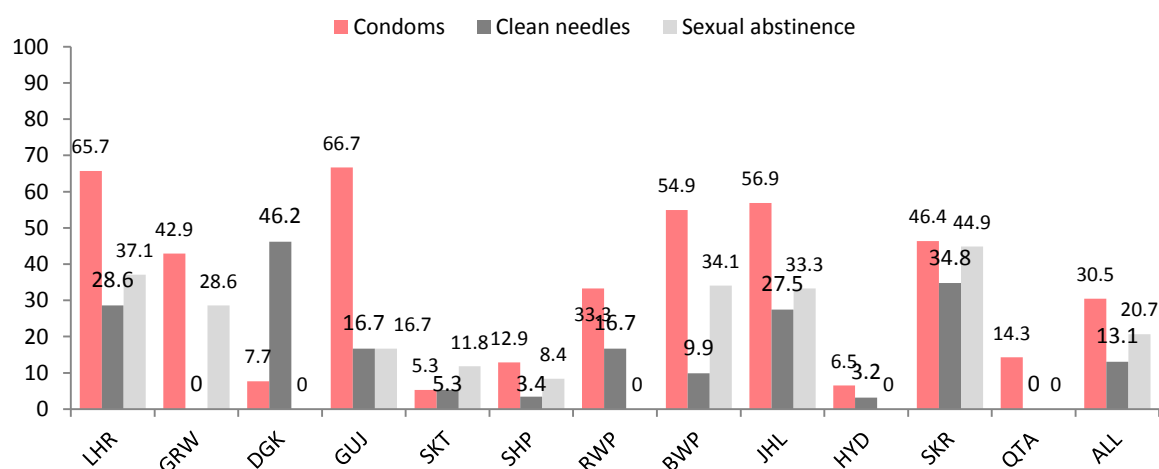


Fig 5.5f: Knowledge of HIV preventive measures amongst Non-SW TGs, Pakistan 2016-17



5.6 Program Exposure and Utilization

Approximately 39% of TGs were aware of any HIV prevention programs (SDPs) in their city. However 15.1% of these TGs said they ever utilized these services (Table 5.6a). Awareness about SDPs amongst TG-SW was more than double comparative to Non-SW TGs. Utilization was higher amongst TG-SWs.

Table 5.6a: Knowledge and utilization of HIV prevention program among TGs, IBBS 2016-17

Knowledge Area	All TGs (%)	TG-SW (%)	Non-SW TGs (%)
Ever heard of HIV prevention programs	38.9	41.7	16.4
Services utilized	15.1	16.5	4.5
Received free condom in past one month	31.4	34.4	7.9

Awareness of SDPs among TGs was further analyzed across the different cities. More than 85% of TGs in Multan, Sargodha, Karachi and Larkana reported awareness about SDPs, while proportions for all other cities were low. Reporting about utilization of services was low across all cities with the exception of Karachi where 76% of TGs reported utilizing services (Figure 5.6a). These patterns were consistent among TG-SWs (figure 5.6b). However, among Non-SW TGs, all those interviewed in Faisalabad, 77% in Lahore and 59% in Jhelum reported awareness about SDPs, however the utilization of services in most cities was insignificant.. None of the Non-SW TG reported awareness of preventive serves in Gujrat, DG Khan, Sialkot, Larkana and Bannu

Fig 5.6a: Awareness & utilization of HIV prevention programs among TGs, Pakistan 2016-17

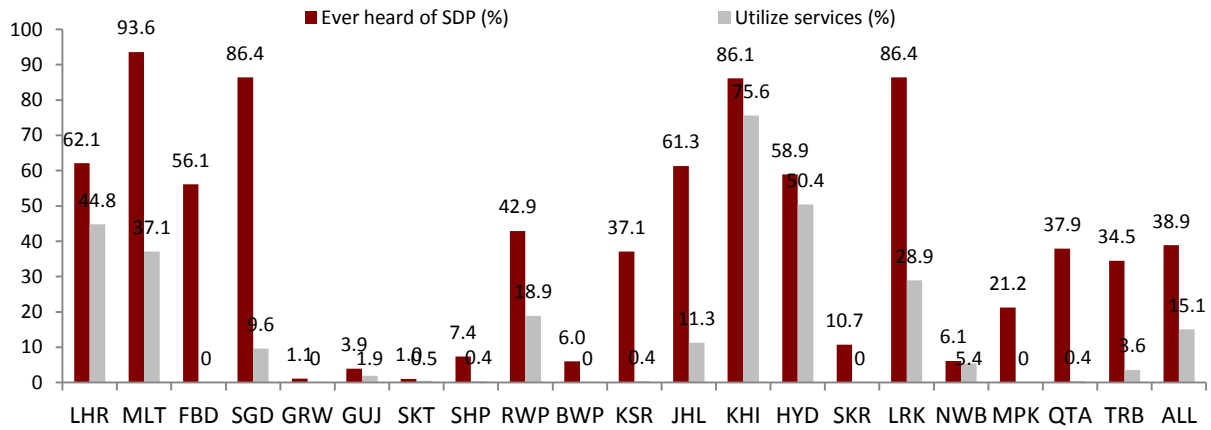


Fig 5.6b: Awareness & utilization of HIV prevention programs among TGSWs, Pakistan 2016-17

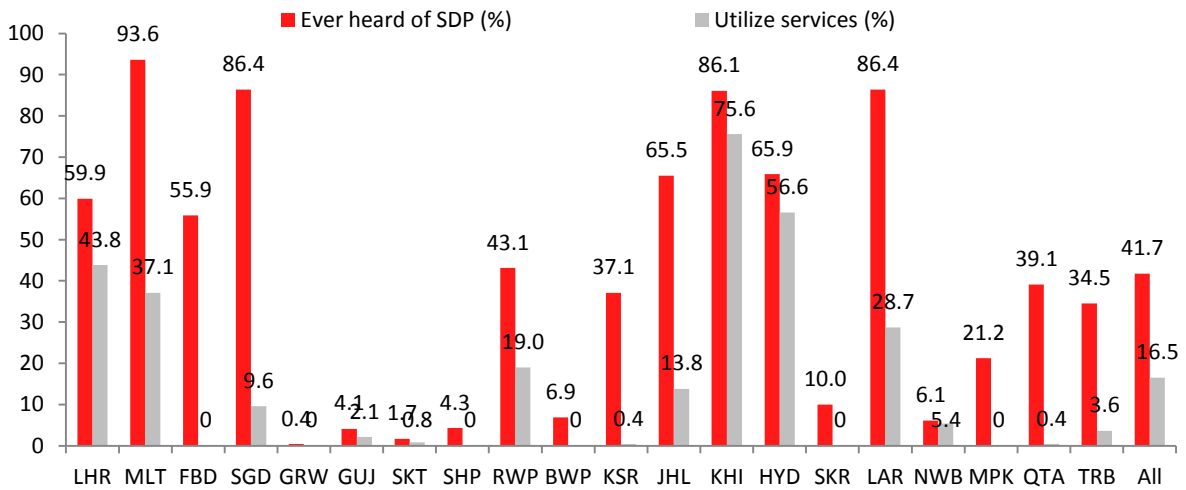
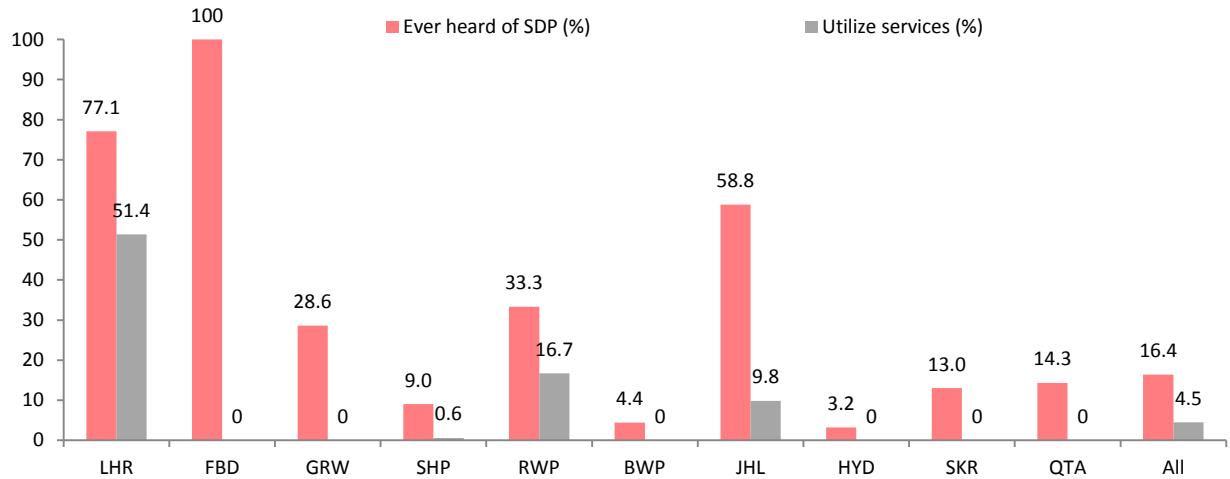


Fig 5.6c: Awareness & utilization of HIV programs in non SWTGs, Pakistan 2016-17



Further analysis of services utilized showed that obtaining condoms from the SDP was the primary service for which SDPs were accessed in the past year (13.9%), followed by counselling (10.4%) and HIV testing (8.2%, Figure 5.6d).

Fig 5.6d: Services utilized by All TGs & TGs-SW in past 6 months, Pakistan 2016-17

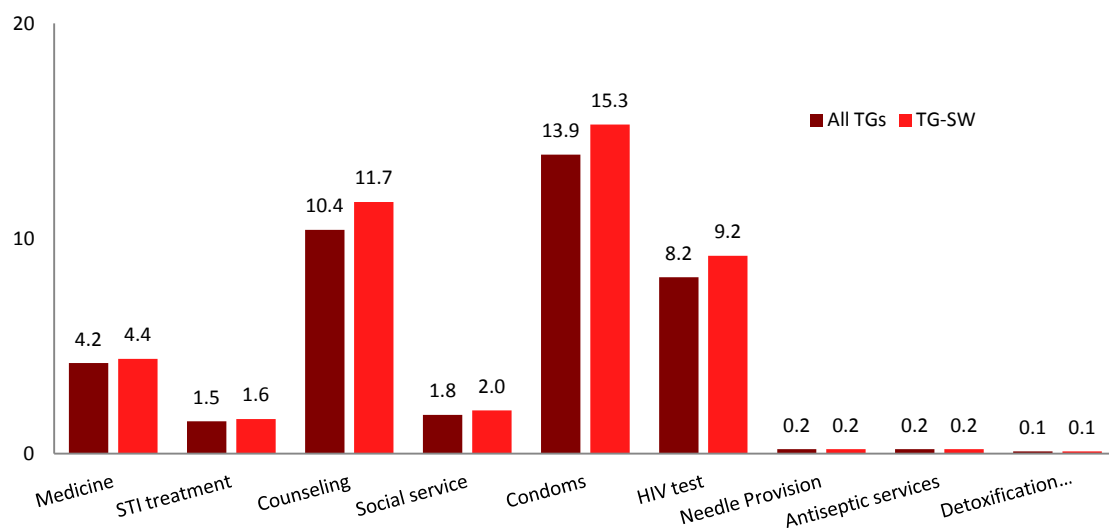


Table 5.6b shows city wise distribution of service utilization by TGs at SDPs in the past year. It is important to note that none of the TGs reported utilization of ANY services in the following cities; Faisalabad, Gujranwala, D.G Khan, Sheikhpura, Bahawalpur, Sukkur, Mirpurkhas, Peshawar, Bannu, Quetta.

Table 5.6b: Types of services used in the past 12 months by All TGs, Pakistan 2016-17

Services	LHR	MLT	SGD	GUJ	SKT	RWP	KSR	JHL	KHI	HYD	LAR	NWB	TRB
Medicines	29.6	18.6	8.6	0	0	0.4	0	3.8	6.4	8.8	0	3.9	0
STI treatment	4	6.4	6.1	0	0	0	0.4	2.5	0.7	8.8	0	0.4	1.8
Counseling	4.7	33.6	3.9	0	0	0.4	0	5	72.2	51	27.6	0	0
Social services	0.4	13.2	0.7	0	0	0	0	2.5	0	1.2	17.2	0	0
Condoms	35.7	33.2	9.3	1	0.5	17.1	0	8.8	75.3	52.2	28	4.6	1.8
HIV testing	15.2	6.8	9.3	0	0	3.2	0.4	2.5	70.5	48.2	0.4	0	0
Needle provision	0	0.4	0.4	0	0	0	0	3.8	1	0.4	0	0	0
Antiseptic services	1.1	0	0	1	0	0	0	2.5	1.7	0	0	0	0
Detoxification	0	0	0.4	0	0	0	0	2.5	0.3	0	0	0	0

5.7 Harassment, Discrimination, Violence & Other Risk Behaviors

More than half the TGs reported being discriminated against. Interestingly, twice as many TG-SWs reported being discriminated in comparison to Non-SW TGs (55.8% vs 21.4%; table 5.7), possibly owing to TG-SW's nature of work. Almost a fifth of the TGs interviewed reported ever being treated unfairly or denied health care. More than half the TGs reported ever being physically hurt (hit or choked or threatened with a knife or other weapon), while 56% of TGs reported being tricked/ lied into having sex without consent. Almost half of the interviewed reported ever being beaten or otherwise physically forced to have sex. For all these variables, the proportions reported by TG-SW were a lot higher than those reported by Non-SW TGs.

Table 5.7a: Harassment, Discrimination, Violence and other Risk Behaviors IBBS 2016-17

	All TGs (%)	TG-SW (%)	Non-SW TGs (%)
Being discriminated	52.0	55.8	21.4
Ever been treated unfairly or denied health care	16.6	18.2	3.8
Ever been physically hurt (hit or choked or threatened with a knife or other weapon)	53.3	56.0	32.6
Ever tricked/ lied into having sex without consent	55.5	58.3	33.6
Ever beaten or physically forced to have sex	51.4	54.3	28.3
Arrested in the past 12 months	19.9	21.2	9.7

5.8 HIV Prevalence

Of the total 5191 TGs tested for HIV during this 5th round of IBBS, 287 tested positive for HIV. The weighted HIV prevalence for TG was 7.1% (95% CI; 6.8, 7.4) [un-weighted prevalence 5.6% (95% CI: 5.0, 6.2)]. The highest prevalence for HIV overall for all TGs was reported from Larkana (18.2%) followed by Bannu (15%) and Karachi (12.9%, Table 5.8a). In the 23 cities where IBBS was conducted for TGs, only two cities-Kasur and Jhelum-had no TGs that tested positive for HIV.

Table 5.8a: HIV Prevalence among ALL TGs, Pakistan 2016-17

	Tested	Positive	Prevalence %	Prevalence 95% CI
Lahore	277	15	5.4	3.3,8.8
Multan	280	5	1.8	0.7,4.1
Faisalabad	280	9	3.2	1.7,6.1
Sargodha	280	1	0.4	0.1,2.0
Gujranwala	280	6	2.2	1.0,4.6

DGK	142	12	8.5	5.0,14.2
Gujrat	103	4	3.9	1.5,9.6
Sialkot	182	3	1.6	0.1,4.7
Sheikhupura	270	7	2.6	1.3,5.3
Rawalpindi	280	17	6.1	3.8,9.5
Bahawalpur	265	9	3.4	1.8,6.3
Kasur	280	0	0.0	0.0
Jhelum	67	0	0.0	0.0
Karachi	295	38	12.9	9.5,17.2
Hyderabad	280	25	8.9	6.1,12.9
Sukkur	280	22	7.9	5.3,11.6
Larkana	280	51	18.2	14.1,23.1
Nawabshah	280	30	10.7	7.6,14.9
Mirpurkhas	156	14	9.0	5.4,14.5
Peshawar	230	3	1.3	0.4,3.8
Bannu	40	6	15.0	7.1,29.1
Quetta	279	9	3.2	1.7,6.0
Turbat	55	1	1.8	0.3,9.6

Table 5.8b shows segregated prevalence for TG-SWs and Non-SW TGs. HIV testing was conducted on 4611 TG-SWs in 23 cities out of which 272 were found to be HIV positive. The weighted HIV prevalence reported in TG-SW was 7.5% (95% CI; 7.2, 7.8) [un-weighted prevalence 5.9% (95% CI: 5.3, 6.6)]. Amongst TG-SWs, HIV prevalence was highest in Larkana (18.3%), followed by Bannu (15.4%) and Karachi (12.9%).

Table 5.8b: HIV Prevalence among TG-SWs and Non-SW TGs City wise, IBBS 2016

	TGSWs		Non-SW TGs	
	Prevalence %	Prevalence 95% CI	Prevalence %	Prevalence 95% CI
Lahore	5.8	3.5,9.5	2.9	0.5,14.4
Multan	1.8	0.8,4.1	-	-
Faisalabad	2.9	1.5,5.6	Only one TGs tested and found +ve	
Sargodha	0.4	0.1,2.0	-	-
Gujranwala	2.2	1.0,4.7	0.0	-
DGK	9.2	1.0,4.7	0.0	-

Gujrat	4.1	1.6,10.1	0.0	-
Sialkot	0.9	0.2,5.0	2.6	0.7,9.1
Sheikhupura	3.3	1.1,9.2	2.3	0.9,5.6
Rawalpindi	5.8	3.6,9.3	16.7	3.0,56.4
Bahawalpur	3.5	1.6,7.5	3.3	1.1,9.2
Kasur	0.0	0.0	-	-
Jhelum	0.0	0.0	0.0	-
Karachi	12.9	9.5,17.2	-	-
Hyderabad	10.0	6.9,14.4	0.0	-
Sukkur	9.5	6.2,14.2	2.9	0.8,10.0
Larkana	18.3	14.2,23.2	0.0	-
Nawabshah	10.7	7.6,14.9	-	-
Mirpurkhas	9.0	5.4,14.5	-	-
Peshawar	1.3	0.4,3.8	-	-
Bannu	15.4	7.2,29.7	0.0	-
Quetta	3.0	1.5,5.8	-	-
Turbat	1.8	0.3,9.6	7.1	1.3,31.5

Among the 581 Non-SW TGs interviewed, 15 tested positive for HIV and HIV prevalence was 3.0% (95% CI; 2.4, 3.7) [un-weighted prevalence 2.7% (95% CI: 1.6, 4.3)]. Out of the 15 cities where Non-SW TGs were interviewed, 8 cities had Non-SW TGs that were found to be HIV positive.

6. FEMALE SEX WORKERS (FSWs)

For the purpose of this study a female sex worker was defined as “any female who exchanges sex with a man in return for money or benefits, irrespective of site of operation (e.g. brothels, street, home, hotel, etc.)”. There was a wide range of typologies of FSWs determined through this study based on the type of spots that FSWs congregate and associate with clients.

KEY FINDINGS

- *The average current age of FSWs interviewed was 27.9 ± 6.1 years, with little variation between FSWs of different typologies. Overall, 6.6% of FSWs were less than 20 years of age.*
- *The average age of initiation of sex work reported by FSWs was 22.1 years and were involved in sex work for 5.7 years. Brothel based FSWs initiated sex work at a youngest age of 19.9 years and reported being involved in sex work for the longest duration (mean: 6.5 years) than other types of sex workers (KK; 5.4 years, Home-based; 5.6 years, Street-based; 6.1 years).*
- *Approximately half of the FSWs (46.9%) were married, and a small proportion were widowed (3.4%) or separated/divorced (12.9%). Among married, 82.9% were married with children. Among unmarried FSWs, majority (40.4%) worked in Kothikhana, followed by Home based FSWs (38%).*
- *The largest number of FSWs interviewed were living at homes (78.6%).*
- *A large proportion of FSWs (43.2%) reported being illiterate; illiteracy being more common among FSWs in brothels (65.59%) and least common among KK based FSWs (39.5%).*
- *Only 33.4% of all FSWs had a source of income other than sex work. Street based and home based FSWs were most likely to have other sources of income (37.2% and 36.6% respectively), while brothel-based FSWs were least likely to have another sources of income (6%).*
- *The monthly median income from all sources reported was PKR 22,000 (US \$245), while monthly median income from sex work was PKR 20,000 (US \$210). Sex work income was lowest for home-based FSWs (PKR 18000), and highest for Brothel Based FSWs (PKR 28,000). Income from sex work decreased with age. FSWs between 13 to 19 years of age reported an average monthly income of PKR 26,200 or US \$288, while those over 35 years of age had an income of PKR 18,772 or US \$207.*
- *Approximately one-fifth (20.1%) of FSWs interviewed did not belong to the city of interview.*
- *With the exception of street based FSWs, most FSWs (36.0%) relied on a “madam” as their main source of clients. 53.3% of Brothel based FSWs and 49.7% of Kothikhana based FSWs relied on Madam for clients. Personal telephone contact was the second most common source of clients as 44.1% of street-based, 35.8% of Home-base, 26.6% of KK-based and 24.1% of Brothel based FSWs relied on it.*
- *Overall, FSWs reported an average of 1.6 (SD 1.2) clients a day and an average of 34.2 (SD 35.6) clients per month. There were variations in client number by typology; brothel*

based FSW reported the highest number of clients at 2.4 clients per day and 58.7 clients in a month while home based FSWs reported the lowest daily average number of clients per day (1.4) and per month (30.6). Client volume also varies by age, with younger FSWs between aged 13-19 years having the highest client volume at 53.6 clients in past month as compared to 27.9 clients for FSW aged 35 years and above.

- Condom use by FSWs with clients was generally low. Only 38% of FSWs reported that they consistently used condoms with clients in the last month, and 10.9% reported using it with non-paying partners. Home-based FSWs reported consistently using condoms in comparison to other types of sex workers, with 45% of them reporting consistent condom use with paid clients compared to 34.3% Street-based FSW, 32.3% KK based FSW and 31.9% brothel based FSWs.
- Overall, 15.6% of FSWs reported using a condom at their last paid anal sexual act. The corresponding proportions for condom use at last vaginal, anal and oral sex among all FSWs was 50.5%, 15.6% and 8.1%, respectively.
- The proportion for condom use (vaginal, anal, oral and always condom use) was the lowest for the youngest age group compared to all age groups. Consistent condom use was reported by 35.6% of FSWs between 13-19 years of age whereas; condom use reported by the same age group during the last paid anal sex was 8.1% and oral sex was 5.4%.
- Consistent condom use increased with education; 67.2% FSW with more than 10 years of education reported consistent condom use compared to only 26.9% for FSWs who had received no education.
- Overall, 48% of all FSWs reported drinking alcohol and/or taking drugs in the past six months. The use of alcohol in sexual encounters was more commonly reported among brothel-based FSWs (61.5%), followed by KK-based FSWs.
- Overall 5.9% of FSWs reported injecting drugs in the past twelve months and 12.5% reported having sex with a PWID in the same time period. Both injecting drugs and having sex with a PWID were highest among street-based FSWs (10.2% and 16.8%, respectively).
- Overall, approximately 66.9% of FSWs had ever heard of HIV and/or AIDS, with brothel based sex workers reporting the highest level of awareness (76.4%).
- Only 50.8% of the FSWs interviewed knew that HIV could be transmitted by sexual intercourse. This knowledge was highest among brothel based FSW (61.0%) followed by 55.7% among KK-based FSW and 53.5% among Home based FSWs. Only 41.2% of street-based FSWs knew that HIV could be transmitted by sexual intercourse.
- Less than a fifth (18.9%) of the FSWs knew that HIV can be transmitted through sharp instruments or needles/syringes and only 14.6% knew about mother to child transmission of HIV.
- Approximately 47% of FSWs were aware that using a condom will prevent HIV transmission, and 30% believed that sexual abstinence is a way to prevent HIV.
- Only 22.8% of all FSWs believed that they were at risk for acquiring HIV infection. About 29% knew where HIV testing services were offered and only 17.2% had ever been tested for HIV.
- Nearly 64% were aware of STIs, and 30% reported having an STI in the past 12 months. Only 28.1% of these received treatment.
- More than one third of all the FSWs reported they have been discriminated because of

their status of being a sex worker (35.6%). KK based FSWs reported highest level of discrimination. More than half of all FSWs (52.4%) reported ever being physically injured (hit or choked or threatened with a knife or other weapon). About half (48.9%) of the FSWs interviewed reported being tricked and/or lied into having sex, and being beaten and/or physically forced to have sex (48.9% and 48.6% respectively).

- Only 29.9% of FSWs were aware of HIV prevention programs (SDPs) in their city and only 8.3% reported utilizing the service. Awareness of SDPs was higher among brothel-based FSWs (48.4%) comparative to the other FSW typologies. Knowledge of and participation in programs was higher among brothel based FSWs than any other typology – approximately 30% of brothel-based FSWs reported utilizing the HIV prevention services. Service utilization by street based FSWs was the lowest at 5.5%. Services availed by FSWs in the past twelve months showed that obtaining condoms (4.8%) from the SDP was the most utilized service across all cities followed by requests for medications (4.3%).
- Although HIV prevalence among FSWs was lowest among all key populations, however the concern is the higher prevalence of HIV in this group in comparison to the previous surveillance rounds. Overall weighted prevalence was 2.2% (95% CI: 2.1, 2.3) [un-weighted HIV prevalence 2.1% (95% CI: 1.8, 2.5)].

6.1 Estimated Numbers

Female sex workers (FSWs) form one the largest key populations with an average estimated number of 64,829 (range 70,428 to 57,734) spread over 4,514 spots in Pakistan. Based on these spots the average number of FSWs frequenting on each spot was calculated to be 5.4 which shows that the spots are large and there are fairly high number of FSWs at each spot.

Table 6.1a: Estimated number of Female Sex workers in Pakistan, 2016-17

City	Avg Est	Minimum Est	Maximum Est	% Dist
Bahawalpur	6,201	5,522	6,737	9.6%
Bannu	192	171	209	0.3%
DG Khan	1,349	1,201	1,466	2.1%
Gujranwala	4,069	3,624	4,420	6.3%
Gujrat	317	282	344	0.5%
Hyderabad	4,426	3,942	4,808	6.8%
Karachi	25,191	22,434	27,367	38.9%
Kasur	1,739	1,549	1,889	2.7%
Larkana	4,593	4,090	4,990	7.1%
Mirpurkhas	2,084	1,856	2,264	3.2%
Nawabshah	1,690	1,505	1,836	2.6%

Peshawar	765	681	831	1.2%
Quetta	4,121	3,670	4,477	6.4%
Rawalpindi	2,465	2,195	2,678	3.8%
Sheikhupura	6,252	5,568	6,792	9.6%
Sialkot	2,031	1,809	2,206	3.1%
Sukkur	3,307	2,945	3,593	5.1%
Turbat	523	466	568	0.8%
Grand Total	64,829	57,734	70,428	

6.2 Socio-demographic Characteristics

The main socio-demographic characteristics of FSWs are summarized in Table 6.2a. Across all cities where FSWs were interviewed, the average current age of FSWs was 27.9 ± 6.1 years, with little variation between FSWs of different typologies. Overall, 6.6% of FSWs were less than 20 years of age. By typology 8.1% of the Kothikhana based FSWs were under the age of 20, while 6.5%, 6.0% and 5.5% of the Street based FSWs.

Table 6.2a: Selected socio-demographic characteristics of FSWs, Pakistan 2016-17

Characteristics	Type of FSW ⁷				
	All FSWs (%)	Street (%)	Brothel (%)	Home (%)	Kothikhana (%)
Age					
13-19 years	6.6	6.5	6.0	5.5	8.1
20-24 years	20.5	17.7	26.9	21.4	21.9
25-29 years	34.3	31.3	37.4	35.9	34.8
30-34 years	21.6	24.0	22.5	19.9	21.3
35+ years	17.0	20.4	7.1	17.5	13.7
<i>Mean age \pm SD</i>	<i>27.99 \pm 6.11</i>	<i>28.5 \pm 6.23</i>	<i>26.4 \pm 5.1</i>	<i>28.06 \pm 6.1</i>	<i>27.4 \pm 5.94</i>
Marital status					
Unmarried	36.7	32.6	28.0	38.0	40.4
Married	46.9	48.3	56.0	47.5	43.3
Separate/Divorce	12.9	15.0	14.2	11.1	13.2
Widowed	3.4	4.2	1.6	3.3	3.1
Number of children					
None	17.1	20.7	19.8	15.3	15.2
1 to 2	41.3	36.9	48.1	41.5	45.3
3 to 4	28.2	27.9	26.7	28.3	28.4
5 and above	13.5	14.5	5.3	14.9	11.2

⁷ For description of typologies, please look at Report on Mapping of Key populations in Pakistan, NACP 2016-17.

Years of formal education*					
Illiterate	43.2	46.9	65.4	41.3	39.5
Up to 05 yrs	20.2	17.2	13.2	21.1	22.8
06 to 10 yrs	30.5	29.9	16.5	30.4	32.7
> 10 yrs	5.6	5.2	2.7	6.7	4.7
Living arrangement					
Lives at home	78.6	86.3	78.6	93.3	52.0
Hostel	3.0	7.2	2.7	2.6	1.6
Hotel/Guesthouse	0.7			-	-
Kothikhana (KK)	15.9	3.5	18.1	3.6	46.4
Jhompri / Jhughi	0.8	-	-	-	-
Residing with:					
Family	70.3	75.2	58.8	83.3	47.6
Lives with Friends	5.7	8.8	4.9	4.2	4.6
Lives alone	6.0	6.7	11.5	5.0	6.1
Other Income					
	33.4	37.2	6.0	36.6	27.1
Income (PKR)					
Median Income/Mo (all resources)	22,000	25,000	29,500	20,000	24,000
Median Income/Mo (From sex work)	20,000	20,000	28,000	18,000	20,000

Mean monthly income \pm SD of all FSWs (from all resources): 25,732 \pm 21,316 PKR (242 \pm 200 USD)

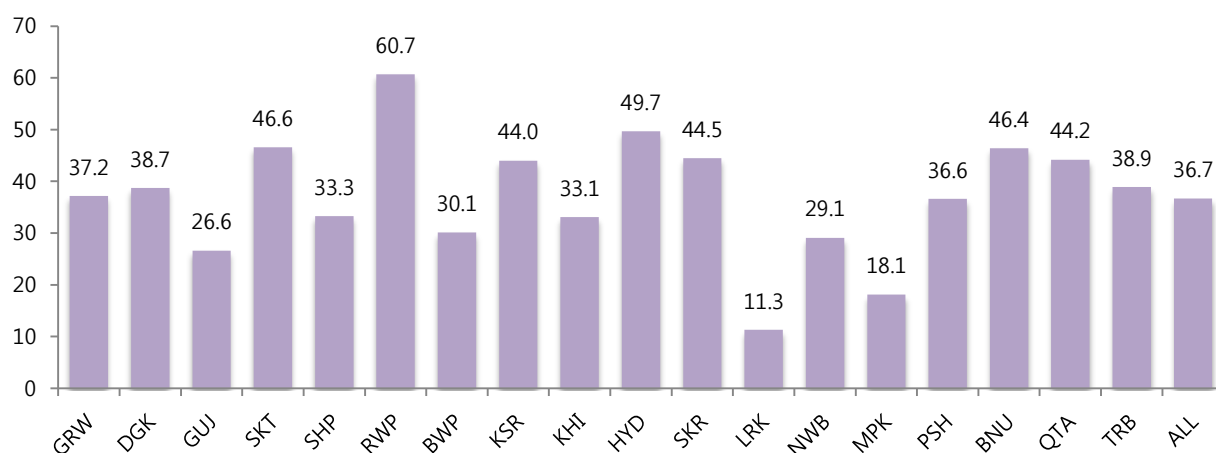
Mean monthly income \pm SD for all FSWs (from sex work): 23,103 \pm 20,857 PKR (217 \pm 196 USD)

PKR 1.00 = US \$ 0.0094 <https://www.oanda.com/currency/converter/>

*Proportions do not add up because of no response, don't know or missing

Approximately half of the FSWs (46.9%) were married, and a small proportion of FSWs were either widowed (3.4%) or separated/divorced (12.9%). Among unmarried FSWs, the majority (40.4%) worked in Kothikhana, followed by Home based FSWs (38%) (Table 6.2a).

Fig 6.2a: Unmarried FSWs by city, IBBS 2016-17

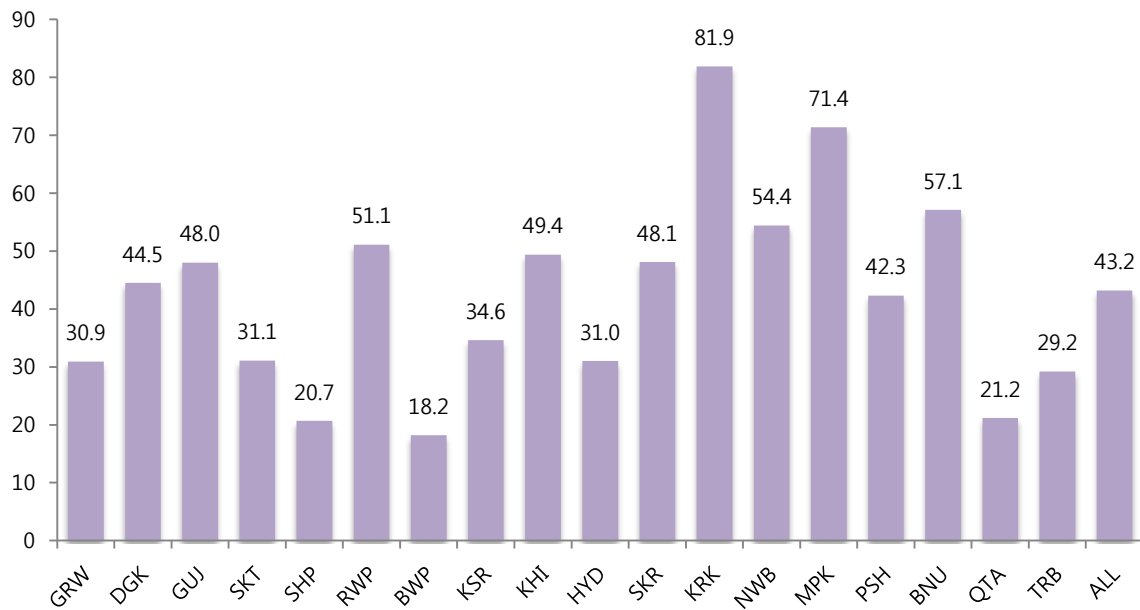


The largest percent of unmarried FSWs resided in Rawalpindi (60.7%) followed by Hyderabad (49.7%) and Sialkot (46.6%); Larkana had the lowest proportion of unmarried FSWs (11.3%). A majority (82.9%) of FSWs had children, with 41.3% reported having 1-2 children.

The majority of all FSWs across typology and cities reported living at home (78.6%). However, Kothikhana-based FSWs were least likely to live at home (52%) with 46.4% of them reported living at Kothikhana.

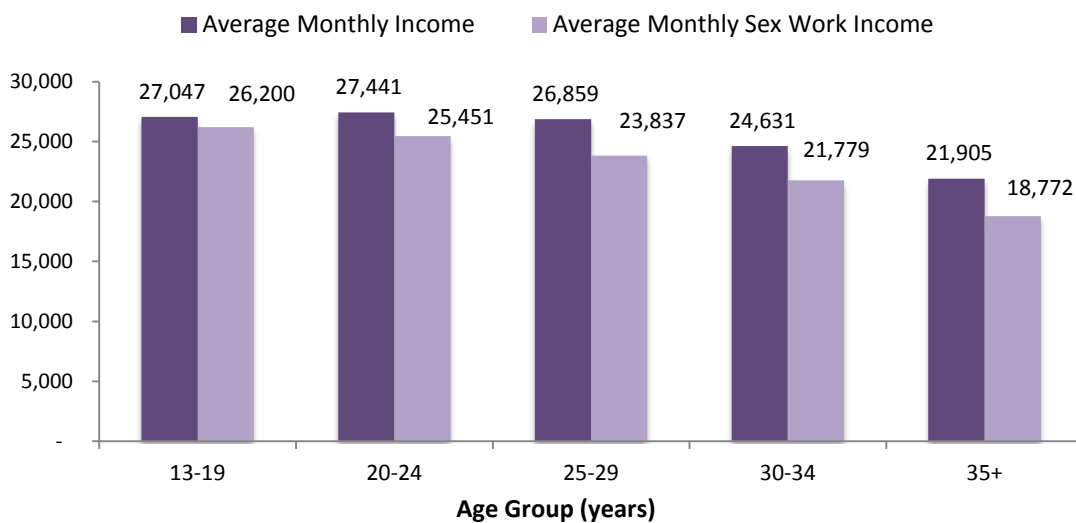
The large proportion of the FSWs (43.2%) reported being illiterate, with illiteracy being more common among FSWs in brothels (65.59%) and the least common among KK based FSWs (39.5%). Approximately five percent of FSWs had more than ten years of education. Illiteracy levels varied substantially by city, with very high illiteracy reported among FSWs in Larkana (81.9%), Mirpurkhas (71.4%) and Bannu (57.1%); illiteracy was lowest among FSWs in Bahawalpur (18%).

Fig 6.2b: Illiteracy among FSWs by city, Pakistan 2016-17



Only 33.4% of all FSWs had a source of income other than sex work, with Street based and home based FSWs being most likely to have other sources of income (37.2% and 36.6% respectively), while brothel-based FSWs were the least likely to have other sources of income (6%). The monthly median income overall reported among all FSWs was PKR 22,000 or US \$245. When limited to sex work alone, the reported monthly median income was PKR 20,000 or US \$210. The lowest median income was reported among home-based FSWs (PKR 18000), while the highest median was reported for Brothel Based FSWs (PKR 28,000). Income from sex work decreased with age with FSWs between 13 and 19 years reporting an average monthly income of PKR 26,200 or US \$288 versus those in over 35 years of age reporting an average monthly income of PKR 18,772 or US \$207.

Fig 6.2c: Average monthly income related to sex work by age, IBBS 2016-17



PKR 1.00= US \$0.0094

The average age of initiation of sex work reported by FSWs was 22.1 years, with the lowest age of initiation reported by Brothel based FSWs at 19.9 years (Figure 6.2a). Overall, the FSW reported being involved in sex work for 5.76 years.

FSWs who worked in brothels reported being involved in sex work for the longest duration (mean: 6.53 years) than other types of sex workers (Figure 6.2a). FSWs from Nawabshah and Larkana reported the youngest age at which they started sex work (mean age of 17.97 and 17.67, respectively). Among all the FSWs interviewed, the sex workers from Hyderabad and Bannu reported the longest duration of being involved in sex work, with an average of 9.25 and 9.05 years respectively, while those in Nawabshah and Larkana reported averages of 8.2 and 8.05 years respectively (Figure 6.2b).

Fig 6.2d: Average age of sex work initiation, duration & current age FSWs, Pakistan 2016-17

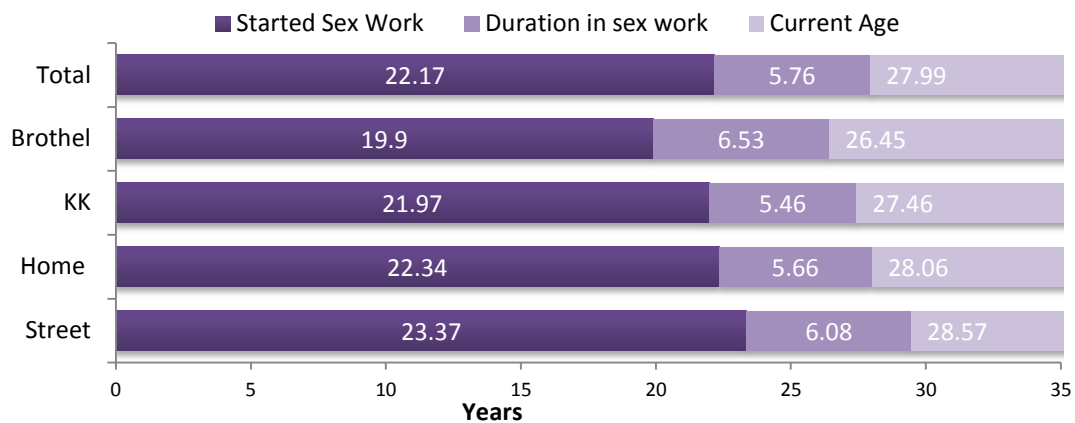
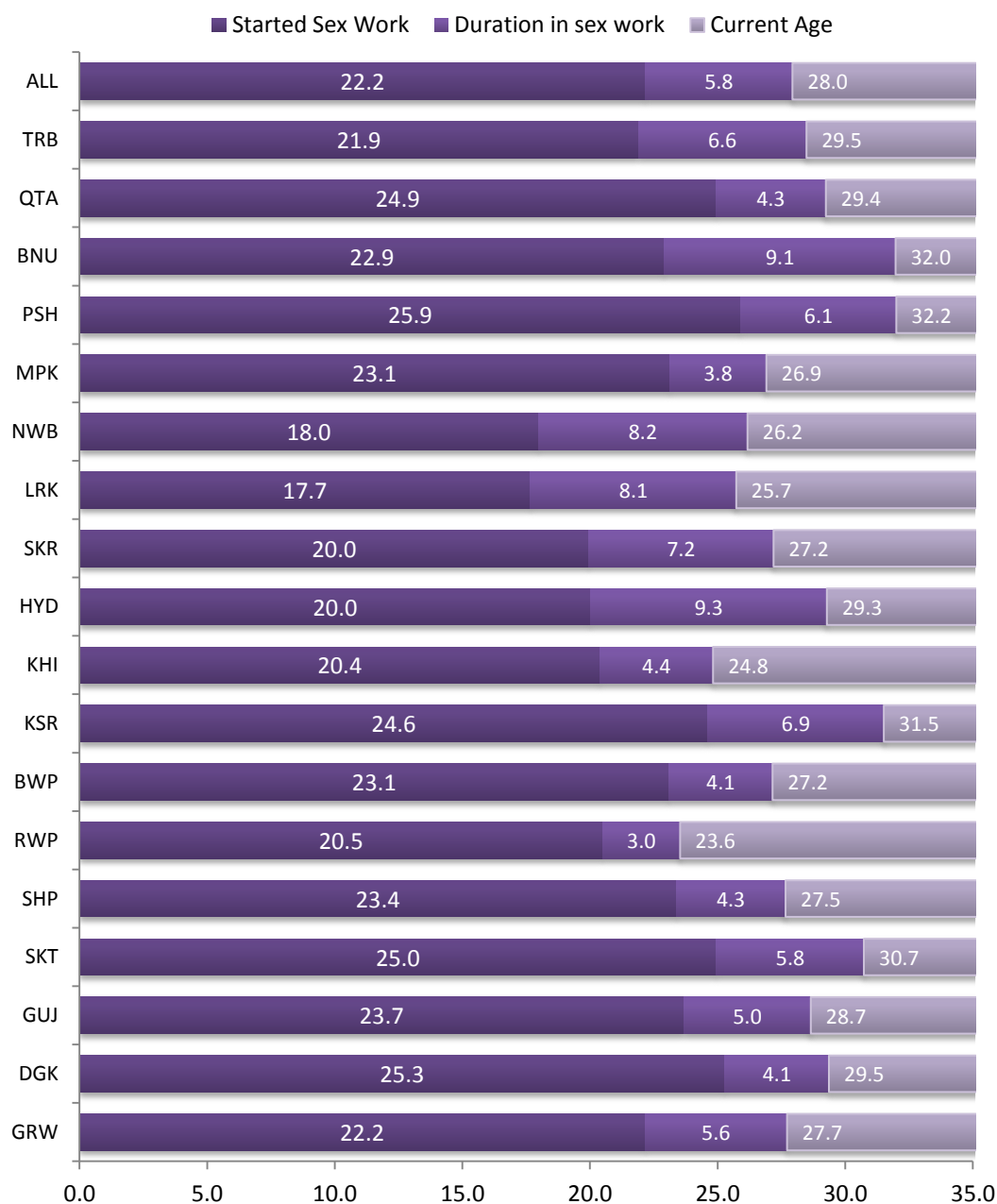


Fig 6.2e: Avg age of sex work initiation, duration & current age by city FSW, Pakistan 2016-17



6.3 Migration and Mobility

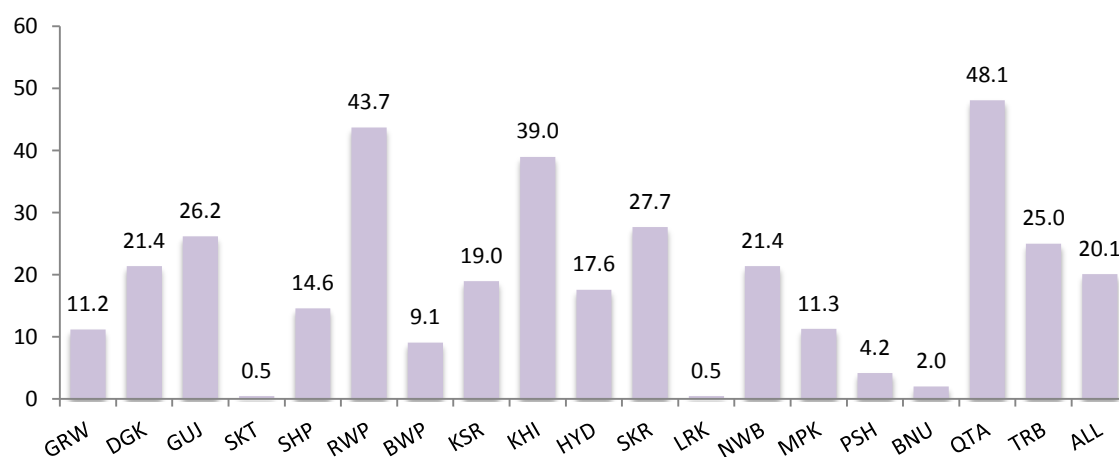
Approximately one-fifth (20.1%) of FSWs interviewed did not belong to the city of interview (Table 6.3a). Only 10.9% of the FSWs interviewed reported migrating to their current city for sex work, staying an average of 5.1 years in the city of interview. FSWs were asked whether they travelled to other cities in the past 12 months for sex work. Approximately 24% of the FSWs reported travelling to other cities in the past 12 months.

Table 6.3a: Mobility pattern of FSWs, IBBS 2016-17

Characteristics	Type of FSW				
	All FSWs (%)	Street (%)	Brothel (%)	Home (%)	Kothi Khana (%)
Migratory Pattern					
In Migration	20.1	21.3	23.1	17.2	22.7
Visiting specifically for sex work	10.9	11.4	13.2	8.3	13.8
Duration of stay in the city of interview (mean ± SD (median))	5.1 ± 5.8 (3.0)	6.7 ± 6.9 (5.0)	3.3 ± 2.7 (3.0)	5.2 ± 5.9 (3.0)	3.9 ± 4.1 (3.0)
Mobility Pattern (Out Migration)					
Traveled to other cities in the past 12 months for sex work	24.3	27.7	29.1	20.7	25.4
Most common cities traveled to					
Lahore	13.7	8.6	0.7	16.2	18.3
Karachi	8.2	7.9	10.2	9.0	7.2
Multan	6.2	3.0	4.4	7.4	8.8
Islamabad	4.9	5.1	1.5	4.4	5.9
Hyderabad	4.8	7.0	13.1	2.9	3.4
International Travel					
Ever Travelled abroad	4.4	4.8	11.0	3.6	4.4
Involved in sex work when abroad	4.0	4.2	9.9	3.4	4.0

City-wise variation among FSWs that migrated from other cities was noted. Quetta followed by Rawalpindi and Karachi were cities with the largest proportion of migrant FSWs (Figure 6.3a). Four percent of all FSWs reported travelling abroad with the highest proportion of travel abroad being reported by Brothel-based FSWs (11.0%) (Table 6.3a), while 4% of the FSWs reported being involved in sex work while living abroad.

Figure 6.3a: Proportion of migrants FSWs by city, IBBS 2016-17



6.4 Risk Behaviors and Practices

6.4.1 Sexual Partners

With the exception of FSWs who work in public places, most FSWs (36.0%) relied on a “madam” as their main source of clients. However, this reliance on “madams” was typology based. For example, only 16.6% of FSWs who were street-based relied primarily on a madam for clients, while 53.3% of Brothel based FSWs relied on Madams. Personal telephone contact, through Pimps, informal contacts (“roaming around”), and referrals from other clients were also important client sources for all types of FSWs (Table 6.4.1a).

Overall, FSWs reported that on days that they worked they had an average of 1.6 ±1.2 clients a day. An average of 34.2 (SD 35.6) clients per month were reported. The number of clients varied by typology; brothel based FSW reported the highest number of clients (2.4 clients per day and 58.7 clients/month) while home based FSWs reported the lowest daily average number of clients per day and per month (1.4 and 30.6 respectively). City-wise variations exist in the monthly client volumes, with Karachi reporting the highest client volume. Client volume also varied by age, with younger FSWs having the highest client volume (Figure 6.4.1b).

Table 6.4.1a: Selected sex work related practices and behaviors among FSWs, IBBS 2016-17

Practice / Behavior	All FSWs (%)	Street (%)	Brothel (%)	Home (%)	Kothikhana
Main source of clients*					
Aunty/Madam/Baji	35.8	16.6	53.3	38.9	49.7
Pimp	11.0	9.4	14.8	9.6	14.3
Personal telephone	35.3	44.1	24.1	35.8	26.6
Roaming around	11.1	24.9	0.5	5.1	5.5
Client referrals	6.1	4.5	5.4	9.2	3.3
No. of Clients					
Avg. # of clients / day	1.61 ± 1.18	1.71± 0.95	2.40 ± 1.97	1.47 ± 1.11	1.63 ± 1.31
Avg. # of clients / month	34.29 ±	34.20 ±	58.69 ± 63.40	30.63 ±	36.86 ±
Consistent condom use with					
Paid clients	38.1	34.3	31.9	45.4	32.3
Non Paid Clients	10.9	11.4	8.8	12.9	7.8
Condom use at last intercourse					
Vaginal sex	50.5	48.1	53.3	56.5	44.1
Anal sex	15.6	12.3	7.7	20.3	13.1
Oral sex	8.1	4.0	2.2	12.9	6.1

*Proportions does not add up to become 100% due to no response, don't know or missing data

Fig 6.4.1a: Average No of paying clients in past month for FSWs by city, Pakistan 2016-17

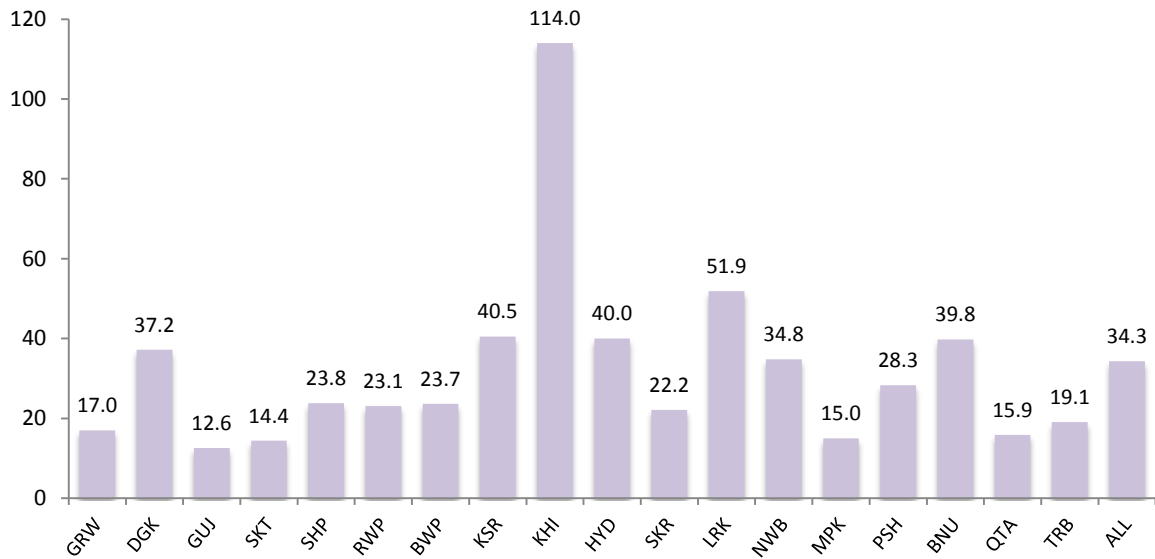
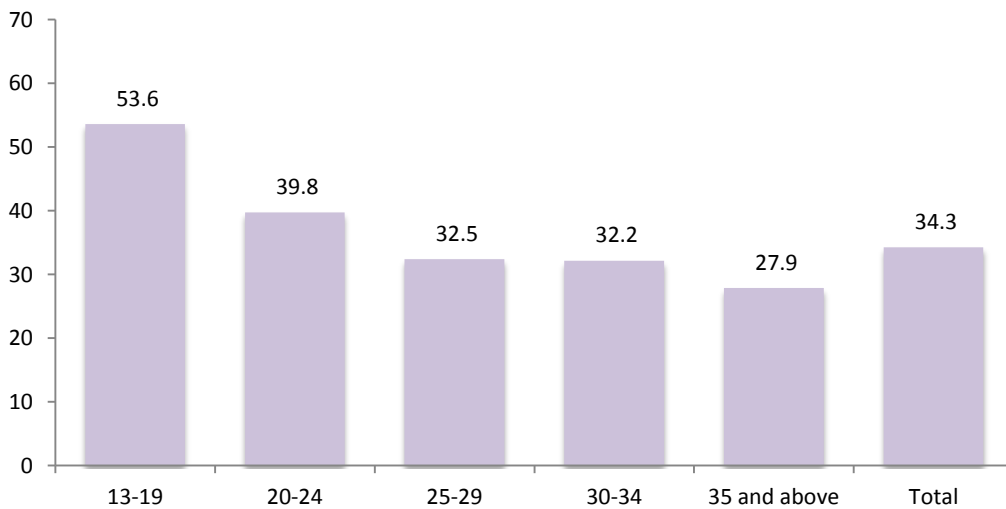


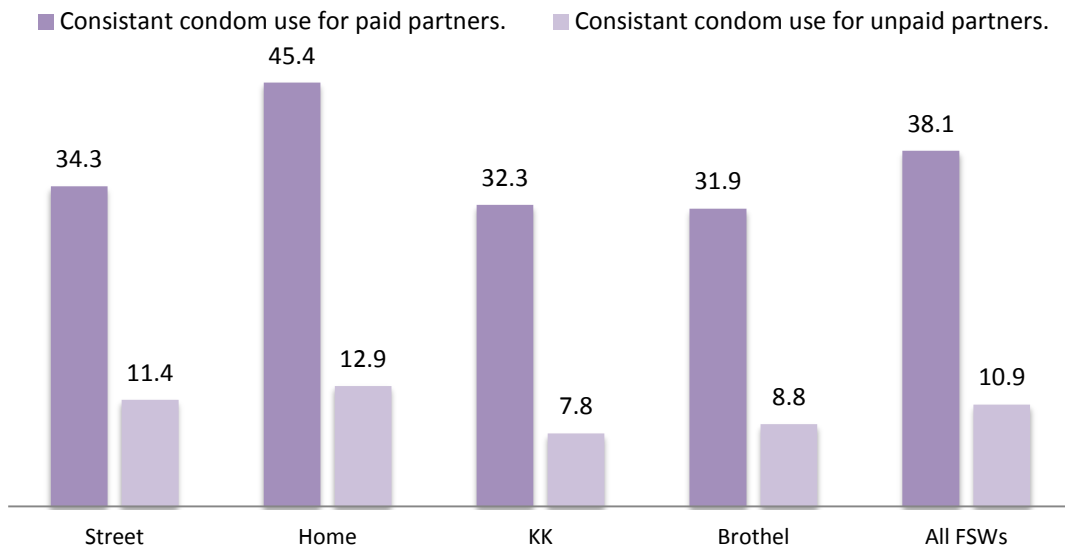
Fig 6.4.1b: Average No of paying clients in past month for FSWs by age, Pakistan 2016-17



6.4.2 Condom Use

Condom use by FSWs with their clients was generally low. Only 38% of FSWs reported that they always used a condom with their clients in the last month, and 10.9% reported consistent condom use with non-paying partners (Table 6.4.1a). Home-based FSWs reported substantially more condom use than the other types of sex workers, with 45% of them reporting consistent condom use with paid clients (Figure 6.4.2a). However, only 12.9% of home-based FSWs reported consistent condom use with non-paid sex partners in the past month.

Fig 6.4.2a: Consistent condom use by FSWs with clients in past month, Pakistan 2016-17



Overall, 15.6% of FSWs reported using a condom at their last paid anal sexual act. City wise variations show that 60.2% of the FSWs in Bannu followed by 42.9% of FSWs in Quetta were the highest reporting of condom use at last paid anal sex among all the cities interviewed. No FSWs in Rawalpindi reported using condoms at their last paid anal sex act. The corresponding proportions for condom use at last vaginal, anal and oral sex among all FSWs was 50.5%, 15.6% and 8.1%, respectively (Table 6.4.1a).

Fig 6.4.2b: Consistent condom use by FSWs with clients by city, Pakistan 2016-17

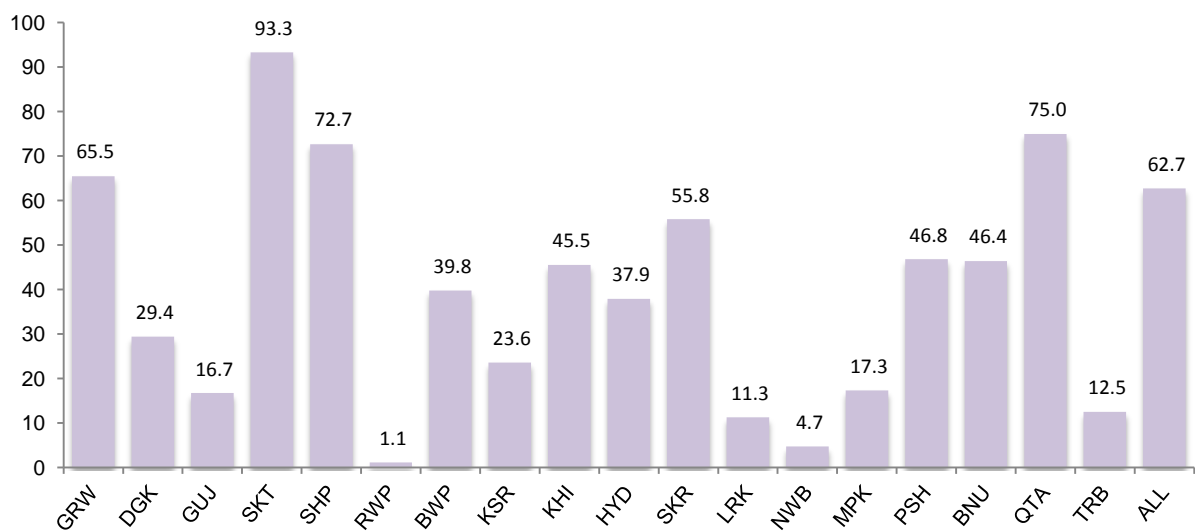


Fig 6.4.2c: Condom use of FSWs at last vaginal sex by City, Pakistan 2016-17

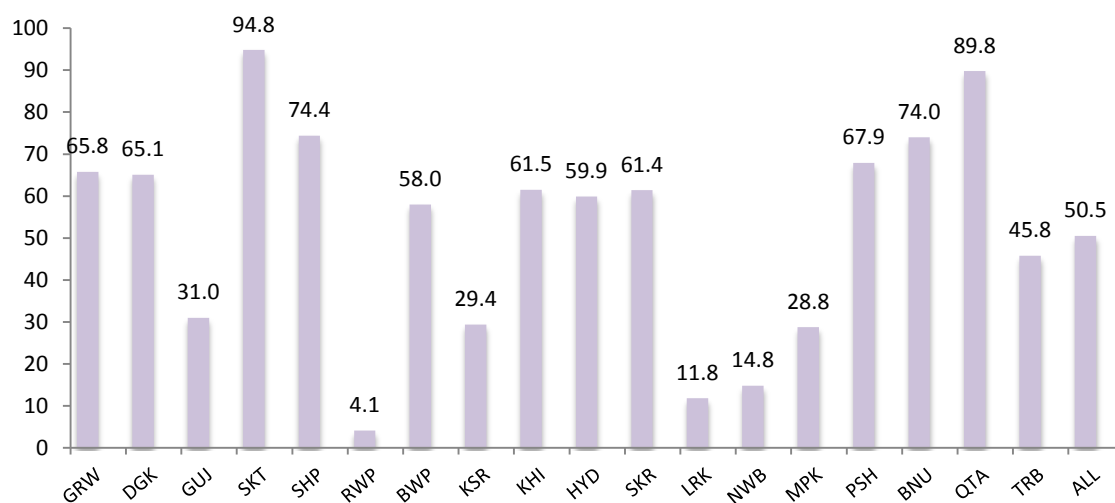


Figure 6.4.2b shows the overall proportions of consistent condom use for all FSWs by city. The highest proportion of FSWs reporting condom use during the last vaginal, anal and oral intercourse was among home-based FSWs. City wise variations were also noted in condom use at last vaginal, anal and oral sex (Figure 6.4.2c, d, e).

Fig 6.4.2d: Condom use by FSWs at last paid Anal sex by City, Pakistan 2016-17

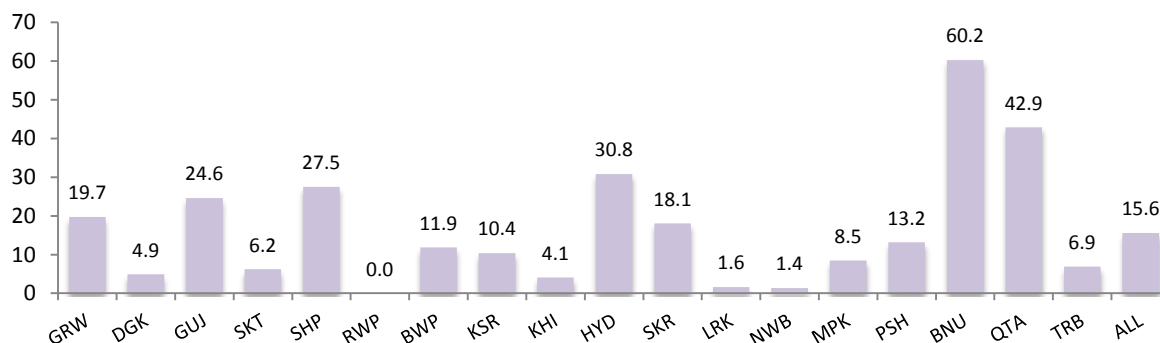


Fig 6.4.2e: Condom use by FSWs at last Oral sex by City, Pakistan 2016-17

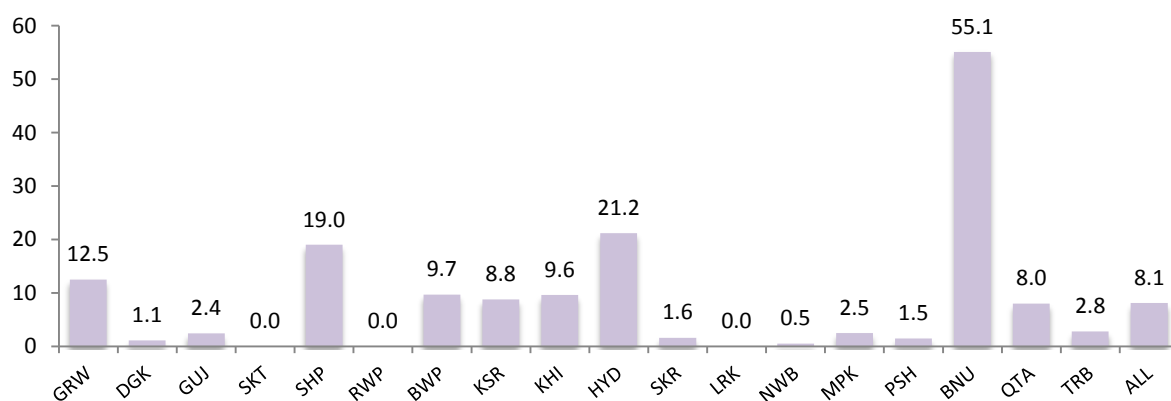
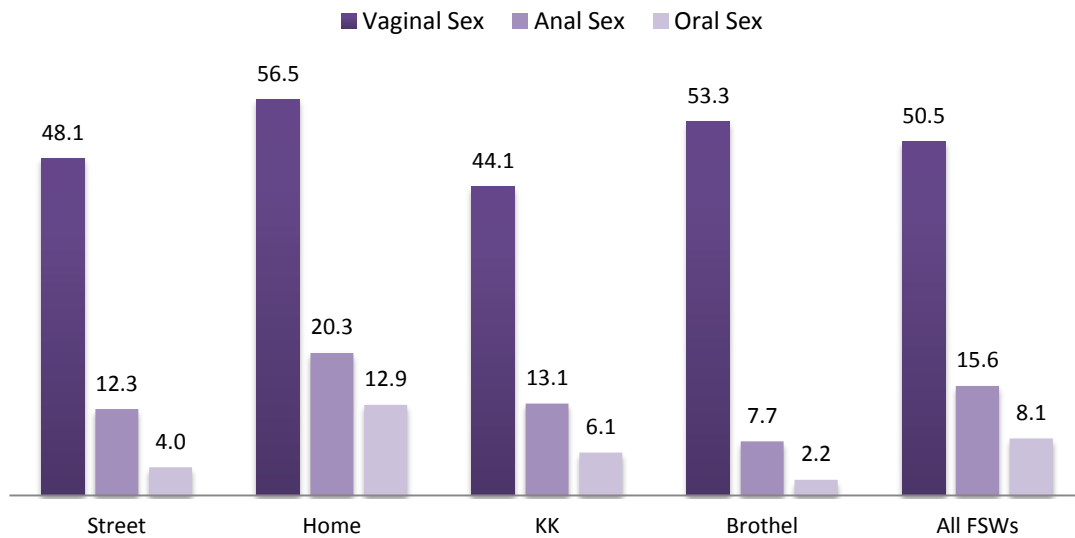
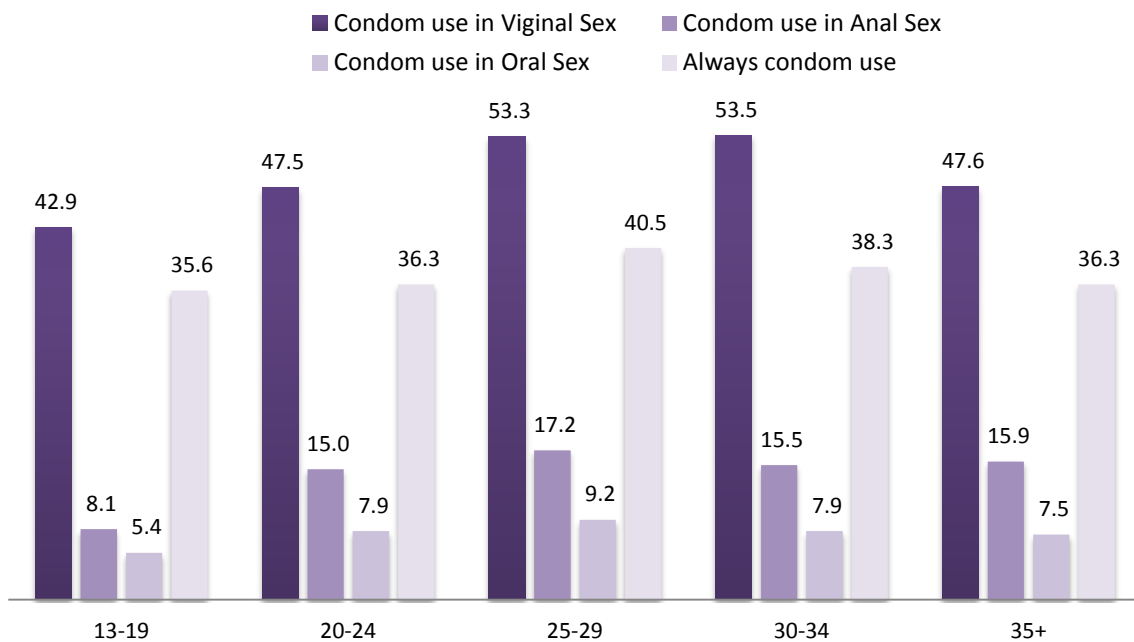


Fig 6.4.2f: Condom use by FSWs at last paid sex by Typology, Pakistan 2016-17



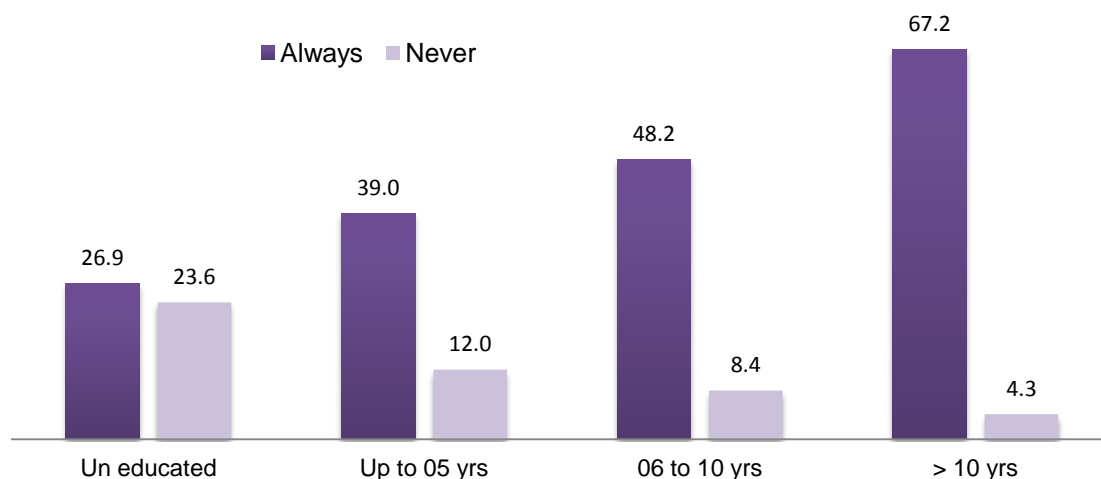
The pattern of condom use across different age groups showed variation. The proportion for condom use (vaginal, anal, oral and always condom use) was the lowest for the youngest age group compared to all age groups. FSWs that reported the highest proportion of always using condoms (40.5%) belonged to the 25-29 years age group, while the lowest proportion (35.6%) was reported by FSWs that were between 13-19 years (Figure 6.4.2g).

Fig 6.4.2g: Condom use of FSWs at last paid sexual intercourse by age, IBBS 2016-17



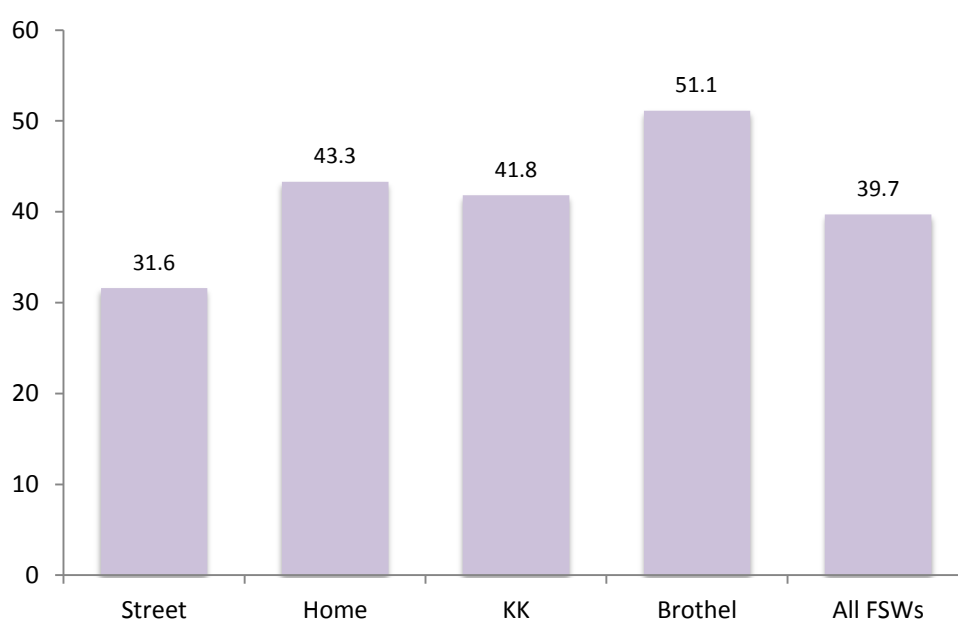
Further analyses that looked at the relationship between education and consistent condom use showed that the longer the number of years in school, the more consistent the condom use was (Figure 6.4.2h).

Fig 6.4.2h: Consistent condom use with clients in past month by education, Pakistan 2016-17



More than one third of FSWs (39.7%) interviewed reported carrying a condom at the time of the interview (Figure 6.4.2i). Consistent with self-reported condom use, brothel-based FSWs were much more likely to be carrying a condom (51.1%) than other types of FSWs.

Fig 6.4.2i: FSWs (%) carrying a condom at the time of interview by Typology, Pakistan 2016-17



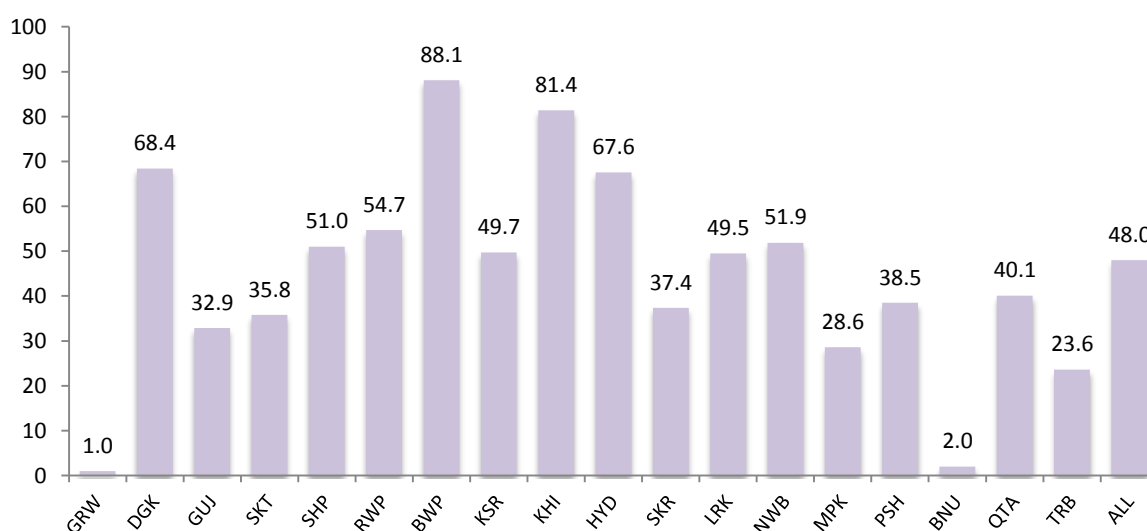
6.4.3 Other HIV Risk behaviors

Table 6.4.3a: More HIV risk behaviors among FSWs, IBBS 2016-17

Practice / Behavior	Types of FSW				
	All FSWs (%)	Street (%)	Brothel (%)	Home (%)	Kothikhana (%)
Alcohol/drug use during sex in past 12 months	48.0	42.4	61.5	45.6	56.0
Sex with injecting drug user in past 12 months	12.5	16.8	3.8	12.4	9.2
Injected drugs in the past 12 months	5.9	10.2	6.0	3.9	4.2

Overall, 48% of all FSWs reported drinking alcohol and/or taking drugs in the past six months. The use of alcohol in sexual encounters was more commonly reported among brothel-based FSWs (61.5%), followed by KK-based FSWs. City-wise, FSWs in Bahawalpur and Karachi reported the highest proportion of alcohol consumption in the context of sex in the past 12 months (81% in both cities) (Figure 6.4.3b). The lowest proportion of alcohol consumption was reported by FSWs in Gujrat and Bannu (1% and 2% respectively).

Fig 6.4.3b: Alcohol use while having sex in the past 12 months by city, Pakistan 2016-17



Overall 5.9% of FSWs reported injecting drugs in the past twelve months and 12.5% reported having sex with a PWID in the same time period (Table 6.4.3a, Figure 6.4.3c). Both injecting drugs

and having sex with a PWID were highest among street-based FSWs (10.2% and 16.8%, respectively). The highest proportion of FSWs reporting injecting drug use resided in Karachi (40.1%). While, Quetta (54.9%) followed by Sheikhupura (45.2%) (Figure 6.4.3d) topped the list of cities where FSWs reported having sex with a PWID.

Fig 6.4.3c: FSWs injecting drugs and having sex with PWID by Typology, Pakistan 2016-17

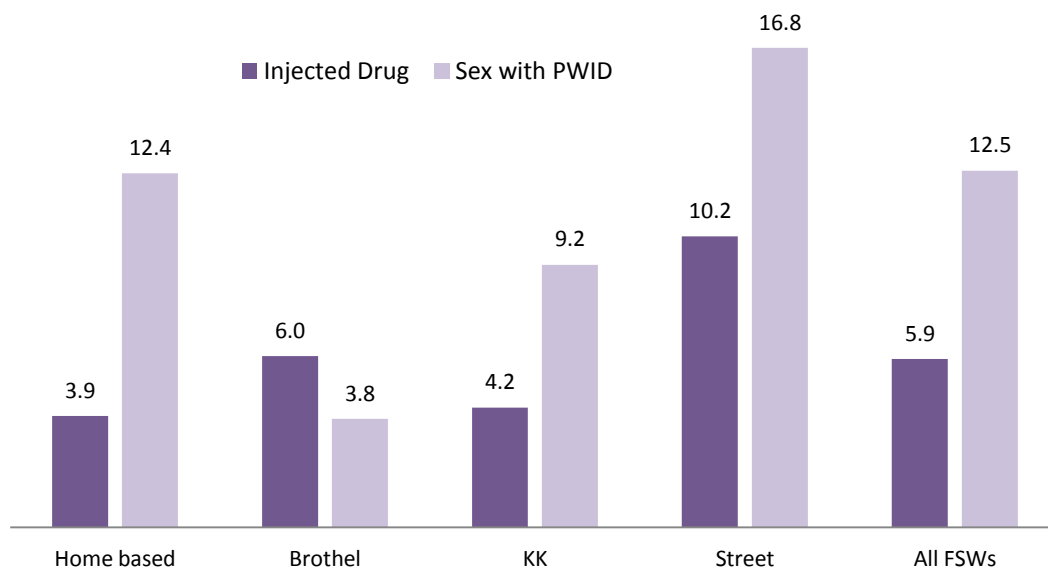
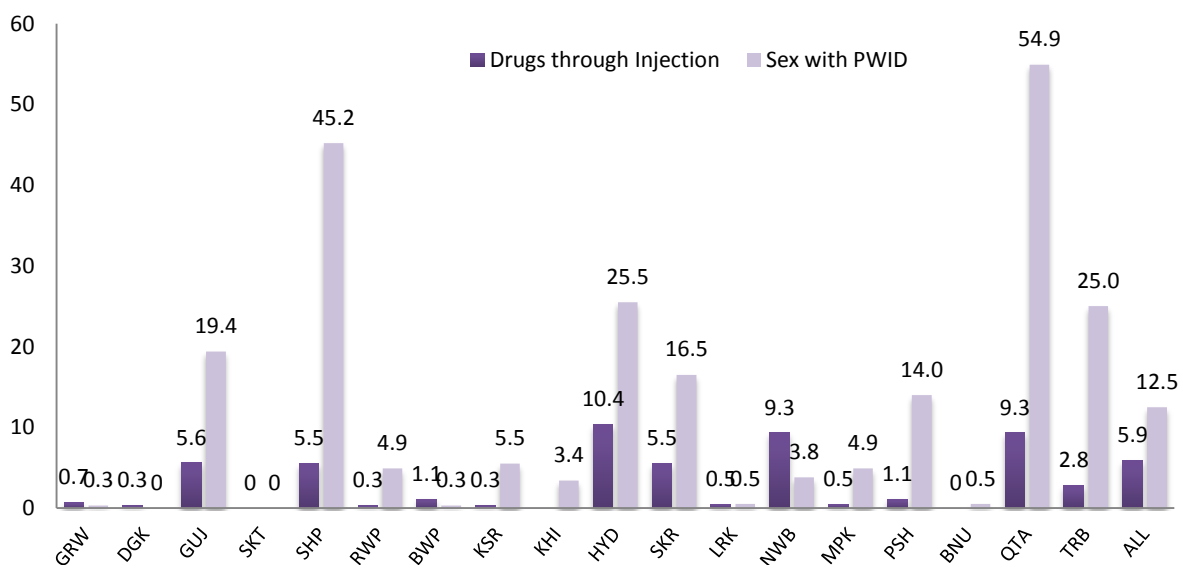


Fig 6.4.3d: FSWs injecting drugs and having sex with a PWID by City, Pakistan 2016-17⁸



⁸ Proportion of FSW reported injecting drug in Karachi needed further investigation

6.5 HIV and STI Related Knowledge

Overall, approximately 66.9% of FSWs had ever heard of HIV and/or AIDS, with brothel based sex workers reporting the highest level of awareness (76.4%, Table 6.5a). Approximately 41% believed that a healthy looking person could be living with HIV and/or AIDS, while half of the FSWs interviewed (50.8%) knew that HIV could be transmitted by sexual intercourse.

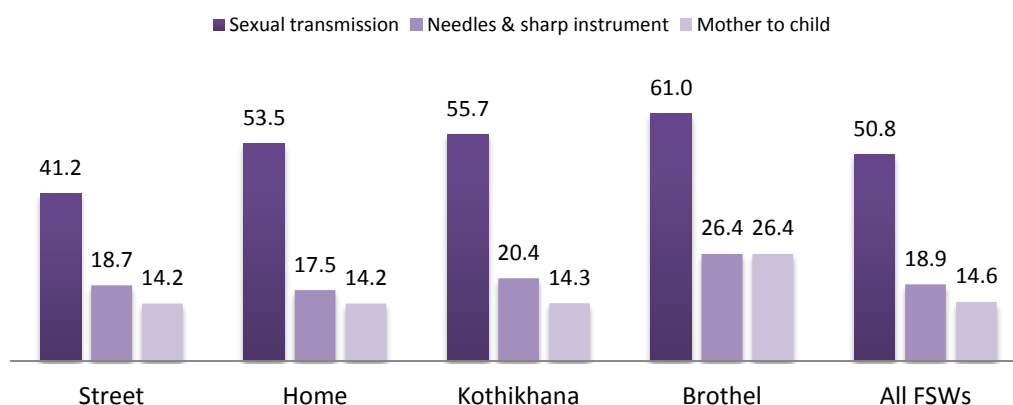
Table 6.5a: HIV and STI related knowledge among FSW, IBBS 2016-17

Knowledge area	Types of FSW				
	All (%)	Street (%)	Brothel (%)	Home (%)	Kothikhana (%)
Ever heard of HIV and/or AIDS	66.9	60.0	76.4	67.6	72.1
Healthy looking person can have HIV	40.8	31.9	37.4	43.8	46.4
HIV transmitted by sexual intercourse	50.8	41.2	61.0	53.5	55.7
HIV transmitted by instrument/needle	18.9	18.7	26.4	17.5	20.4
Transmitted from mother to child	14.6	14.2	26.4	14.2	14.3
Condoms can prevent HIV	46.8	42.6	54.4	49.0	47.1
Sexual abstinence to prevent HIV	22.9	16.7	36.3	22.3	28.7
Ever tested for HIV	17.2	15.8	39.6	14.0	20.6
Know where to receive HIV test	28.7	25.2	43.3	25.5	35.4
Self-perception of risk for HIV	22.8	21.7	42.3	21.7	23.3
Awareness of sexually transmitted infection (STIs)					
Awareness of STIs	63.8	52.2	78.6	65.7	71.7
Self-reported STI in past 12 months	29.8	24.3	42.9	30.0	33.8
Symptoms experienced-					
Urethral discharge	14.3	9.0	15.4	15.7	17.6
Scrotal swelling	10.3	10.4	14.3	10.4	9.7
Genital Ulcers	4.1	3.3	6.0	3.4	5.8
Genital Warts	10.2	9.1	15.9	9.5	11.9
Anal Discharge	2.6	3.1	6.0	2.2	2.4
Receive treatment for STI	28.1	22.7	42.3	27.7	32.7

Less than a fifth (18.9%) of the FSWs knew that HIV can be transmitted through injuries by sharp instruments or needles/syringes and only 14.6% knew about mother to child transmission of HIV

(Table 6.5). Overall, brothel-based FSWs had the highest levels of knowledge with respect to HIV transmission (Figure 6.5a).

Fig 6.5a: Knowledge of modes of HIV transmission in FSWs by typology, Pakistan 2016-17



Approximately 47% of FSWs were aware that condom use is a method to prevent HIV transmission, and 30% believed that sexual abstinence is a HIV prevention method. Only 17.2% had ever been tested for HIV and 28.7% knew where HIV testing services were offered. Only 22.8% of all FSWs believed that they were at risk for acquiring HIV infection. With respect to other STIs, 63.8% were aware of such infections, with 30% reported having had an STI in the past 12 months, and 28.1% reported being treated for the infection. Urethral discharge (14.3%), Scrotal swelling (10.3%) and Genital Warts (10.2%) were the main symptoms for STIs reported by FSWs.

6.6 Harassment, Discrimination and Violence

FSWs were inquired if they have faced questions concerning harassment, violence and discrimination. More than one third of all FSWs interviewed reported being discriminated against (35.6%) (Table 6.6a); KK based FSWs reporting the highest proportion of discrimination. More than half of all FSWs (52.4%) reported been physically injured i.e., being hit, choked or threatened with a knife or a weapon. About half of the FSWs interviewed reported being tricked and/or lied into having sex, even when they did not want to and being beaten and/or physically forced to have sex (48.9% and 48.6% respectively).

Table 6.6a: Harassment, Discrimination, Violence and other Risk Behaviors, Pakistan 2016-17

	All (%)	Street (%)	Brothel (%)	Home (%)	Kothikhana (%)
Being discriminated	35.6	29.6	29.1	34.3	44.5
Ever been treated unfairly or denied health care	6.6	9.3	6.0	4.6	6.7

Ever been physically hurt	52.4	47.8	42.3	54.9	55.0
Ever tricked/ lied into having sex without consent	48.9	48.4	39.6	49.9	49.0
Ever beaten or otherwise physically forced to have sex	49.1	47.0	40.7	49.8	51.2
Arrested in past 12 months	22.7	19.8	41.2	17.3	31.3

6.7 Program Exposure and Utilization

Only 29.9% of FSWs were aware of HIV prevention programs (SDPs) in their city and only 8.3% reported utilizing the service. Awareness of SDPs was higher among brothel-based FSWs (48.4%)

Table 6.7a: Knowledge and utilization of HIV prevention program among FSWs, IBBS 2016-17

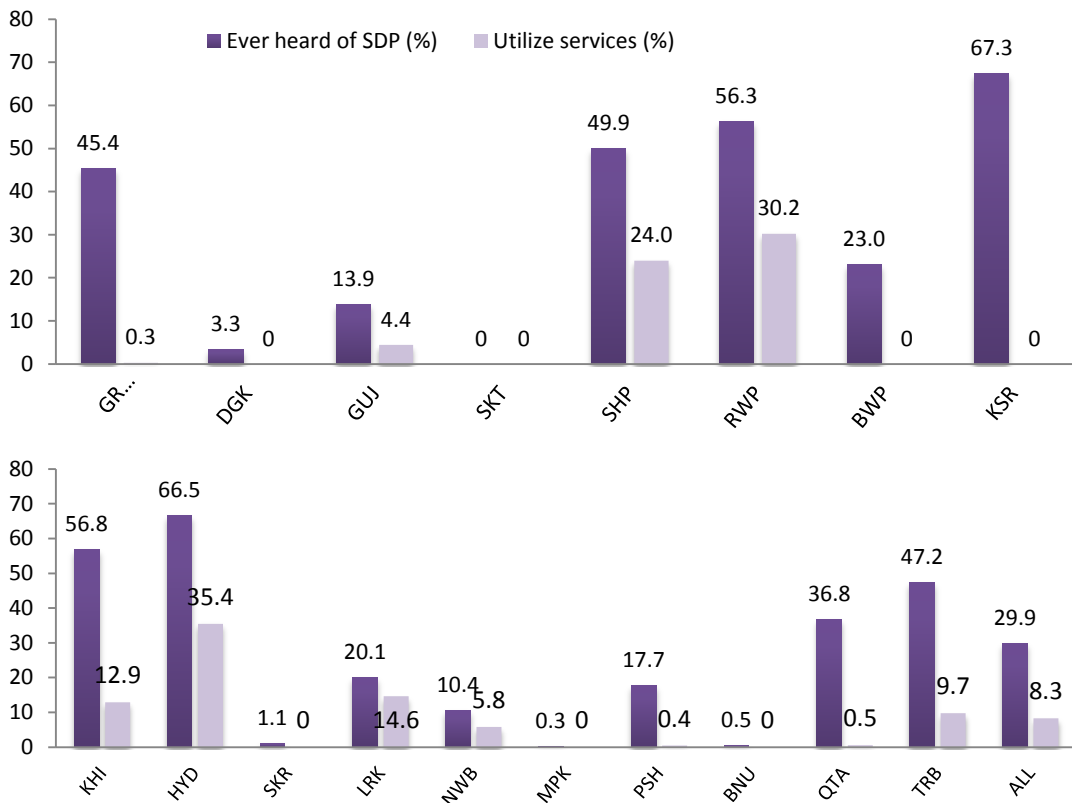
Knowledge Area	All (%)	Street (%)	Brothel (%)	Home (%)	Kothikhana (%)
Ever heard of HIV programs	29.9	28.3	48.4	27.4	33.1
Services utilized in past 12 months	8.3	5.5	30.2	8.9	8.0
Given free Condoms (past yr)*	11.7	8.5	34.6	10.7	14.1

* *Outreach worker/Peer Educator/SDP workers*

compared to the other FSW typologies (Table 6.7a). Knowledge of and participation in programs was higher among brothel based FSWs than any other typology – approximately 30% of brothel-based FSWs reported utilizing the HIV prevention services. Service utilization by street based FSWs was the lowest at 5.5%. Overall, only 11.7% of all FSWs reported receiving free condoms in the past 12 months from an outreach worker, a peer educator or a SDP worker.

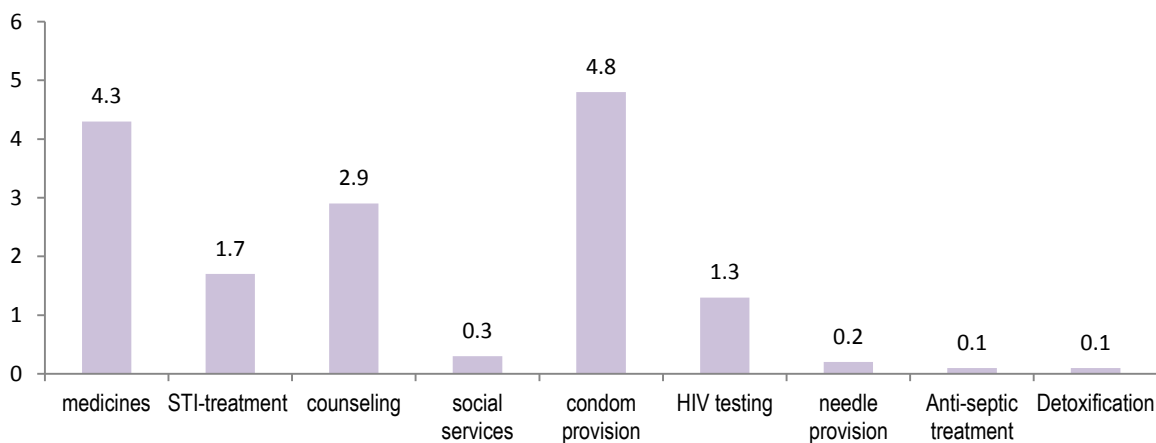
Awareness and utilization of SDPs among FSWs was further analyzed across the different cities. Variation in the proportion of FSWs reporting ever hearing of SDPs across cities was noted. Kasur, Hyderabad, Karachi and Rawalpindi reported the highest proportions for knowledge about the presence of SDPs. City wise distribution of services utilization showed that FSWs in Hyderabad, Rawalpindi and Sheikhpura reported the highest proportions.

Fig 6.7a: Knowledge & Utilization of HIV prevention programs by cities, Pakistan 2016-17



Further analysis of various services availed by FSWs in the past twelve months showed that obtaining condoms from the SDP was the most utilized service across all cities followed by requests for medications. However, the proportions reported for service utilization were extremely low.

Fig 6.7b: Services utilized at SDPs in past 12 months by FSWs, Pakistan 2016-17



Service utilization by city has been reported in Table 6.7b. FSWs interviewed in most of the cities did not report utilizing any of the services. Only 21.8% of FSWs in Sheikhpura reported utilizing SDPs for obtaining condoms, while 28% of FSWs in Rawalpindi reported using SDPs for obtaining

medicines. FSWs from Hyderabad reported using the SDP for counselling (25.85) and obtaining condoms (23.8%).

Table 6.7b Types of services used at the SDPs by FSWs by city, Pakistan 2016-17

Services	PHC	STI Rx	Counsel	Social services	Condoms	HIV test	Needle provision	Antisept services	Detox
GRW	0	0	0	0	0	0	0	0	0
DGK	0	0	0	0	0	0	0	0	0
GUJ	0.4	2.4	1.2	0.4	2.4	0	0.4	0	0
SKT	0	0	0	0	0	0	0	0	0
SHP	16.3	5	0.8	0.3	21.8	0.3	0.3	0.3	0.3
RWP	28	3	2.5	0.5	1.4	0.5	0.5	0.5	0.5
BWP	0	0	0	0	0	0	0	0	0
KSR	0	0	0	0	0	0	0	0	0
KHI	2.3	0.3	4.7	0	8.3	4.9	0.8	0.3	0
HYD	12.6	14.6	25.8	0.5	23.4	3.6	0.5	0.3	0.5
SKR	0	0	0	0	0	0	0	0	0
LRK	1.1	1.1	9.1	3	11.5	9.6	0	0.3	0
NWB	4.7	1.4	0.8	0.3	4.7	0	0.3	0	0
MPK	0	0	0	0	0	0	0	0	0
PSH	0	0	0	0	0	0.4	0	0	0
BNU	0	0	0	0	0	0	0	0	0
QTA	0	0	0.5	0	0.3	0	0	0	0
TRB	4.2	0	0	0	8.3	0	4.2	1.4	0

6.8 HIV Prevalence

The prevalence of HIV among FSWs was lowest among all key populations. However, of concern is the higher prevalence of HIV in this group in comparison to the previous surveillance rounds. A total of 118 FSWs tested HIV-positive, with an overall prevalence of 2.2% (95% CI: 2.1, 2.3) [un-weighted HIV prevalence 2.1% (95% CI: 1.8, 2.5)]. Sukkur reported the highest prevalence of HIV among FSWs (8.8%), followed by Larkana and Mirpurkhas (4.1% each), Nawabshah (3.8%) and Peshawar (3.0%). No HIV positive cases were reported in Turbat, Quetta, Sialkot, Bahawalpur and Kasur.

Table 6.8a: HIV prevalence among FSWs by city (weighted), Pakistan 2016-17

	Tested	Positive	Prevalence %	Prevalence 95% CI
Gujranwala	304	2	0.7	0.2,2.4
DGK	364	3	0.8	0.3,2.4
Gujrat	250	1	0.4	0.1,2.2
Sialkot	193	0	0.0	0

Sheikhupura	363	6	1.7	1.1,4.9
Rawalpindi	364	1	0.3	0.1,1.5
Bahawalpur	351	0	0.0	0
Kasur	364	0	0.0	0
Karachi	387	10	2.6	1.4,4.7
Hyderabad	364	8	2.2	1.1,4.3
Sukkur	364	32	8.8	6.3,12.2
Larkana	364	15	4.1	2.5,6.7
Nawabshah	364	14	3.8	2.3,6.4
Mirpurkhas	364	15	4.1	2.5,6.7
Peshawar	265	8	3.0	1.5,5.8
Bannu	196	3	1.5	1,4.4
Quetta	364	0	0.0	0
Turbat	72	0	0.0	0

7. MEN WHO HAVE SEX WITH MEN (MSM)

Unlike previous surveillance rounds where only male sex workers were included, this round included ALL men who have sex with men, which included male sex workers as well. However before we embark on the results of this populations it needs to be mentioned that the MSM sample is under represented for males who use internet or mobile phone apps to find sexual partners, and the sample is skewed towards MSM who operate on geo-spots and predominately includes MSWs. A total of 6773 MSMs were interviewed in 22 cities across Pakistan. MSM were divided into two typologies: Male Sex Workers (MSW) and Non-SW MSM. Overall, 5742 MSWs and 1031 Non-SW MSMs were interviewed. MSW were interviewed from all 22 cities, while Non-SW MSMs were interviewed from all cities with the exception of Multan.

KEY FINDINGS

- *The previous IBBS rounds focused on Male sex workers (MSW), while for this surveillance round, the criterion was changed to include all men who have sex with men (MSM). MSM were divided into two typologies: Male Sex Workers (MSW) and Non-SW MSM (Non-SW MSM).*
- *The predominant proportion of MSMs interviewed identified themselves as gay/homosexual men (68.7%). More than one fourth (27.8%) of all MSMs interviewed identified themselves as bisexual men. A larger proportion of Non-SW MSM identified themselves as bisexual men comparative to MSWs (30.9% vs. 27.3% respectively).*
- *The average age of all MSMs interviewed was 23.9 ± 6.0 (median = 23). Approximately 90% of MSMs were less than 30 years of age, with the highest proportion (38.2%) between 20 and 24 years of age. Approximately 25% of the Non-SW MSMs were above the age of 30, whereas only 13% of MSWs were older than the age of 30 yrs.*
- *Three fourths of all MSMs interviewed reported being unmarried (74.4%); only 22.7% reported being currently married. By typology, a greater proportion of MSWs reported being unmarried comparative to Non-SW MSMs, with 37.1% of the latter reportedly being married comparative to 20% of MSWs.*
- *On an average, MSWs started sex work at an average age of 16.7 years and had been involved in sex work for approximately 6.9 years.*
- *The median total monthly income from all sources was approximately PKR 16,000 or US \$150.4. MSWs reported earning a median of PKR 8000 or US \$ 75.2 from sex work.*
- *Only 10.2% of all MSM migrated into the city where they were interviewed.*
- *Approximately 40% of MSWs solicited clients by roaming around in public places like bus stops and markets, which formed the largest mechanism of getting clients. A large proportion (38.6%) also reported using cell phones to access clients. In addition, referral through old clients was also reported by 13.8% of MSWs.*

- *On an average, the MSWs interviewed reported to have 1.7 sex partners per day, the average number in a month was reported to be 24.0 ± 16.3 . In addition to paid clients, approximately 59.6% of MSWs reported being involved in unpaid sex, having an average of 2.2 ± 2.4 non-paid partners in the past month.*
- *Only 8.6% of the MSWs reported regular condom use with paid clients; the proportion was even lower (4.1%) with non-paid sex partners.)*
- *MSMs (Non-SW) reported having an average of 4.8 ± 4.6 non-paying sex partners during the past month. Consistent condom use (non-paid partner) was reported at only 8.3%.*
- *Overall, 4.2% of all MSM interviewed reported injecting drugs in the past twelve months, while 4% of MSMs reported having had sex with an injecting drug user (PWID) in the past twelve months. Among Non-SW MSMs, only 3.2% reported having sex with a PWID in the past year, while 2.8% reported injecting drugs in the same time period.*
- *Approximately two thirds of MSMs (66.0%) had heard of HIV and/or AIDS. Knowledge about HIV/AIDS was higher among MSWs comparative to Non-SW MSMs (69.5% vs. 46.4).*
- *Knowledge of sexual transmission as a mode of HIV transmission was reported by 53.4% of all MSMs [MSW:56.4%, Non-SW MSM; 36.5%], whereas only 32.9% [MSW:35.1%, Non-SW MSM; 20.9%] knew that HIV could be transmitted through sharp instruments/syringe.*
- *Regarding modes of HIV prevention, 45.8% of all MSMs [MSW:48.4%, Non-SW MSM; 31.1%] knew condoms could prevent HIV transmission, and 29.9% believed that sexual abstinence could prevent HIV transmission [MSW:31.8%, Non-SW MSM; 19.2%]. Only 12.3% of all MSM [MSW: 13.3%, Non-SW MSM; 6.5%] knew that the use of clean needles/syringes could prevent HIV transmission.*
- *Approximately a quarter of all the MSMs interviewed (26.7%) reported ever testing for HIV and approximately one-fifth (21%) felt they were at risk of acquiring HIV infection. More than twice the proportion of MSWs reported ever getting tested for HIV comparative to Non-SW MSMs (29.3% vs. 12.6%).*
- *More than half of the MSMs interviewed reported being aware of other STIs (56.5%) and 18.4% reported being diagnosed with an STI in the past 12 months for which 17.8 received a treatment.*
- *Only 34.9% of MSMs were aware of a HIV prevention program (SDP) in their city, with a greater proportion of MSWs (38.6%) reporting awareness about SDPs comparative to Non-SW MSMs (14.2%). Service utilization was reported by 13.3% of MSMs the predominant proportion of whom were MSWs. Analysis showed that getting condoms from the SDP was the most utilized service (10.4%), followed by counselling (8.1%) and getting tested for HIV (8.0%).*
- *One third of all the MSM reported being discriminated against. Twice as many MSWs reported discrimination comparative to Non-SW MSMs (34.1% vs. 15.9%). More than*

half all MSM (51.9%) [MSW: 55.4%, Non-SW MSM; 32.6%] reported ever being physically hurt or beaten or otherwise physically forced to have sex.

- The overall weighted prevalence among all MSM was 5.4% (95% CI: 5.2, 5.6) [un-weighted prevalence 3.7% (95% CI: 3.3, 4.2)]. The weighted prevalence among MSW was 5.6% (95% CI: 5.4, 5.8) [un-weighted prevalence 3.7% (95% CI: 3.2, 4.2)]. The weighted prevalence among Non-SW MSM was 3.4% (95% CI: 2.9, 5.3) [un-weighted prevalence 3.4% (95% CI: 2.9, 5.3)].

7.1 Estimated Numbers

In all cities mapped, this study was able to identify an average number of 46,264 MSM at 8,606 geographical spots. This number included a small proportion of MSWs as well. Details are provided in the mapping report.

Table 7.1a: Estimated number of MSM operating through geo-spots in Pakistan, 2016-17

City	No of spots	Min estimate	Max Estimate	Avg. Estimate
Bahawalpur	455	1,973	2,785	2,379
Bannu	113	432	556	494
DG Khan	100	258	438	348
Faisalabad	497	1,480	2,552	2,016
Gujranwala	63	260	389	325
Gujrat	13	92	130	111
Hyderabad	172	1,565	1,994	1,779
Karachi	3,495	15,812	20,910	18,361
Kasur	147	519	707	613
Lahore	834	4,696	6,246	5,471
Larkana	236	1,369	1,855	1,612
Mirpurkhas	36	273	327	300
Multan	841	3,475	5,055	4,265
Nawabshah	98	620	803	712
Peshawar	126	319	459	389
Quetta	243	1,343	1,698	1,521
Rawalpindi	404	1,090	1,648	1,369
Sargodha	371	1,721	2,188	1,954
Sheikhupura	72	581	756	668
Sialkot	46	179	236	207
Sukkur	212	936	1,205	1,070

Turbat	32	280	320	300
Total	8,606	39,273	53,257	46,264

7.2 Socio-demographic Characteristics

Table 7.2a provides information on the key socio-demographic characteristics of MSMs. The predominant proportion of MSMs interviewed identified themselves as gay/homosexual (68.7%) men. More than one fourth of the MSMs identified themselves as bisexual men. While a greater proportion of MSWs identified themselves as gay/homosexual men, a larger proportion of Non-SW MSM identified as being bisexual men.

The mean age of all MSMs interviewed was 23.9 ± 6.0 (median = 23). Approximately 90% of MSMs were less than 30 years of age, with the highest proportion (38.2%) between 20 and 24 years of age. Approximately 25% of the Non-SW MSM were above the age of 30, whereas only 13% of MSWs were older than the age of 30 yrs.

Table 7.2a: Socio-demographic characteristics of MSMs, IBBS 2016-17

Characteristics	All MSMs (%)	MSW (%)	non-SW MSM %
Gender			
▪ Straight/Heterosexual	3.4	3.0	5.8
▪ Gay/Homosexual	68.7	69.7	63.1
▪ Bisexual	27.8	27.3	30.9
Current age			
▪ 13-19 years	22.2	23.0	18.0
▪ 20-24 years	38.2	39.5	31.2
▪ 25-29 years	24.6	24.6	24.5
▪ 30-34 years	9.1	8.3	13.5
▪ 35 + years	5.9	4.7	12.7
Mean age \pm SD (median) years	23.9 \pm 6.0 (23)	23.6 \pm 5.3 (23)	23.5 \pm 6.7 (25)
Marital status			
▪ Unmarried	74.4	76.9	60.0
▪ Currently married	22.7	20.1	37.1
▪ Separated / divorced	2.5	2.5	2.3
▪ Widowed	0.4	0.4	0.6
Number of Children***			
▪ None	15.7	16.7	12.4
▪ 1-2 children	53.5	55.2	47.8
▪ 3 or 4	23.7	21.5	30.8

▪ > 5	4.2	3.5	6.6
Year of formal education***			
▪ Illiterate	26.3	25.2	32.2
▪ Up to 05 years	19.4	19.5	18.5
▪ 06 to 10 years	41.8	42.8	36.5
▪ > 10 years	12.2	12.1	12.4
Living arrangement			
Place of living			
▪ Lives at home	87.5	86.6	92.1
▪ Quarter/Flats	6.7	7.3	3.2
▪ Street/Open place/Shrine	1.2	2.1	0.8
▪ Hotel/Hostel/Guesthouse	2.5	2.5	2.4
▪ Others*	1.9	2.1	1.0
Living with			
▪ Alone	3.1	3.0	3.7
▪ Family/Spouse/Relatives	85.7	84.7	91.8
▪ Friends	8.6	9.5	3.7
▪ other MSMs	2.4	2.7	0.7
Other sources** of income	90.4	88.8	NA
Income (PKR)			
▪ Median Monthly Income (From all resources)	16,000 (USD 150.4)	17,000 (USD159.8)	15,000 (USD 141.0)
▪ Median Monthly Income (From sex work)	8,000 (USD 75.2)	8,000 (USD 75.2)	NA

*include Dera, Workplace, etc.

** other source on income means other than being a sex worker

*** proportions do not add up to 100% because of no response or missing data

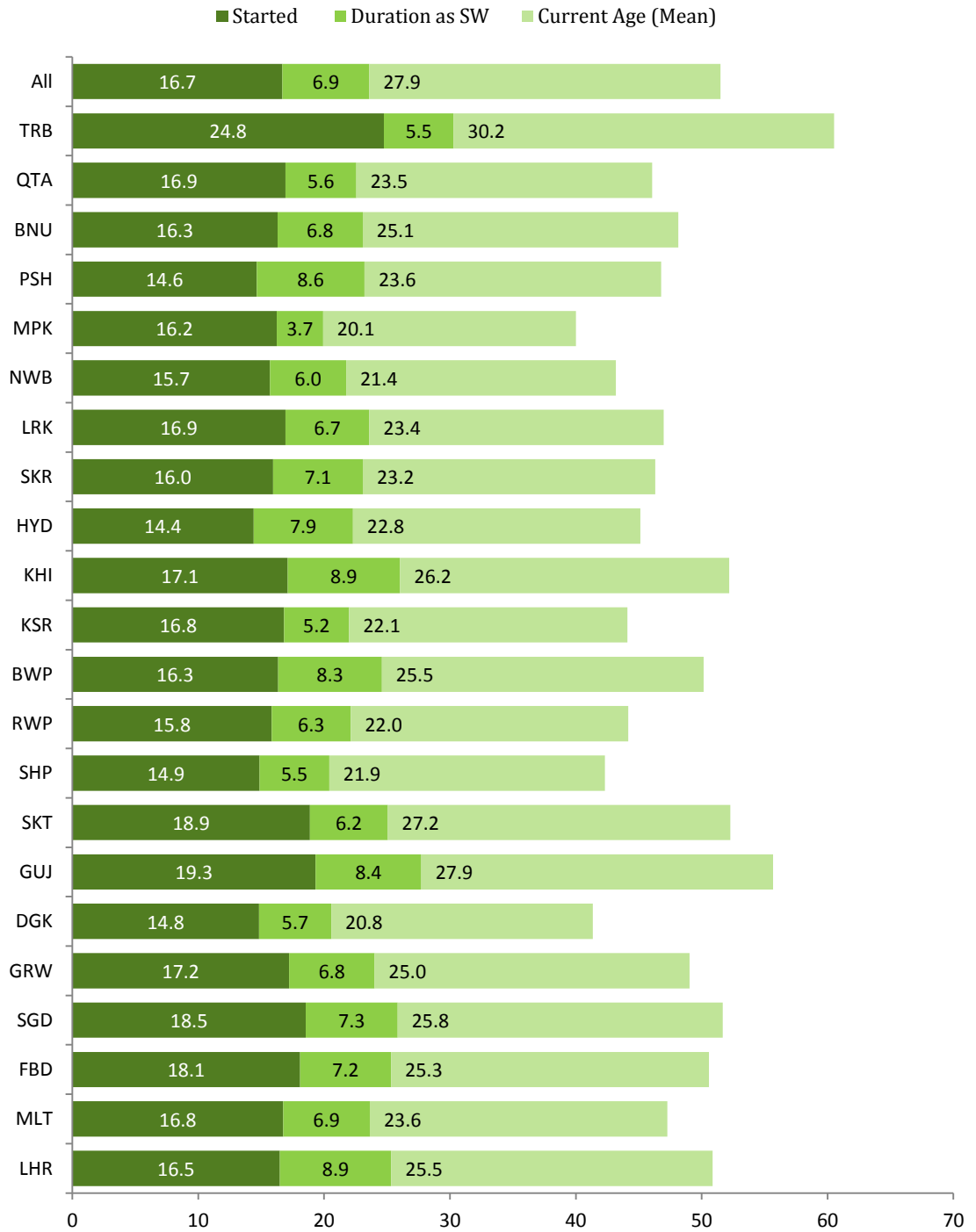
Mean monthly income \pm SD (from all resources): 18,167 \pm 9,644 PKR (197 \pm 82 USD)

Mean monthly income \pm SD (from sex work): 9,555 \pm 6,427 PKR (107 \pm 66 USD)

PKR 1.00 = US \$ 0.0094 <https://www.oanda.com/currency/converter/>

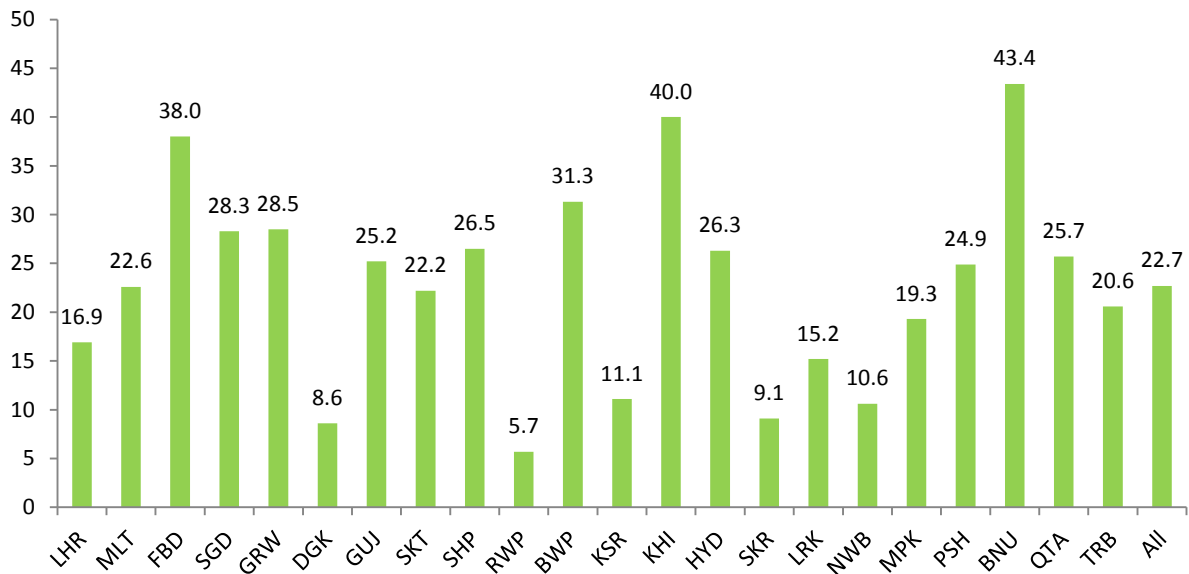
MSWs were asked about the age at which they started sex work and the duration they have been involved in sex work. MSWs in Mirpurkhas and D G Khan were the youngest (mean = 20.1 and 20.8 years respectively) whereas those in Turbat were oldest (mean = 30.2 years) (Figure 7.2a). On an average, MSWs started sex work at the mean age of 16.7 years and had been involved in sex work for approximately 6.9 years. The age of initiation into sex work was lowest in Hyderabad and Peshawar (mean = 14.4 and 14.6 years respectively) while those in Turbat began sex work at a relatively older age (mean = 24.8 years). MSWs in Karachi and Lahore were involved in sex work for the longest period (mean = 8.9 years each) where as those in Mirpurkhas were in sex work for the shortest period (mean 3.7 years).

Fig 7.2a: Average age of initiation, duration in sex work & current age of MSWs by cities, Pakistan 2016-17



Three fourths of all the MSMs interviewed reported being unmarried (74.4%); only 22.7% reported being currently married. By typology, a greater proportion of MSWs reported being unmarried comparative to Non-SW MSMs, with 37.1% of the latter reportedly being married comparative to 20% of MSWs.

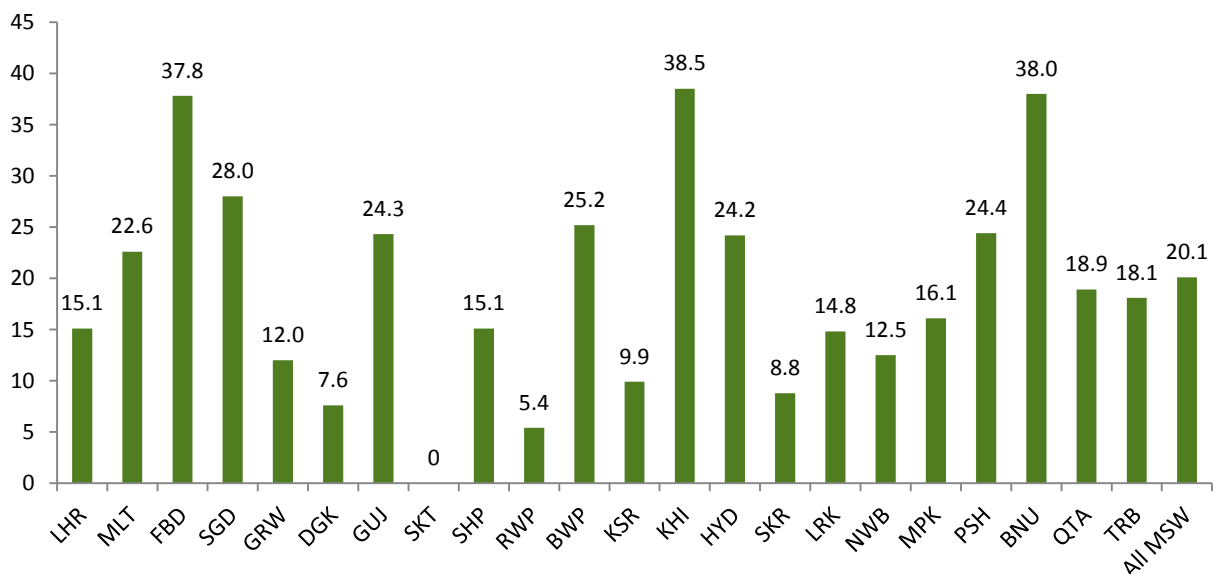
Fig 7.2b: Proportion of currently married MSMs (all) by cities, Pakistan 2016-17



Figures 7.2 b, 7.2c & 7.2d show city wise distribution of MSM and its typologies of being currently married. MSMs from Bannu (43.4%) and Hyderabad (40%) had the greatest proportion reporting being currently married, while those from Rawalpindi (5.7%) and DG Khan (8.6%) had the lowest proportions reported for currently married (figure 5.2b).

Among MSWs, the highest proportions for currently married were reported from Hyderabad (38.5%), Bannu (38%) and Faisalabad (37.8%, figure 7.2c).

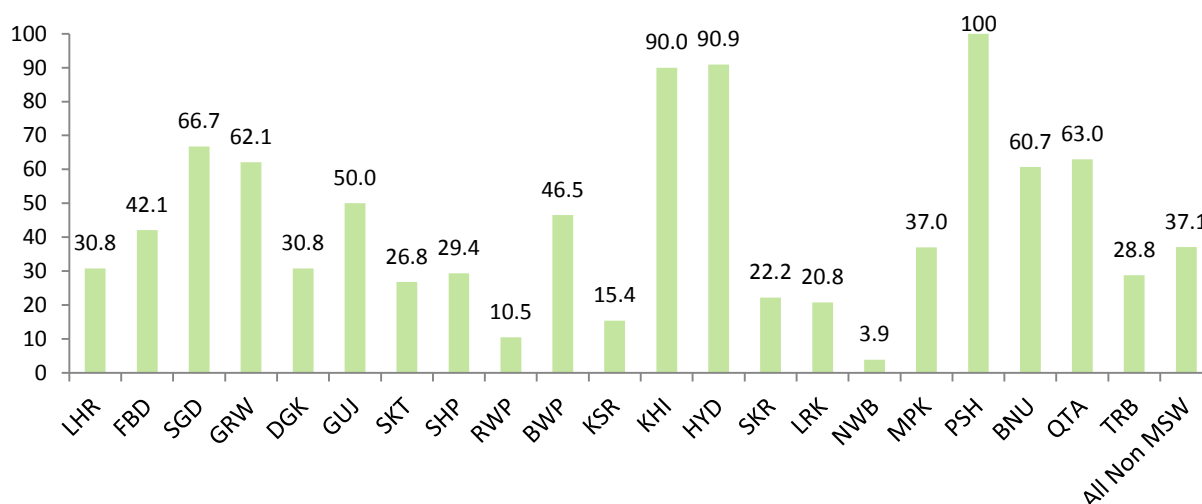
Fig 7.2c: Proportion of currently married MSWs by cities, IBBS 2016-17



Interesting findings were reported by Non-SW MSMs whereby 100% of those interviewed in Peshawar and 90.9% interviewed in both Karachi and Hyderabad reported being currently married.

The proportions for currently married reported by Non-SW MSMs in other cities were also higher than those reported by MSWs (figure 7.2d)

Fig 7.2d: Proportion of currently married MSMs (Non-MSW) by cities, Pakistan 2016-17



Approximately 26.3% of MSMs had received no formal education (Table 7.2a). A greater proportion of MSM non-SWs reported being illiterate comparative to MSWs (32.2% vs. 25.2%). A larger proportion of MSWs were educated comparative to Non-SW MSMs (table 7.2a). The highest proportion of illiteracy was reported by MSMs from Bannu (50.9%), followed by DG Khan (48.7%) and Nawabshah (44.7%) (Figure 7.2e). Sargodha had the lowest levels of illiteracy reported by MSMs (5.4%), followed by Multan (7.7%). These trends were consistent for both typologies as well (figure 7.2f & 7.2g).

Figure 7.2e: Illiteracy among MSMs (all) by cities, Pakistan 2016-17

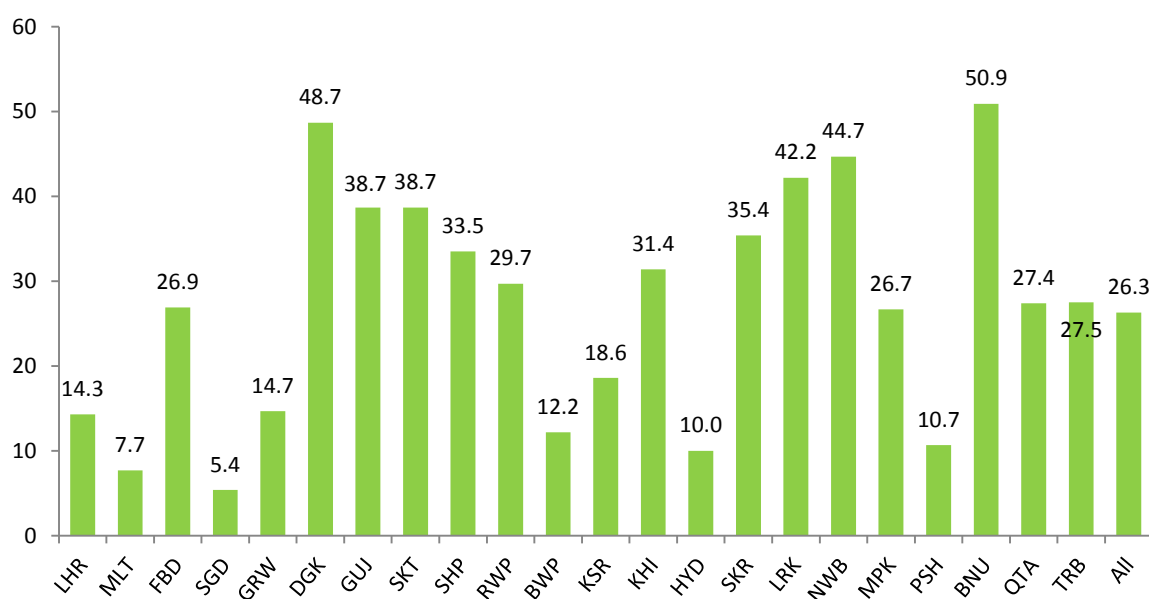


Fig 7.2f: Illiteracy among MSWs by cities, Pakistan 2016-17

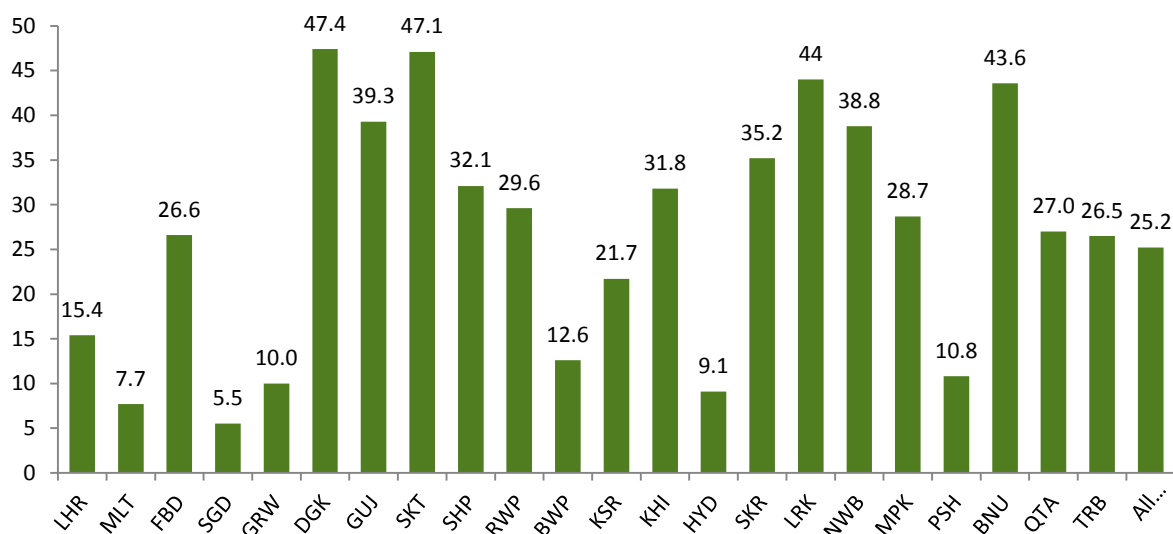
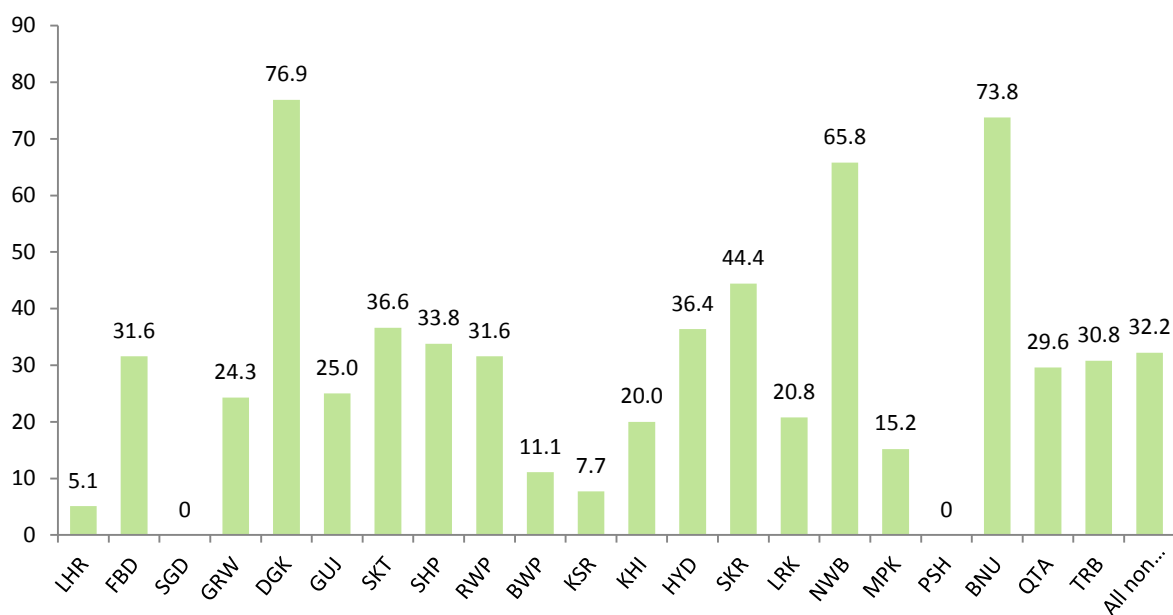


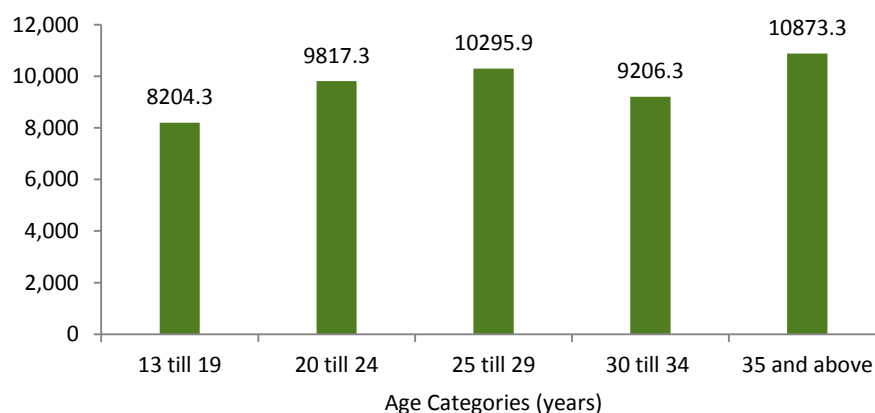
Fig 7.2g: Illiteracy among MSMs (Non-MSW) by cities, Pakistan 2016-17



The median total monthly income from all sources was approximately PKR 16,000 or US \$150.4. MSWs reported earning a median of PKR 8000 or US \$ 75.2 from sex work (Table 7.2a).

Figure 7.2h shows the mean monthly sex work income of MSWs by age groups. MSWs between the ages of 25-29 years and 35+ years earn most money through sex work. Interestingly the youngest age group of 13-19 years earn the least amount through sex work. This could largely be due to increased exploitation and harassment of young MSWs and lack of a proper structure and framework surrounding male sex work.

Fig 7.2h: Average monthly sex work income of MSWs by age group, Pakistan 2016-17



7.3 Migration and Mobility

Table 7.3a: Mobility pattern of MSMs in Pakistan, 2016-17

	All MSMs (%)	MSW (%)	MSM-non MSW (%)
Migratory Pattern (In Migration)			
Migrated from other cities	10.2	10.2	10.0
Visiting for sex work/partners	1.9	2.1	0.5
Duration of stay (mean \pm SD) in years	6.6 \pm 5.9	6.6 \pm 5.0	6.0 \pm 6.2
Migratory Pattern (Out Migration)			
Travel to other cities for sex work/partners	21.0	23.1	9.2
Most Common cities traveled to*			
• Lahore	13.5	12.9	22.1
• Karachi	13.1	12.8	17.9
• Multan	3.4	3.5	1.1
• Islamabad	3.5	3.6	2.1
• Hyderabad	3.9	4.0	3.2
International Travel			
Ever traveled abroad	2.8	2.7	3.6
Involved in sex work when living abroad	1.1	1.1	1.2

*4.0% of MSM non-MSW reported Quetta as most visited city

A predominant proportion of MSWs belonged to the city where they were interviewed (approximately 90%). Only 1.9% of MSMs migrated from another city specifically for sex work, having lived in the city of interview for an average of 6.6 ± 5.9 years. Karachi and Turbat had the highest proportion of in-migration (45.4% and 43.6% respectively), while all other cities had low proportions of in-migration. We also looked at the mobility of MSMs (out flux from the city where they were interviewed (Table 7.3a). More than one fifth of all MSMs had traveled to other cities within the past year for sex work/partners. This proportion was higher among MSWs comparative to Non-SW MSMs (23.1% vs. 9.2%). As expected, results showed that MSWs from smaller cities traveled to larger cities within the same province. Approximately 3% had travelled internationally, while 1.1% reported being involved in sex work while travelling aboard.

Fig 7.3a: Proportion of migrant MSM (all) by cities, IBBS, Pakistan 2016-17

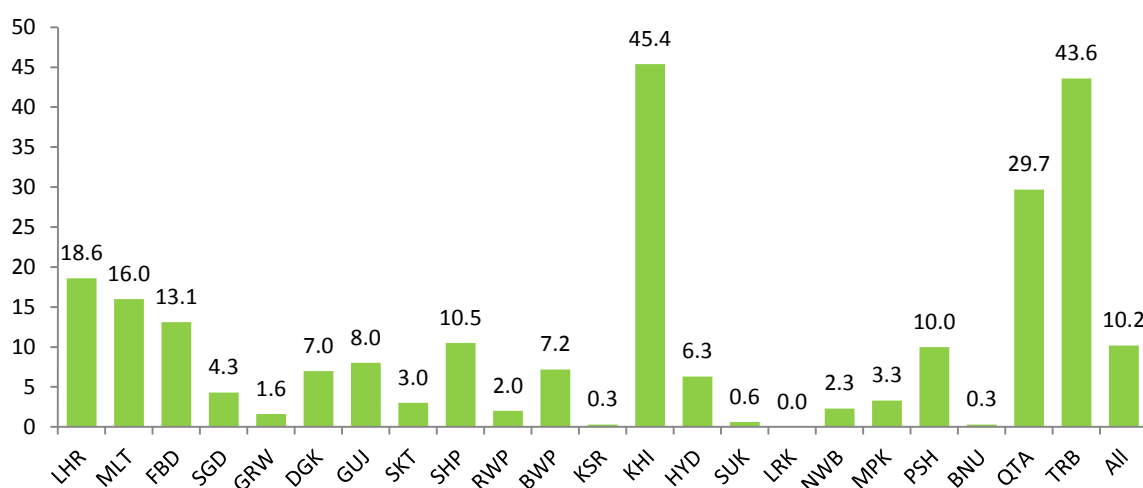


Fig 7.3b: Proportion of migrant MSWs by cities, IBBS, Pakistan 2016-17

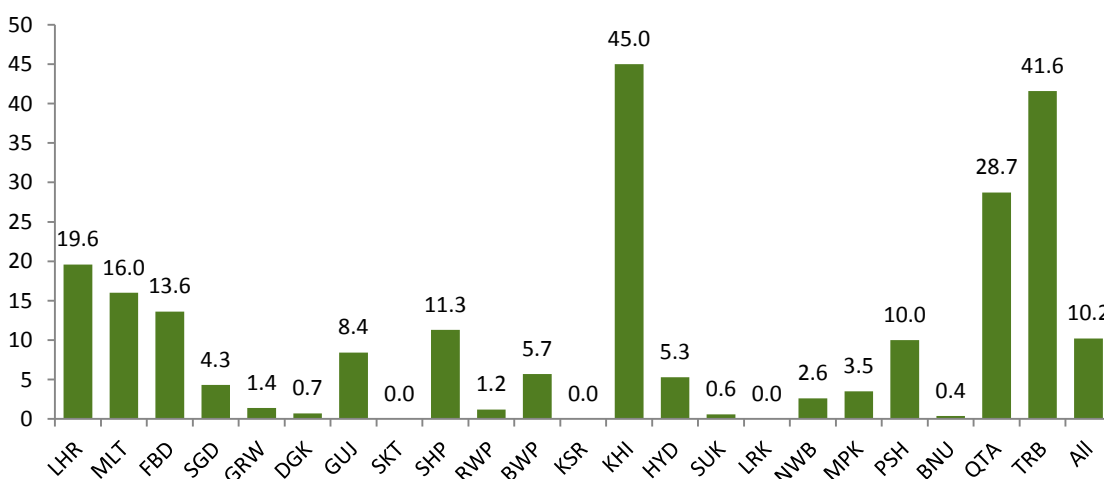
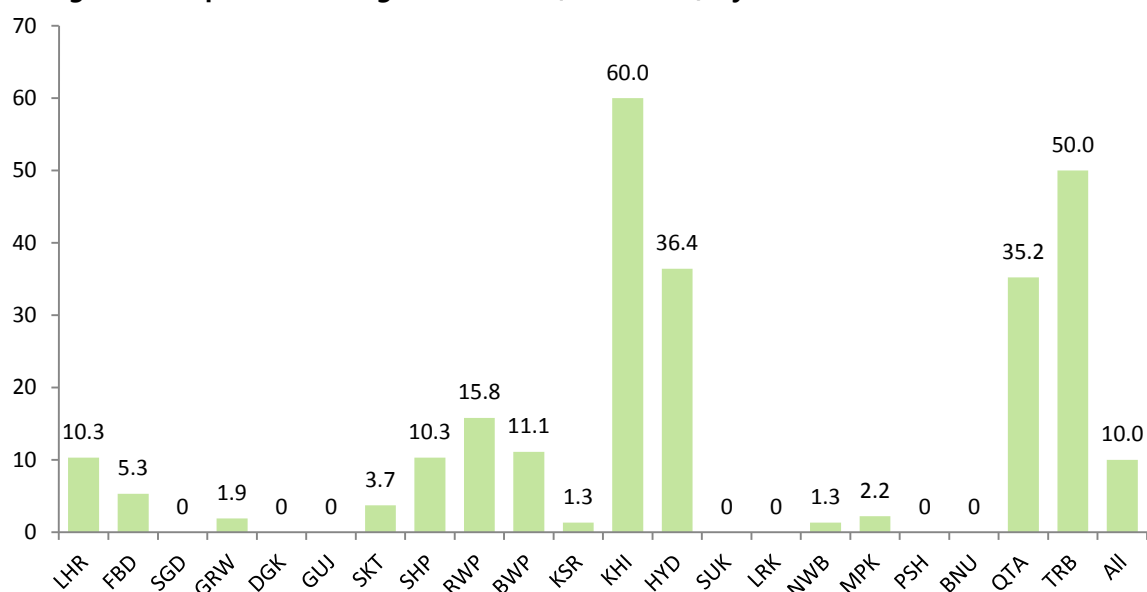


Fig 7.3c: Proportion of migrants MSMs (Non-MSW) by cities, IBBS, Pakistan 2016-17



7.4 Risk Behaviors and Practices

7.4.1a Sexual Partners of Male Sex workers

Approximately 41% of MSWs solicited clients by roaming around in public places like bus stops and markets, which formed the largest mechanism of getting clients. A large proportion (38.6%) also reported using cell phones to access clients. In addition, referral through old clients (13.8%) was also mentioned. On an average, the MSWs interviewed reported to have 1.7 sex partners per day, the average number in a month was reported to be 24.0 ± 16.3 (Table 7.4.1a).

Table 7.4.1a: Sexual behaviours and practices of MSWs, Pakistan 2016-17

Practice / Behaviour	MSWs (%)
Main source of clients*	
▪ Pimp / <i>guru</i>	2.6
▪ Roaming around	40.8
▪ Cell phone contact	38.6
▪ Internet/mobile applications	2.1
▪ Client referral	13.8
▪ Other sources**	1.3
No. of Clients	
▪ Avg No of clients/Day	1.7 ± 1.1
▪ Avg No of clients/Month	24 ± 16.3
Avg No of non-paid partners last month (mean ± SD) (mode)	2.2 ± 2.4 (1)

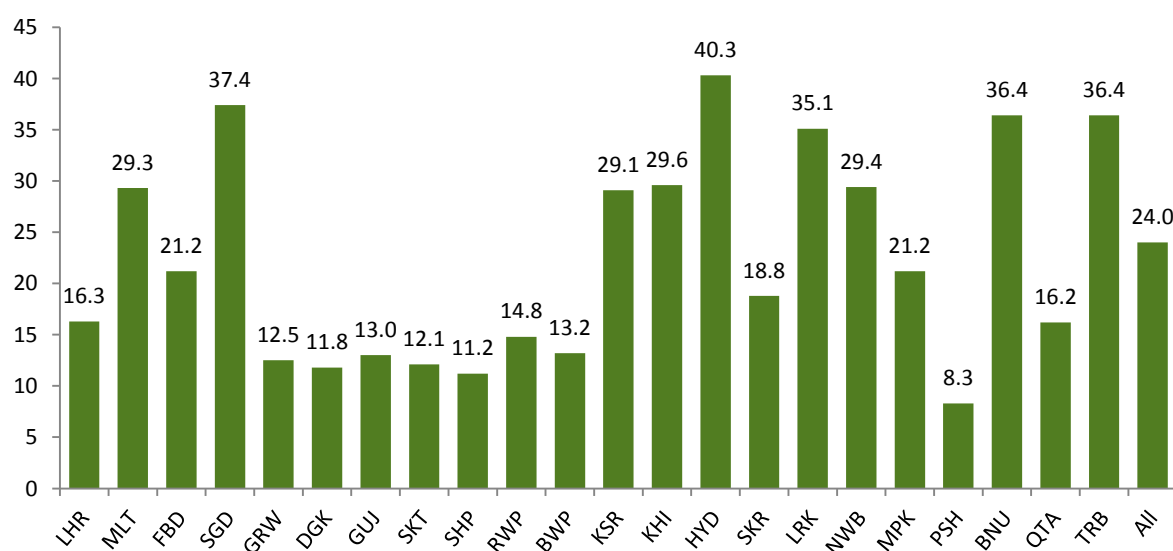
Consistent condom use with	
▪ Paid Clients	8.6
▪ Non Paid partners	4.1
Condom use at last paid client	
▪ Anal sex	26.4
▪ Oral sex	4.5
Condom use at last non paid partner	
▪ Anal sex	11.2
▪ Oral sex	2.6
Lubricant use during last anal sex with client	67.5
Alcohol/drug use during sex in the past 12 months	47.7
Had sex with PWID in past 12 months	4.1
Injected drugs in the past 12 months	4.4
Sold blood for money in past 12 months	4.6

*Proportions do not add up to 100% due to no response, don't know or missing data

**include guest house staff, snooker club, internet café

MSWs from Hyderabad, Sargodha and Bannu (40.3%, 37.4% and 36.4% respectively) reported having the highest number of mean monthly MSM partners in the past month, while Peshawar reported the lowest (8.3%). In addition to paid clients, approximately 59.6% of MSWs reported being involved in unpaid sex, having an average of 2.2 ± 2.4 non-paid partners in the past month.

Fig 7.4.1a: Avg No of partners in the past one-month for MSWs by cities, Pakistan 2016-17



7.4.1b Sexual Partners of MSMs (Non-SW)

Sexual behaviors and practices of the other Non-SW MSM were also explored. MSMs (Non-SW) reported having an average number of 4.8 ± 4.6 regular partners during the past month (Table 7.4.1b).

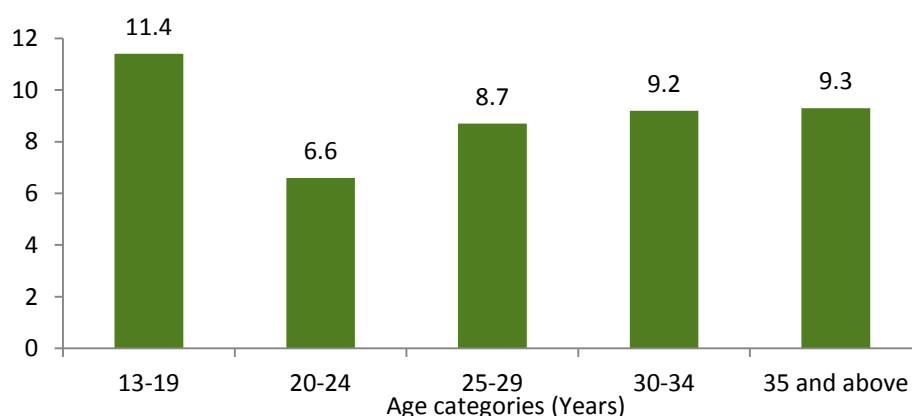
Table 7.4.1b: Sexual behaviors and practices of MSMs (Non-SW), IBBS 2016-17

Practice / Behaviour	MSM (non-MSW) %
Avg. no. of regular partners during last month (mean \pm SD) (mode)	4.8 \pm 4.6 (2)
Consistent condom use Non Paid Clients	8.3
Condom use at last intercourse	
▪ Anal sex	13.2
▪ Oral sex	2.2
Alcohol/drug use during sex in the past 12 months	38.1
Had sex with PWIDs in past 12 months	3.2
Injected drugs in the past 12 months	2.8
Sold blood for money in past 12 months	2.9

7.4.2 Condom Use

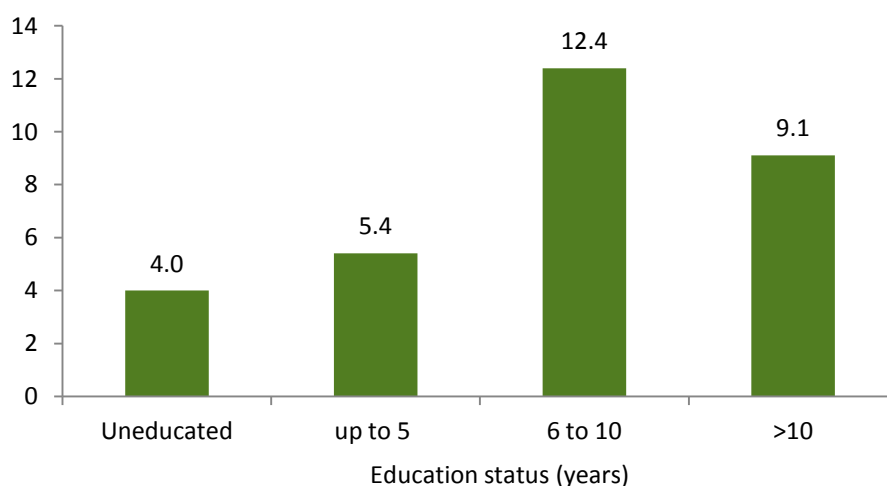
An assessment of sexual practices showed that consistent condom was generally low. Only 8.6% of the MSWs reported regular condom use with paid clients; the proportion was even lower (4.1%) with non-paid sex partners (Table 7.4.1a). Among MSMs (Non-SW), consistent condom use (non-paid partner) was reported at 8.3%.

Fig 7.4.2a: Consistent condom use by MSWs with clients by age groups, Pakistan 2016-17



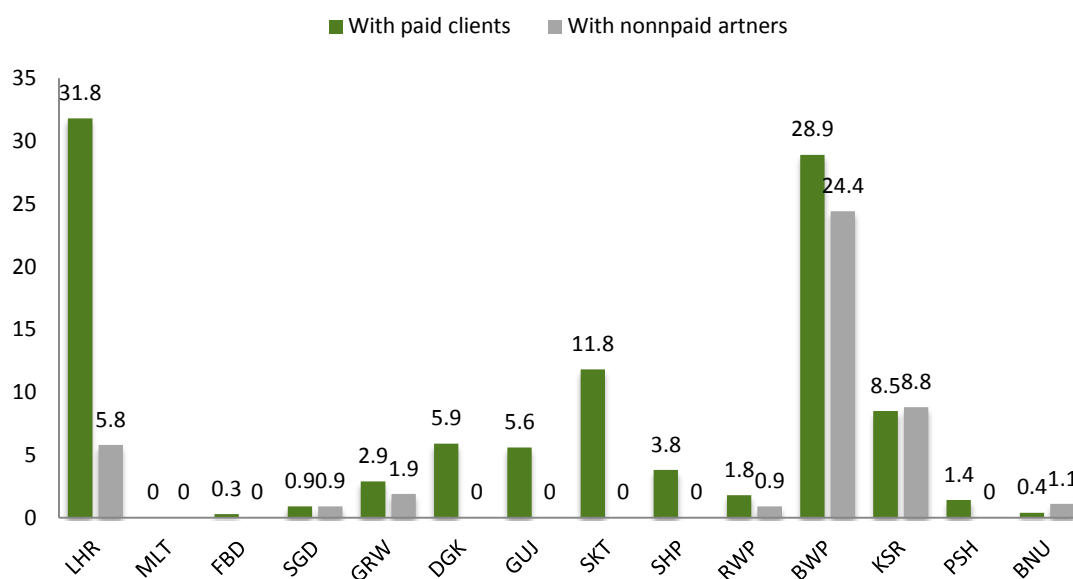
Consistent condom use reported during the past month varied by age group. No clear pattern pertaining to condom use emerged (Figure 7.4.2a). Consistent condom use also showed an association with education, with increasing education level showing an increase in consistent condom use (Figure 7.4.2b).

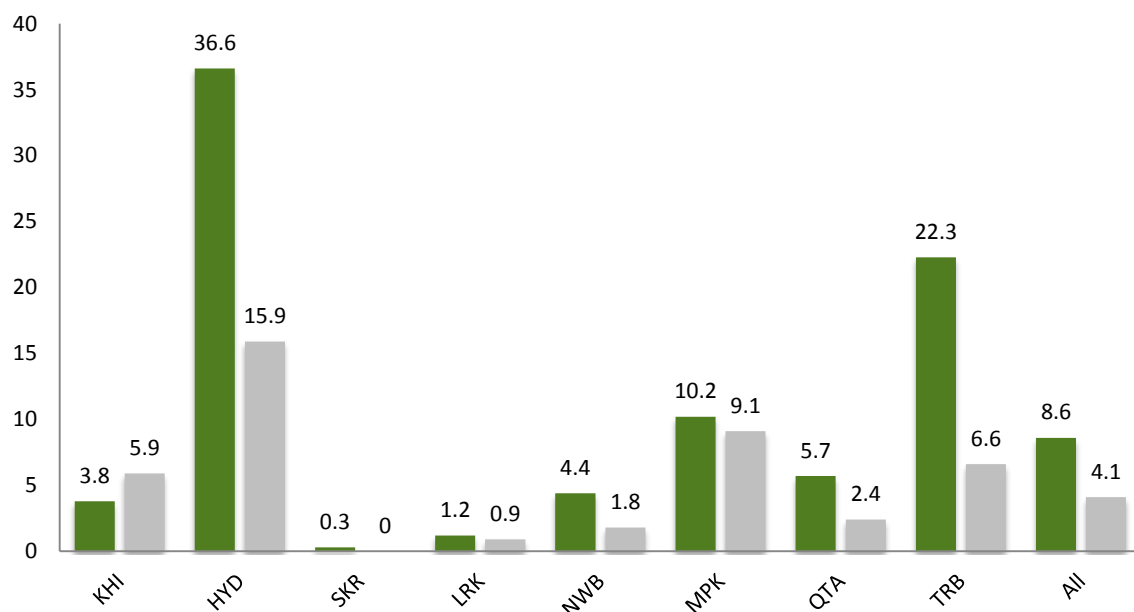
Fig 7.4.2b: Consistent condom use by MSWs with clients by education, Pakistan 2016-17



Consistent condom use among MSWs varied considerably across cities, with highest proportions of consistent condom use with paid clients reported in Hyderabad, Turbat, Lahore and Bahawalpur (Figure 7.4.2c).

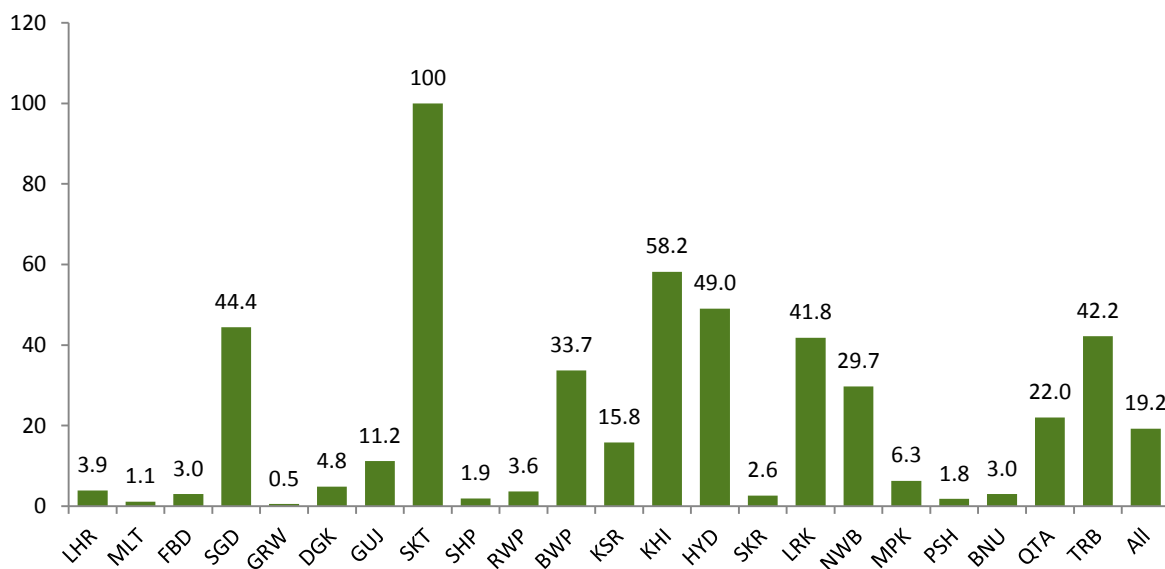
Fig 7.4.2c: Consistent condom use MSWs with clients & Non paid partners, Pakistan 2016-17





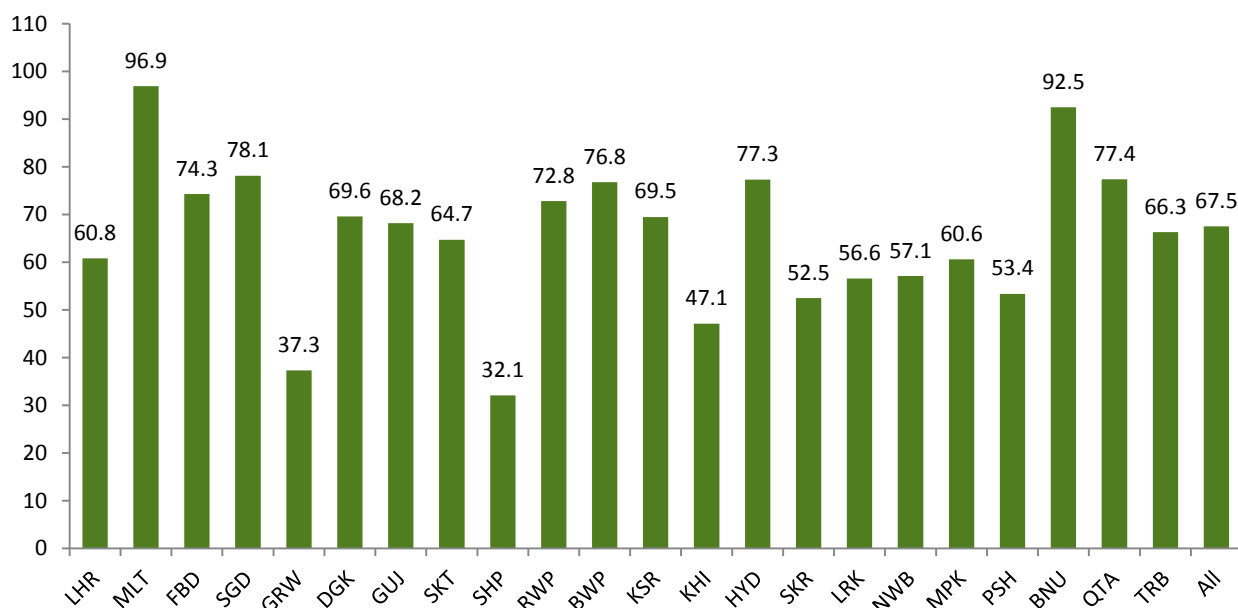
Overall, 19.2% of MSWs were carrying a condom at the time of interview. The highest proportions of condom carriage were reported from Sialkot (100%) and Karachi (58.2%; Figure 7.4.2d).

Fig 7.4.2d: MSWs carrying a condom at the time of the survey by cities, Pakistan 2016-17



Almost two thirds (67.5%) of all MSWs reported using lubricants during anal sex with last client. In all cities except Gujranwala, Sheikhupura and Karachi over 50% of the MSWs interviewed reported use of a lubricant during last anal sex (Figure 7.4.2e).

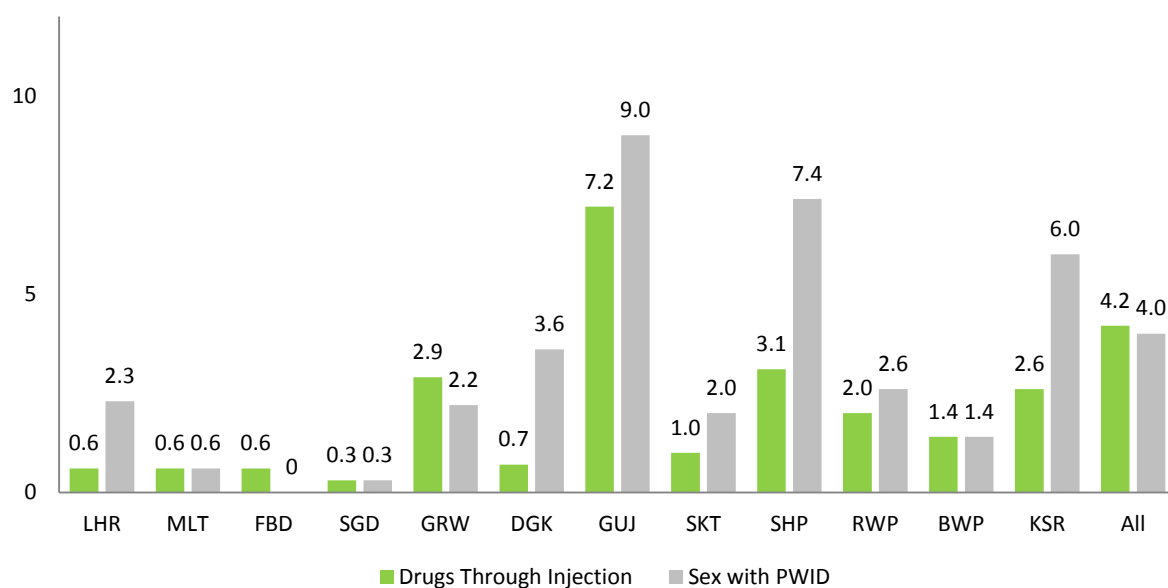
Fig 7.4.2e: Use of a lubricant at last sex by MSWs, Pakistan 2016-17

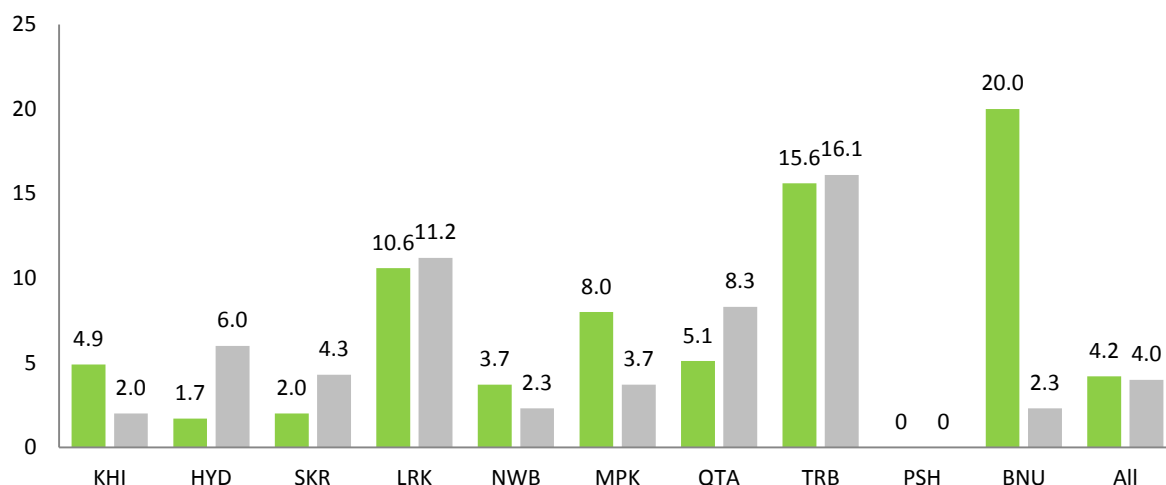


7.4.3 Injecting Drug Use

Overall, 4.2% of all MSM interviewed reported injecting drugs in the past twelve months, while 4% of MSMs reported having had sex with an injecting drug user (PWID) in the past twelve months (Figure 7.4.3a). Injecting drugs and having sex with a PWID was highest in Bannu and Turbat among all the cities (20.0% and 15.6% respectively). Reporting sex with a PWID was high in Turbat, Larkana and Gujrat.

Fig 7.4.3a: All MSMs injecting drugs and having sex with a PWID, Pakistan 2016-17





Among Non-SW MSMs, only 3.2% reported having sex with a PWID in the past year, while 2.8% reported injecting drugs (table 7.4.1b).

7.5 HIV and STI Related Knowledge

Approximately two thirds of MSMs had heard of HIV and/or AIDS (Table 7.5a). Knowledge about HIV/AIDS was higher among MSWs comparative to Non-SW MSMs (69.5% vs. 46.4). Similarly, knowledge about whether a healthy looking person can have HIV was also greater among MSWs comparative to Non-SW MSMs (45.2% vs. 29.3%). Knowledge of sexual transmission as a mode of HIV transmission was reported by 53.4% of MSMs, whereas only 32.9% knew that HIV could be transmitted through sharp instruments/syringe.

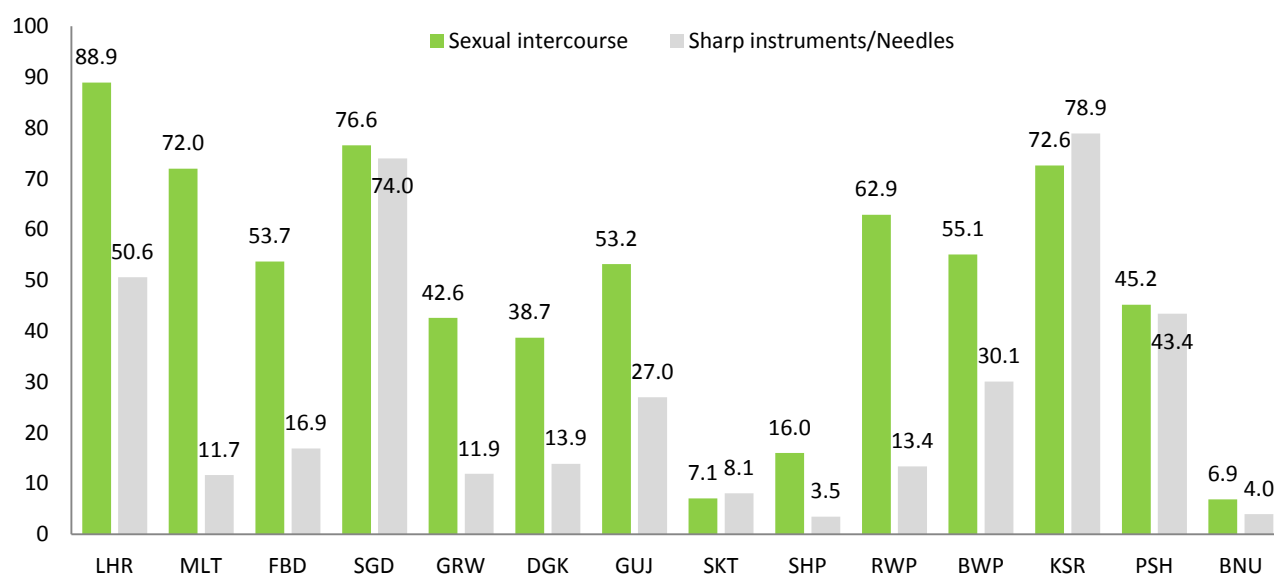
Table 7.5a: HIV and STI related knowledge among MSMs, Pakistan 2016-17

Knowledge area	All MSMs (%)	MSWs (%)	MSMs (Non-SW) (%)
Ever heard of HIV and/or AIDS	66.0	69.5	46.4
Healthy looking person can have HIV/AIDS	42.8	45.2	29.3
HIV transmitted by sexual intercourse	53.4	56.4	36.5
HIV transmitted by sharp instrument/needle	32.9	35.1	20.9
Condom can prevent HIV transmission	45.8	48.4	31.1
Sexual abstinence to prevent HIV transmission	29.9	31.8	19.2
Clean needle/syringe can prevent HIV transmission	12.3	13.3	6.5
Ever tested for HIV	26.7	29.3	12.6
Know where to receive HIV test	34.4	37.1	19.8
Self-perception of risk for HIV	21.0	23.1	9.3
Awareness of STIs			

Aware of STIs	56.5	59.3	40.5
Self-reported STI in past 12 months	18.4	20.6	6.4
Symptoms experienced:			
Urethral discharge	6.6	7.2	2.8
Scrotal swelling	3.6	3.8	2.0
Genital Ulcers	0.5	0.5	0.2
Genital Warts	8.5	9.7	1.8
Anal Discharge	4.8	5.5	1.3
Received treatment for reported STIs	17.8	19.7	6.2

Further analysis on the knowledge of mode of HIV transmission by city among MSMs showed considerable variation in knowledge levels. Knowledge about sexual transmission was highest (more than 75%) in Karachi, Hyderabad, Lahore, Larkana and Sargodha. Knowledge of HIV transmission through needle/syringe was lower comparative to knowledge about sexual transmission in all cities with the exception of Kasur (Figure 7.5a). Analyses looking at city wise variations in modes of transmission by typology are reported in the following figures.

Figure 7.5a: Knowledge of HIV transmission among MSMs (all) by cities, Pakistan 2016-17



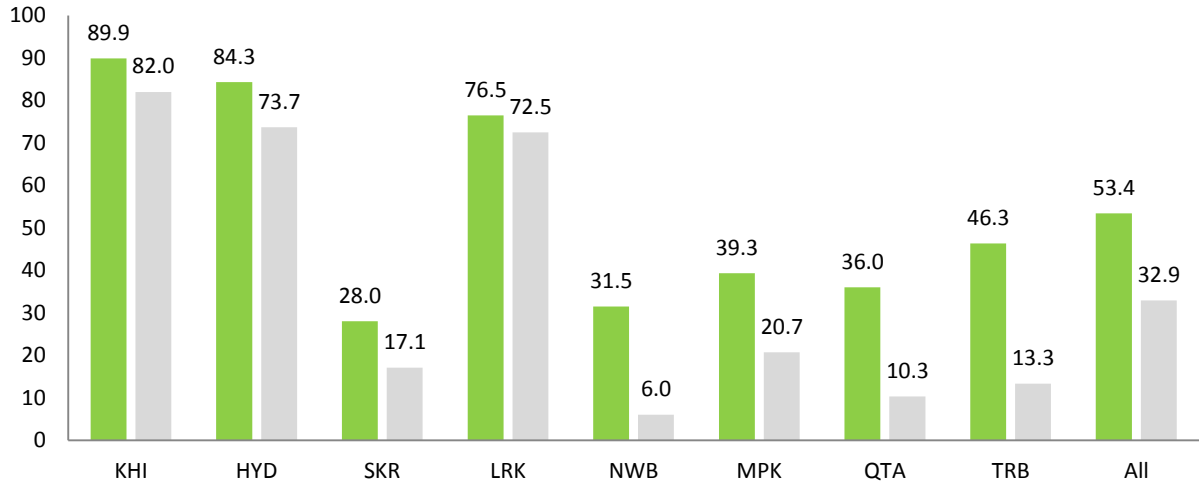


Fig 7.5b: Knowledge of HIV transmission among MSWs by cities, Pakistan 2016-17

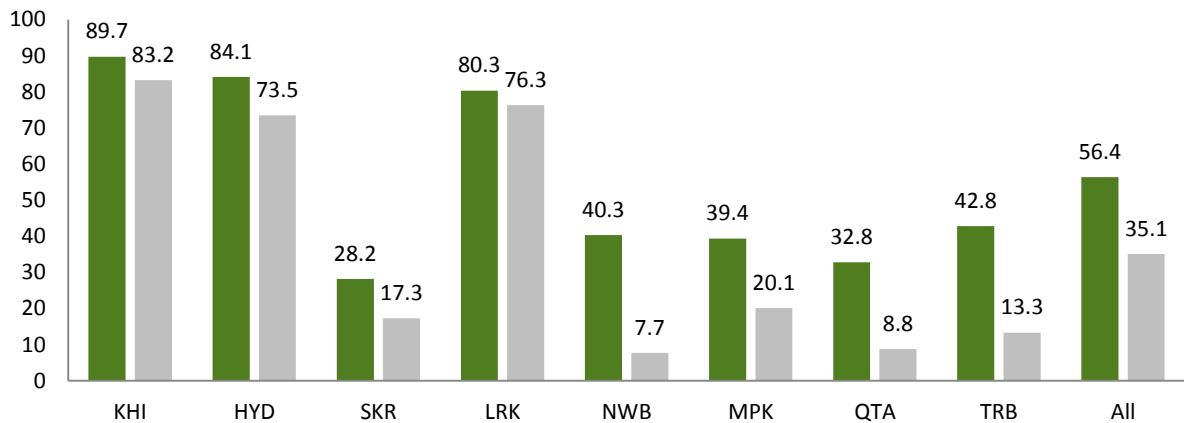
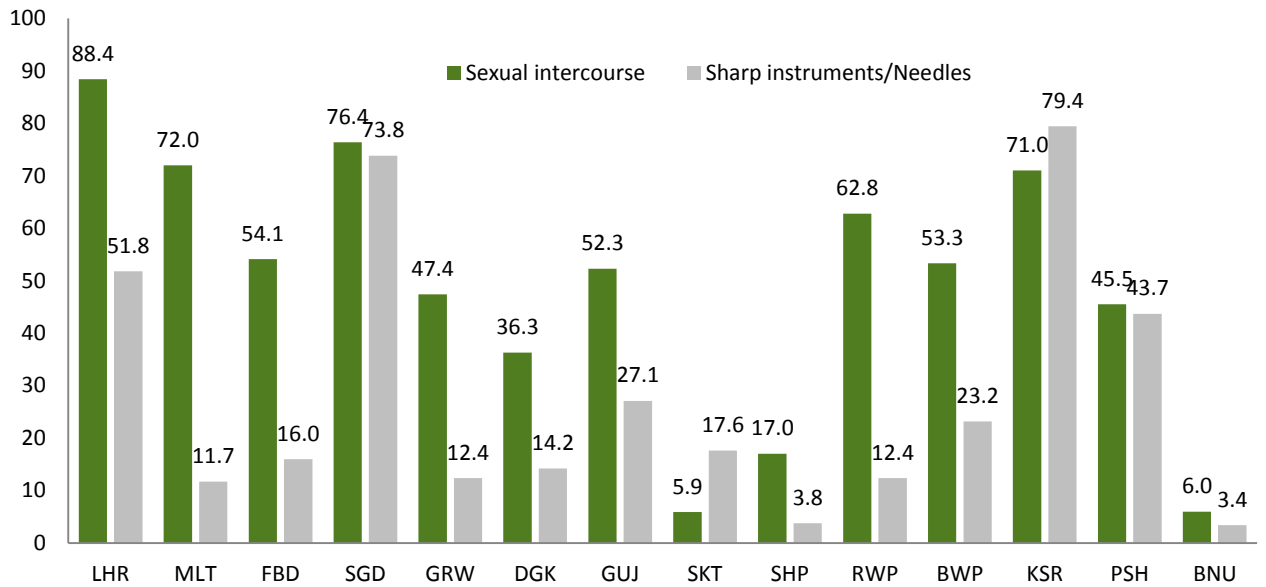
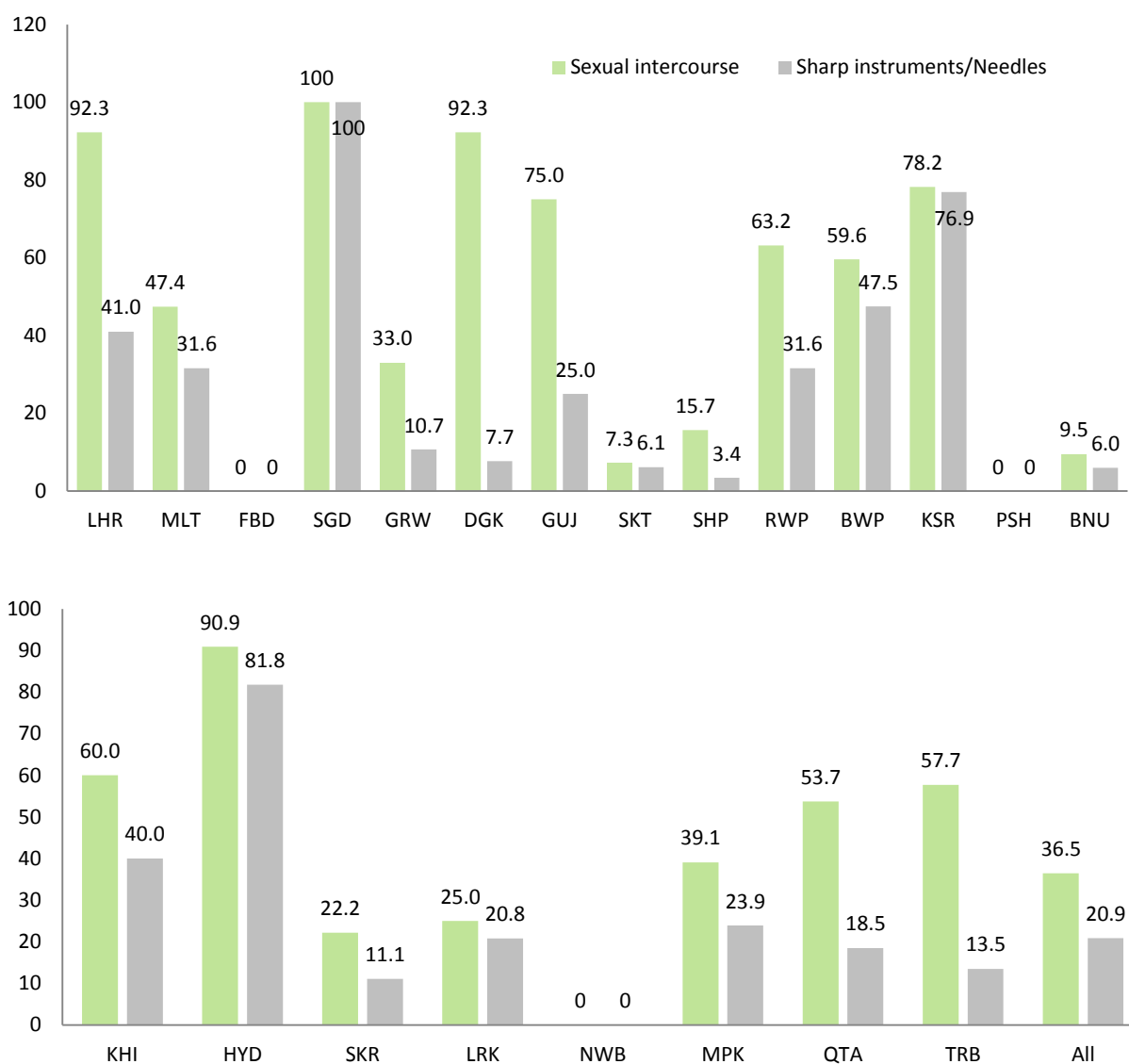


Fig 7.5c: Knowledge of HIV transmission among non-SW MSMs by cities, Pakistan 2016-17



Knowledge of HIV prevention showed that, 45.8% of MSMs knew that using a condom during sex could prevent HIV transmission, and 29.9% believed that sexual abstinence could prevent HIV transmission. Only 12.3% knew that the use of clean needles/syringes could prevent HIV transmission.

Among all the cities where MSM were interviewed, a higher proportion reported knowing about condom and sexual abstinence as modes of HIV prevention, in comparison to the use of sterile needles as a protective factor (Figure 7.5d). However, it is important to note that knowledge levels reported by MSMs for HIV preventive measures in most cities were less than 50%. Similar trends were reported for typology wise analysis conducted for knowledge of HIV preventive measures (Figure 7.5e and 7.5f).

Fig 7.5d: Knowledge of HIV prevention among All MSMs by cities, Pakistan 2016-17

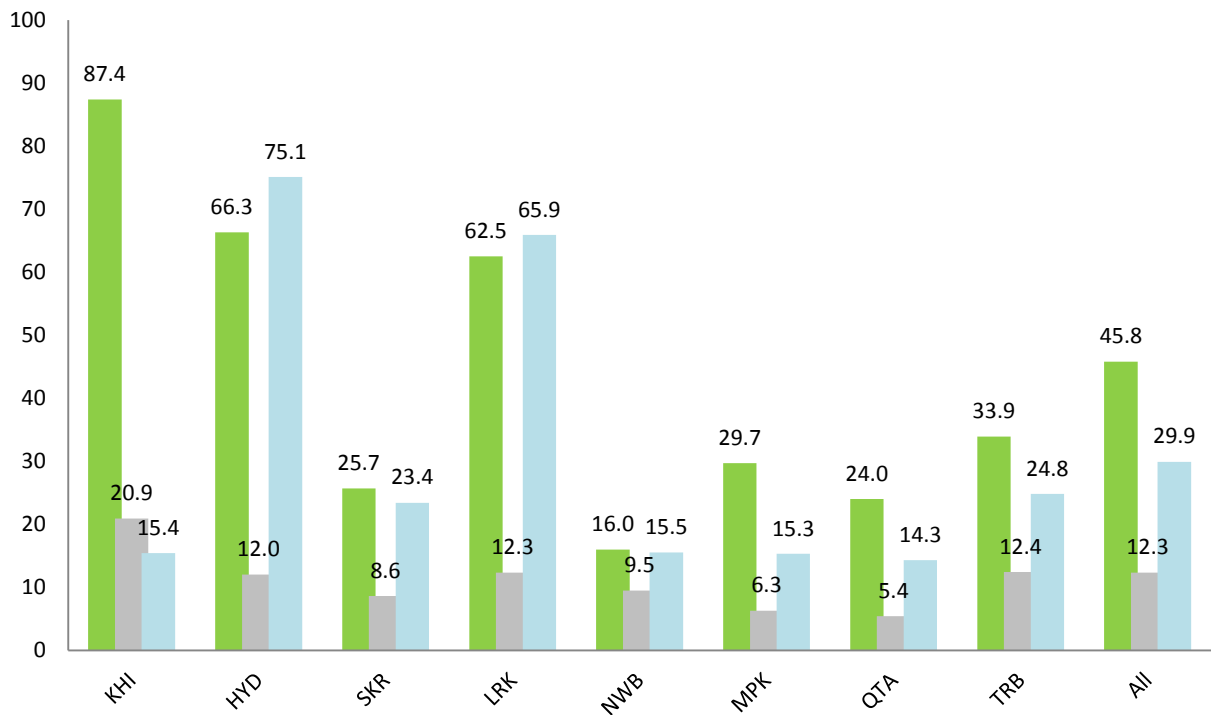
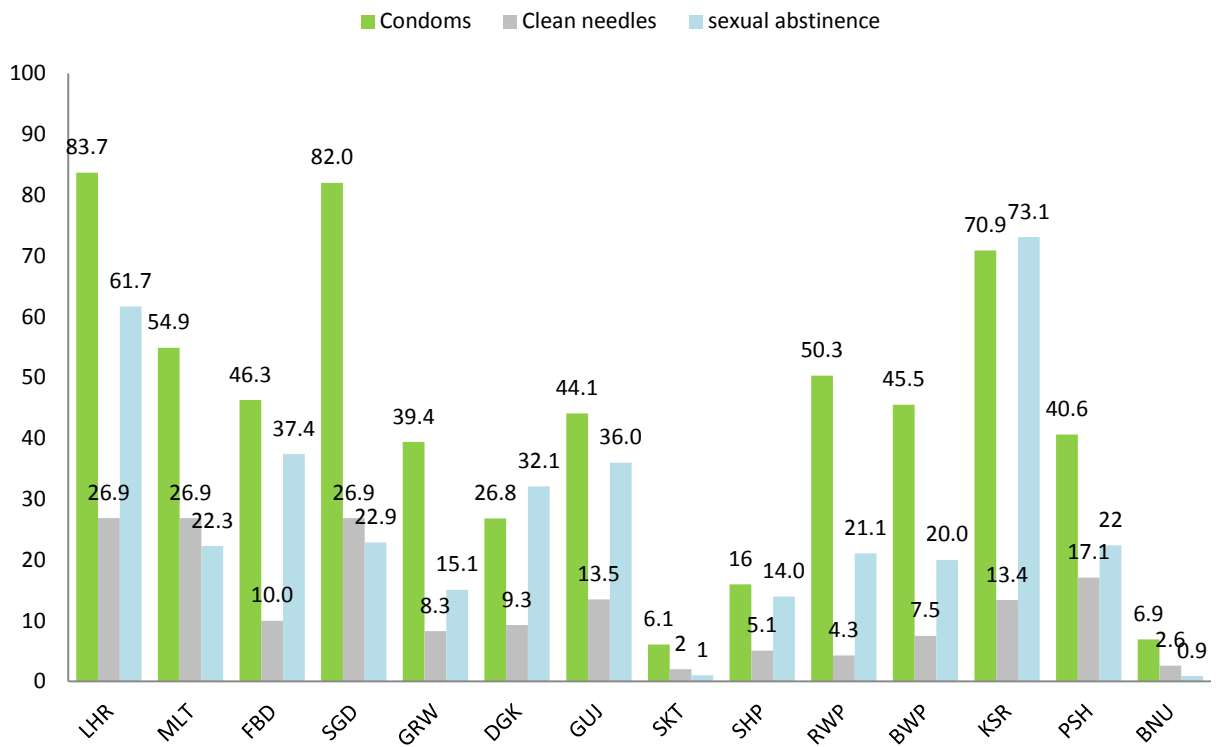


Fig 7.5e: Knowledge of HIV prevention among MSWs by cities, Pakistan 2016-17

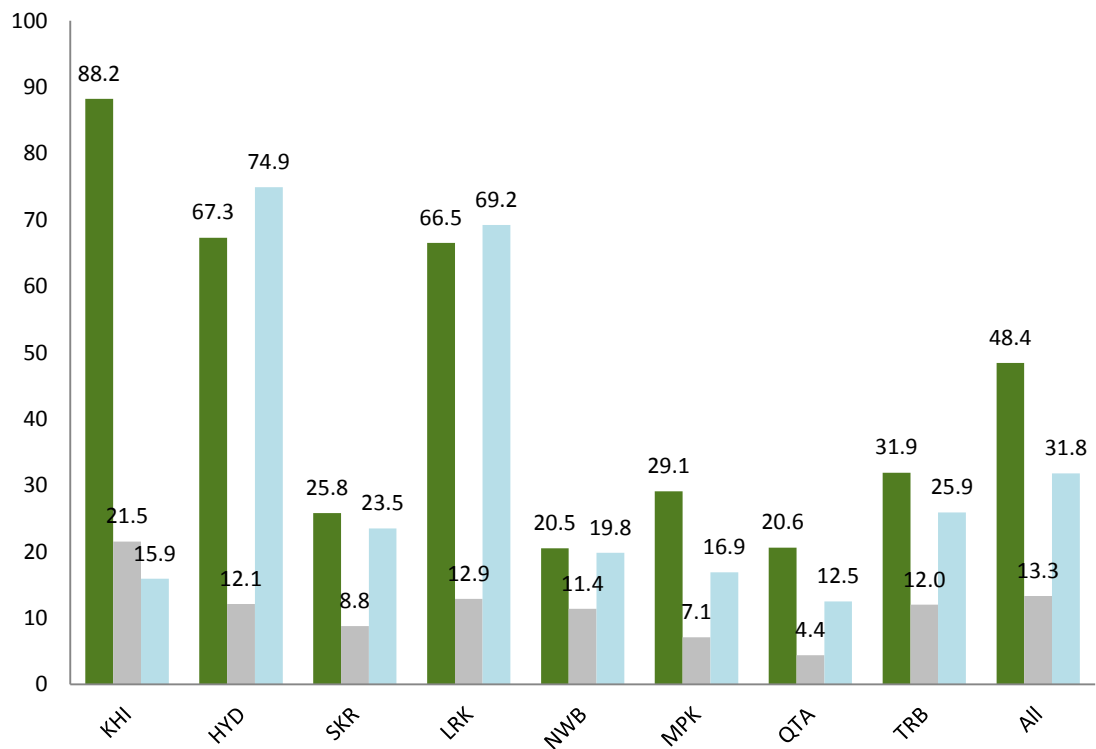
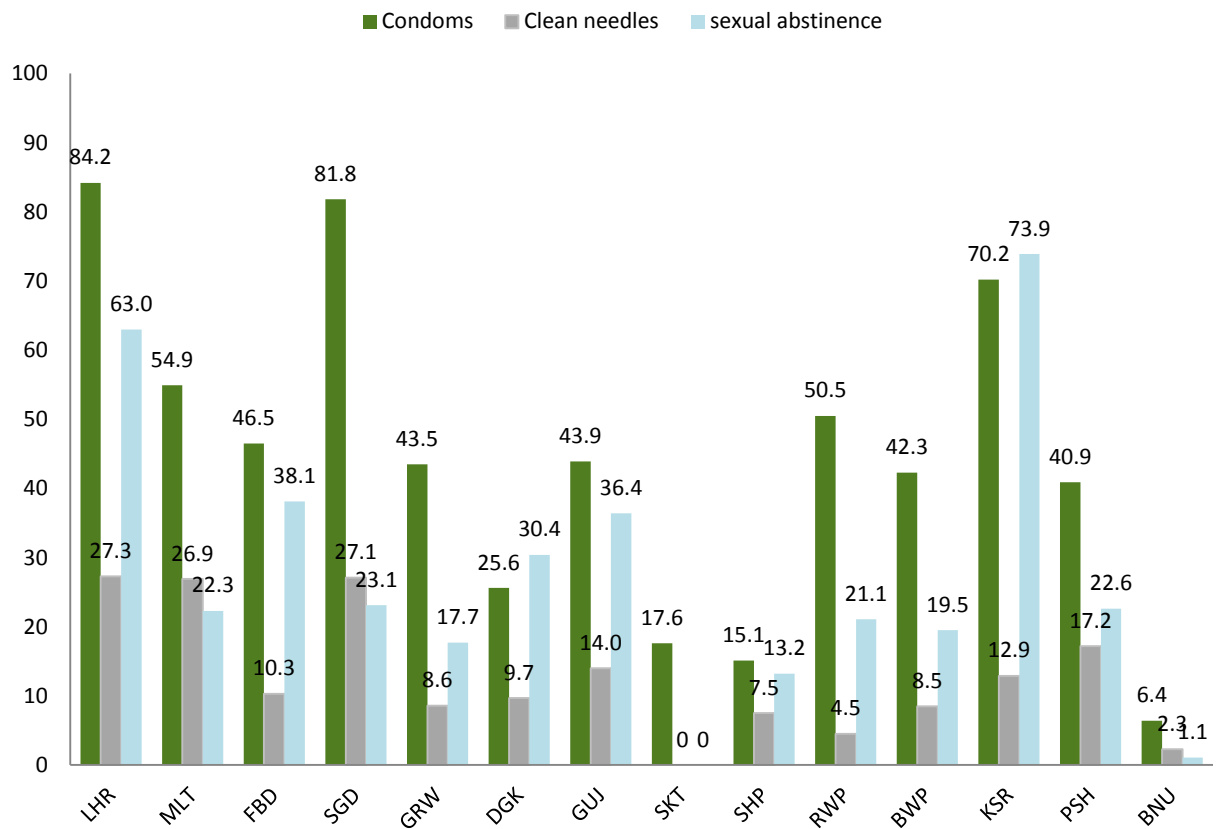
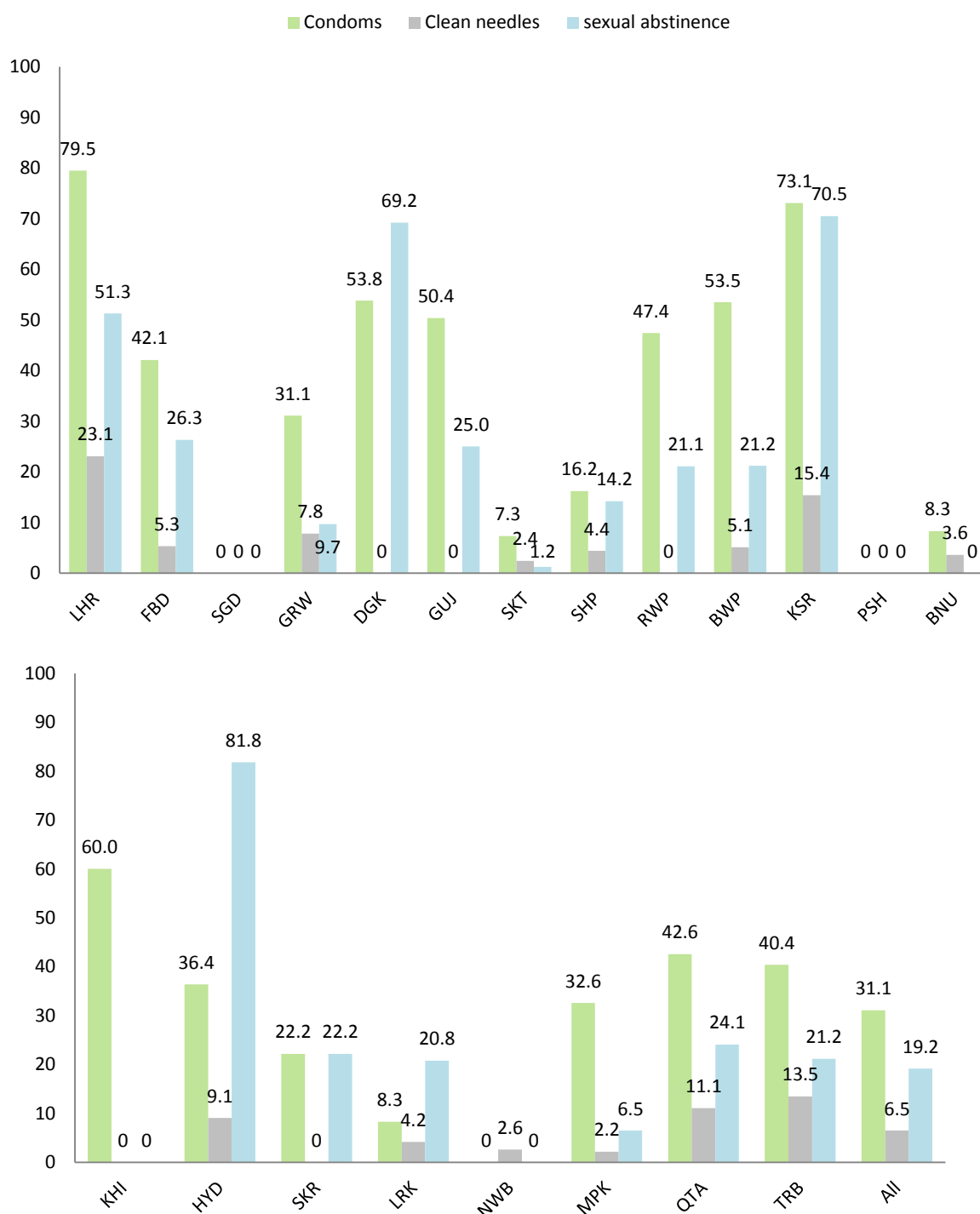


Fig 7.5f: Knowledge of HIV prevention among non-SW MSMs by cities, Pakistan 2016-17



Approximately a quarter of all the MSMs interviewed (26.7%) reported ever been tested for HIV and approximately one-fifth (21%) felt they were at risk of acquiring HIV infection. More than twice of MSWs interviewed were tested for HIV comparative to Non-SW MSMs (29.3% vs. 12.6%). More than half the MSMs interviewed were aware of various STIs (56.5%) and 18.4% reported being diagnosed with an STI in the past 12 months (Table 7.5a), while 17.8% reported receiving treatment for the reported STI.

7.6 Program Exposure and Utilization

Only 34.9% of MSMs were aware of a HIV prevention program (SDP) in their city, with a greater proportion of MSWs reporting awareness about SDPs comparative to Non-SW MSMs. Service utilization was reported by 13.3% of MSMs the predominant proportion of whom were MSWs. More than a fifth (22.3%) of MSMs reported receiving free condoms in the past month (Table 7.6a).

Table 7.6a: Knowledge & utilization of HIV programs by MSMs, Pakistan 2016-17

Knowledge Area	All MSMs (%)	MSWs (%)	MSMs non-MSW (%)
Ever heard of HIV prevention programs	34.9	38.6	14.2
Services utilized	13.3	15.1	3.5
Received free condom in past one month	22.3	24.8	8.0

Fig 7.6a: Awareness & utilization of HIV prevention programs by MSM, Pakistan 2016-17

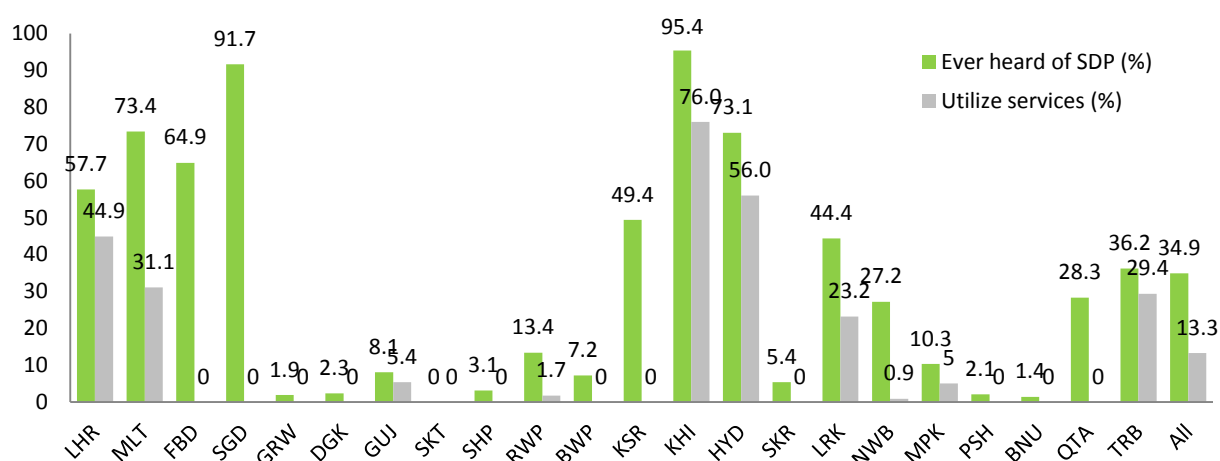


Fig 7.6b: Awareness & utilization of HIV prevention programs by MSWs, Pakistan 2016-17

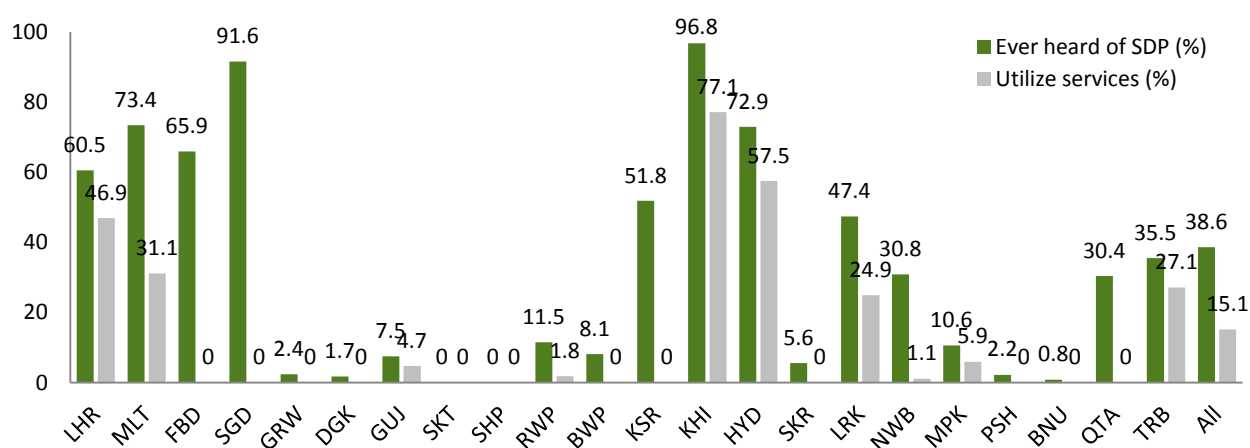
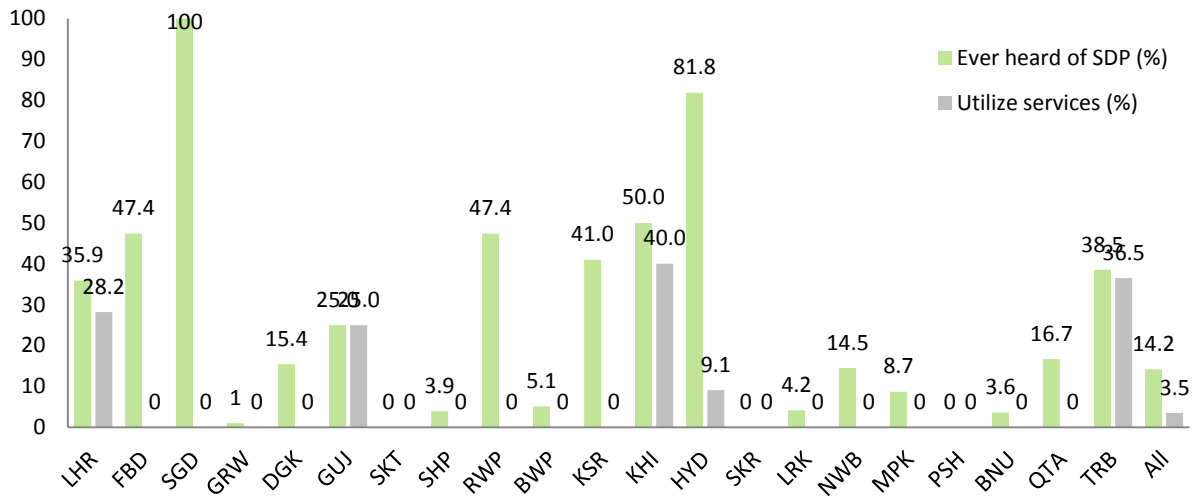


Fig 7.6c: Awareness & utilization of HIV prev programs by Non SW MSM, Pakistan 2016-17



To better understand the utilization of HIV prevention programs, MSMs were asked about the various services they utilized in the past 12 months. Analysis showed that getting condoms from the SDP was the most utilized service (10.4%), followed by counselling (8.1%) and getting tested for HIV (8.0%; Figure 7.6d). Table 7.6b shows the city wise distribution for commonly utilized services by MSM in the past 12 months. None of the MSMs reported utilization of any services in the following cities; Faisalabad, Sargodha, Gujranwala, D.G Khan, Sialkot, Sheikhpura, Rawalpindi, Bahawalpur, Kasur, Sukkur, Peshawar, Bannu, Quetta.

Fig 7.6d: Common services utilized at SDPs in past 12 months by MSM. Pakistan 2016-17

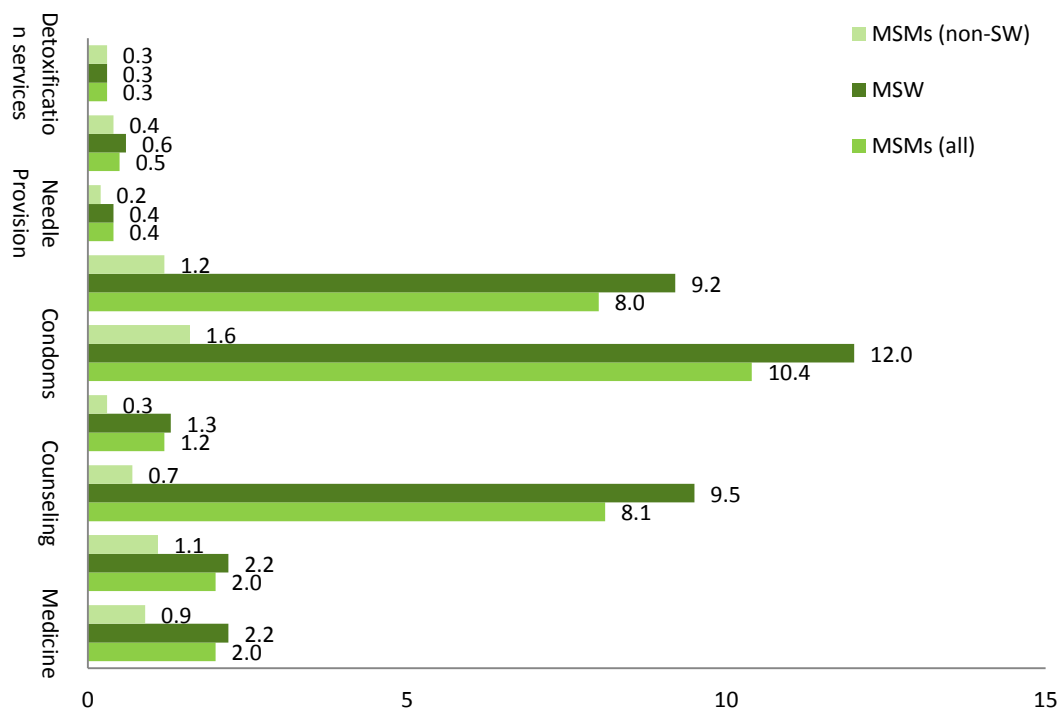


Table 7.6b: Common services utilized at SDPs in past 12 months by cities. Pakistan 2016-17

	LHR	MLT	GUJ	KHI	HYD	LRK	NWB	MPK	TRB
Medicines	7.4	18.0	1.8	2.6	0.9	0	0	0	14.7
STI treatment	1.1	0.9	1.8	0.6	25.7	1.3	0	0	16.1
Counselling	1.4	19.4	2.7	71.7	55.4	6.9	0.3	0	1.8
Social services	0.3	16.6	0	2.6	1.4	23.2	0	0	2.8
Condoms	42.0	18.0	4.5	68.6	41.1	22.6	0.9	2.3	5.0
HIV testing	16.9	14.0	0.9	65.1	52.3	0.3	0	0	10.1
Needle provision	0.3	0.9	1.8	0.9	0.3	0	0	0	0.9
ASD services	0	0.6	0.9	3.7	0	0	0	4.3	3.2
Detoxification	0	0.3	0	1.1	0	0	0	3.0	3.7

7.7 Harassment, Discrimination, Violence

MSM were asked about whether they faced any harassment, discrimination or violence. One third of the MSM reported being discriminated against. Twice as many MSWs reported discrimination comparative to Non-SW MSMs (34.1% vs. 15.9%). More than half the MSM reported ever being physically hurt or beaten or otherwise physically forced to have sex.

Table 7.7a: Harassment, Discrimination and Violence reported by MSM, IBBS 2016-17

	All MSMs (%)	MSWs (%)	MSMs (Non SW) (%)
Being discriminated	31.3	34.1	15.9
Ever been treated unfairly or denied health care	6.3	6.7	3.7
Ever been physically hurt	51.9	55.4	32.6
Ever tricked/ lied into having sex	56.6	60.6	34.7
Ever beaten or otherwise physically forced to have sex	48.7	52.5	27.6
Arrested in the past 12 months	18.5	20.0	10.4

7.8 HIV Prevalence

Of the total 6773 MSM tested for HIV, 250 tested positive for HIV. The overall weighted prevalence was 5.4% (95% CI: 5.2, 5.6) [un-weighted prevalence 3.7% (95% CI: 3.3, 4.2)]. The highest prevalence for HIV overall for MSM was reported for Kasur (9.7%) followed by Karachi (9.2%) and Nawabshah (7.5%) (Table 7.8a). In The 22 cities where IBBS was conducted no MSM was tested HIV positive in Sargodha and Sialkot.

Table 7.8a: HIV Prevalence among ALL MSMs, Pakistan 2016-17

	Tested	Positive	Prevalence %	Prevalence 95% CI
Lahore	350	13	3.7	2.2,6.3
Multan	350	4	1.1	0.4,2.9
Faisalabad	350	5	1.4	0.6,3.3
Sargodha	350	0	0.0	0
Gujranwala	312	4	1.3	0.5,3.3
DGK	302	12	4.0	2.3,6.9
Gujrat	111	6	5.4	2.5,11.3
Sialkot	99	0	0.0	0
Sheikhupura	257	19	7.4	4.9,11.6
Rawalpindi	350	14	4.1	2.5,6.8
Bahawalpur	345	2	0.6	0.2,2.1
Kasur	350	34	9.7	7.1,13.3
Karachi	350	32	9.2	6.6,12.7
Hyderabad	350	20	5.7	3.7,8.7
Sukkur	350	18	5.1	3.3,8.0
Larkana	349	16	4.9	3.0,7.8
Nawabshah	349	26	7.5	5.2,10.7
Mirpurkhas	300	11	3.7	2.1,6.5
Peshawar	281	2	0.7	0.2,2.6
Bannu	350	3	0.9	0.3,2.5
Quetta	350	5	1.4	0.6,3.3
Turbat	218	4	1.9	0.7,4.7

Table 7.8b showed segregated prevalence for MSW and non-SW MSM by cities. Total 5742 MSW were tested among which 210 were HIV positive. The weighted prevalence among MSW was 5.6% (95% CI: 5.4,5.8) [un-weighted prevalence 3.7% (95% CI: 3.2,4.2)].

Table 7.8b: HIV Prevalence among MSWs and MSMs (Non-SW) City wise, IBBS 2016-17

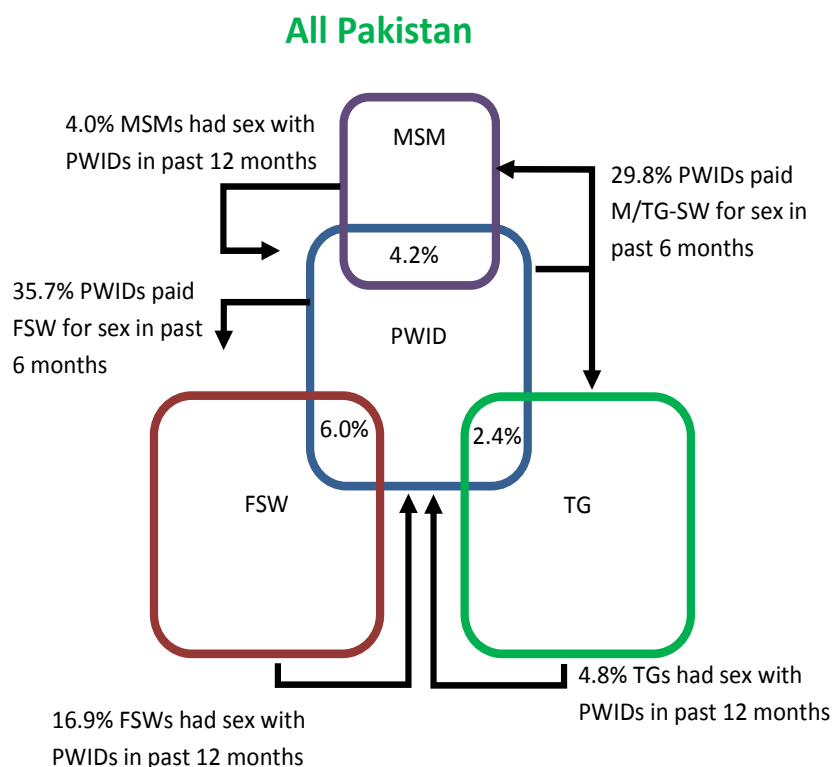
	MSW		Non-SW MSM	
	Prevalence	Prevalence 95% CI	Prevalence %	Prevalence 95% CI
Lahore	3.6	2.0,6.2	5.1	1.4,16.8
Multan	1.1	0.4,2.9	-	-
Faisalabad	1.5	0.7,3.5	0	0
Sargodha	0		0	0
Gujranwala	1.0	0.3,3.4	1.9	0.5,6.8
DGK	4.2	2.4,7.1	0	0
Gujrat	4.7	2.0,10.5	25.0	4.6,70.0
Sialkot	0	-	0	0
Sheikhupura	7.7	3.0,17.9	7.4	4.5,11.8
Rawalpindi	3.6	2.1,6.2	10.5	2.9,31.4
Bahawalpur	0.4	0.01,2.3	1.0	0.2,5.5
Kasur	9.9	6.9,14.1	9.0	4.4,17.4
Karachi	9.4	6.7,13.0	0	0
Hyderabad	5.0	3.2,7.9	27.3	9.7,56.6
Sukkur	5.0	3.1,7.8	11.1	2.0,42.5
Larkana	5.0	3.1,7.8	0	0
Nawabshah	8.8	6.0,12.8	2.6	0.7,9.1
Mirpurkhas	4.0	2.2,7.1	2.2	0.4,11.3
Peshawar	0.7	0.002,2.6	0	0
Bannu	0.8	0.002,2.7	1.2	0.2,6.4
Quetta	1.4	0.5,3.4	1.9	0.3,10.0
Turbat	1.9	0.6,5.2	1.9	0.3,10.1

Of the 1031 Non-SW MSM tested 40 were tested HIV positive. The weighted prevalence among Non-SW MSM was 3.4% (95% CI: 2.9, 5.3) [un-weighted prevalence 3.4% (95% CI: 2.9,5.3)].

8. NETWORK INTERACTIONS & BRIDGE POPULATIONS

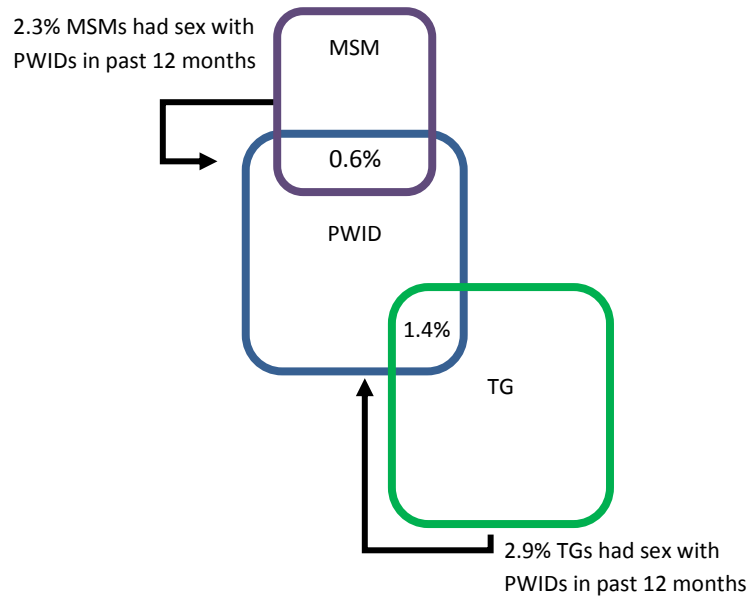
Since Larkana's major HIV outbreak among PWIDs in 2003, HIV surveillance data have shown increasing infections among the PWID groups in other cities. Round 4 results showed high prevalence among PWIDs in most cities where IBBS was conducted and the beginning of the HIV epidemic among other high-risk groups such as Hijra (transgender) Sex Workers and Male Sex workers. To prevent the spread of HIV, it is important to understand the extent and pattern of interactions between the different key populations and the coverage of prevention programs targeting these groups. Surveillance data suggest some important interactions between PWIDs and sex workers, as illustrated in Figure 8.1a.

Fig 8.1a: Interactions between the PWID, MSM and FSW population, IBBS 2016



Overall 4.2% of MSM, 2.4% of TGs and 5.9% of FSW reported injecting drugs in the past twelve months. Furthermore 29.8% of PWIDs reported having sex with MSM/TG during the past six months. More than one third of the PWIDs interviewed (35.7%) reported paying a FSW for sexual intercourse in the past 6 months. Approximately 5% of TG, 16.9% of FSW and 4.0% of MSM reported having sex with a PWID during the past year.

LAHORE

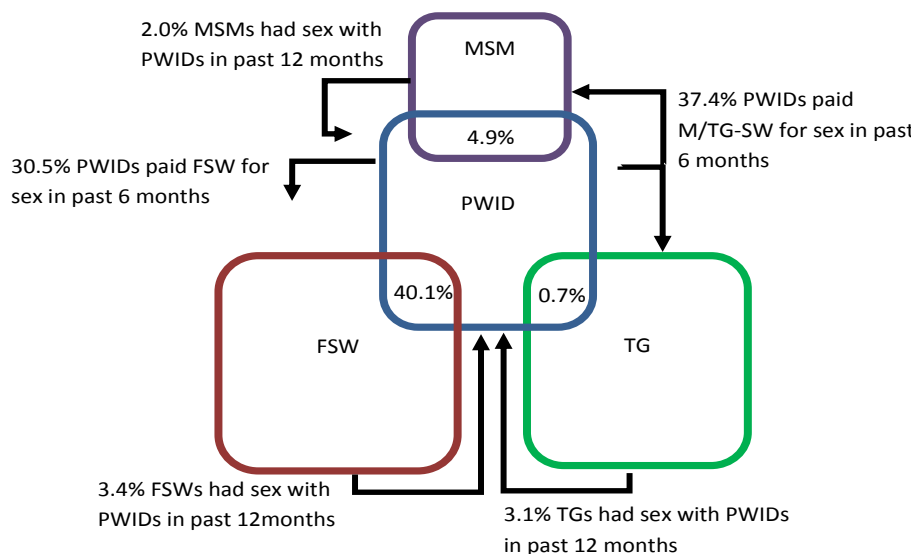


8.1 Lahore: Despite being a major city, the interactions reported by key populations in Lahore were limited. Injecting drugs was reported by 0.6% of MSMs and 1.4% of TGs in the past twelve months. Furthermore, 2.3% of MSM had sex with PWID, while 2.9% TG reported having sex with PWID in the past twelve months. It is important to note that FSWs and PWIDs were not included in Round 5.

8.2 Karachi: Karachi is the largest city of Pakistan and during previous mapping and IBBS rounds, the interactions between key populations have been significant. Approximately 5.0% of MSMs and 0.7% of TGs⁹ reported injecting drug in the past 12 months. Sexual interactions were reported between FSWs and PWIDs with 30.5% of PWID reporting having sex with FSWs during the past six months. Similarly 37.4% of PWIDs reported having paid a MSM/TG in the past 6 months.. Two percent of MSM, 3.1% of TGs and 3.4% of FSWs had sex with PWID respectively in past twelve months.

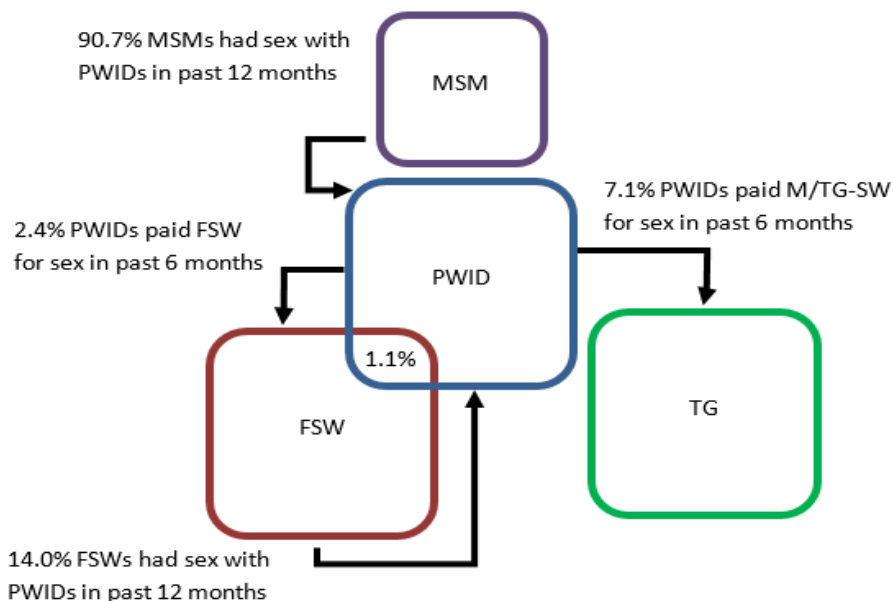
⁹ An unusually high proportion of FSWs reported injecting drugs in the past twelve months in Karachi, which needs validation and further investigation.

KARACHI



8.3 Peshawar: Significant sexual Interactions between key populations were noted in Peshawar. Almost all the MSMs interviewed reported having sex with PWIDs (90.7%) while 7.1% of PWIDs reported paying for sex with MSM/TG. Furthermore, 14.0% of FSW had sex with PWIDs during last twelve months and 2.4% of PWIDs reported paying to have sex with FSWs during the past six months. No overlap for injecting drugs was noted between MSMs and PWIDs, while only 1.1% of FSW reported injecting drugs during past twelve months.

PESHAWAR



8.4 Quetta: Injecting drugs were reported by 5.4% of TGs, 5.1% of MSMs and 9.3% of FSWs in the past twelve months. Furthermore, 41.7% of PWIDs paid for sex with MSM/TG while 48.9% reported paying for sex with FSWs during the past six months. Sexual interactions reported included 3.6% of TG, 54.9% of FSWs and 8.9% MSMs having sex with PWID within past twelve months.

QUETTA

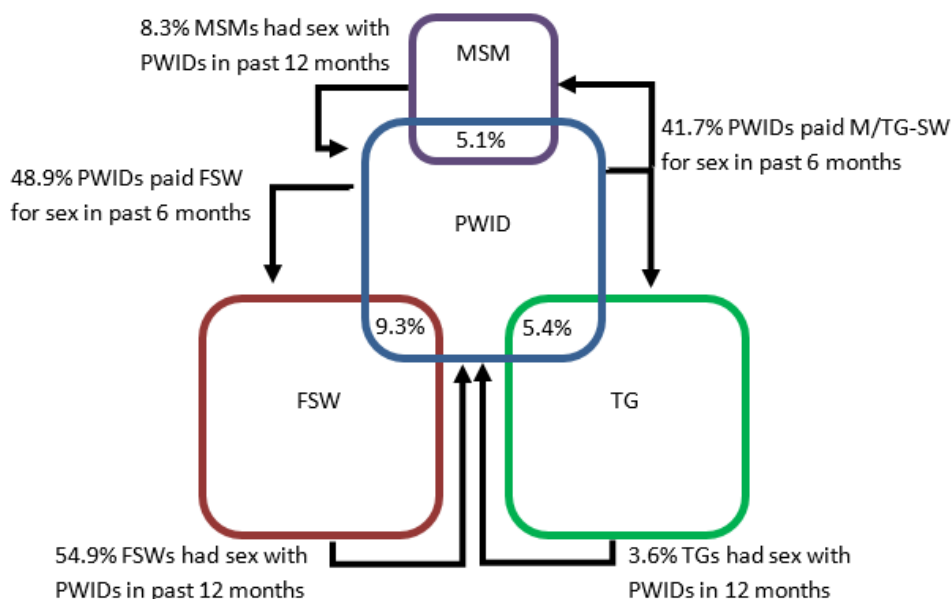


Table 8.1a shows the interactions between key populations in all other cities other than the provincial capitals. Significant sexual interactions between PWIDs and FSWs was noted in Hyderabad, Larkana, Nawabshah, Turbat, Bannu, Mirpurkhas and Sheikhpura. With respect to injecting behaviours, interactions were greatest in Bannu, Turbat, Mirpurkhas and Larkana.

Table: 8.1a Network interactions between key populations in Pakistan, 2016-17

Cities	MSMs injecting drugs in past 12 months	TGs injecting drugs in past 12 months	FSWs injecting drugs in past 12 months	MSMs who had sex with PWIDs in past 12 months	TGs who had sex with PWIDs in past 12 months	FSWs who had sex with PWIDs in past 12 months	PWIDs paid FSW for sex in past 6 months	PWIDs paid MSW/TG for sex in past 6 months
Multan	0.6%	0.4%	-	0.6%	0.4%	-	-	-
Faisalabad	0.6%	0.4%	-	0%	0.4%	-	-	-
Sargodha	0.3%	0%	-	0.3%	0.7%	-	-	-
Gujranwala	2.9%	0.4%	0.7%	2.2%	1.8%	0.3%	-	-
D.G Khan	0.7%	0.7%	0.3%	3.6%	7.6%	0%	-	-
Gujrat	7.2%	1.0%	5.6%	9.0%	1.9%	19.4%	-	-
Sialkot	1.0%	0%	0%	2.0%	1.0%	0%	-	-
Sheikhupura	3.1%	1.1%	5.5%	7.4%	5.9%	45.2%	-	-
Rawalpindi	2.0%	2.5%	0.3%	2.6%	5.0%	4.7%	1.8%	2.9%
Bahawalpur	1.4%	0.8%	1.1%	1.4%	1.5%	0.3%	24.9%	9.2%
Kasur	2.6%	0%	0%	6.0%	1.4%	5.5%	8.8%	11.6%
Jhelum	0%	0%	0%	0%	10.0%	0%	15.2%	8.6%
Larkana	10.6%	0.7%	0.5%	11.2%	1.1%	0.5%	52.5%	68.8%
Sukkur	2.0%	9.3%	5.5%	4.3%	9.3%	16.5%	8.0%	2.7%
Hyderabad	1.7%	4.6%	10.4%	6.0%	17.9%	25.5%	84.2%	63.1%
Mirpurkhas	8.0%	9.6%	0.5%	3.7%	8.3%	4.9%	40.9%	11.9%
Nawabshah	3.7%	0%	9.3%	2.3%	2.5%	3.8%	55.4%	49.8%
Bannu	20.0%	50.0%	0%	2.3%	17.5%	0.5%	39.8%	32.1%
Turbat	15.6%	18.2%	2.8%	16.1%	25.5%	25.0%	51.5%	38.6%

9. CONCLUSIONS AND RECOMMENDATIONS

Although the estimated HIV burden of 0.1% appears low and relatively stable, it masks the overall progress of HIV epidemic in Pakistan and doesn't elucidate the deadly trajectory of the epidemic. **Underneath a fairly steady and static HIV prevalence among general population, there is a proliferating epidemic which is continuously at a rise among key populations**, which form the main agents in transmission and fueling of the epidemic in the country.

There are no signs of the HIV epidemic reversing, declining, or even stabilizing among key populations. It has been almost a decade since we have been seeing an established concentrated HIV epidemic among people who inject drugs, which has now expanded to men having sex with men and Transgendered populations and we see a concentrated HIV epidemic among TGs and MSM as well. There are signs of the epidemic establishing among sex workers and if stays unchecked, will soon become concentrated in this population as well. Of concern is not only the increase in the HIV prevalence among various KPs, but also the number of sites with relatively advanced epidemics seen in this round. Data is suggestive that the epidemic is following a pattern which has been seen in most Asian countries such as Thailand, Cambodia, India, and parts of China etc., In a typical Asian epidemic, HIV appears initially as "sub-epidemics" in specific population groups and then spreads among these groups and to the general population through complex behavioral interactions. **Although the magnitude and timing of the spread of HIV has varied in various cities and provinces, the epidemic in Pakistan seems to follow a pattern which is similar to a rapidly propagating Asian HIV epidemic** which is not new to the region. **Sind suffers the most, where the epidemic was the noticed earlier, and now sub epidemics are seen in all key populations in most of the major cities investigated.** However, the sheer size of cities and key populations in Punjab doesn't make the region less important. Data is suggestive that it is mere a question of time, and if left unchecked, Punjab will soon face similar or even larger sex-driven HIV epidemics.

In the past few years, the HIV prevention response in Pakistan has undergone rapid transformations. Between the surveillance round conducted in 2010-11 and this current round of surveillance (2016-17), there has been a massive amendment of the HIV response. The decision to devolve the Ministry of Health, including various Public Health programs including the National AIDS Control Program has resulted in an indentation of the National HIV response in the country and has adversely effected the HIV response. **Lack of National coordination, data analyses and utilization at a National level, non-availability of National guidance and monitoring show a strong negative impact on the results of this surveillance round.**

Other than increasing levels of HIV, another **key finding of this round is the evidence of a fragmented HIV prevention system.** Thus risk behaviors prevail. A significant proportion of

PWID regularly share needles and syringes, sex workers continue to be involved in unprotected sex and same holds true for MSM and TGs. There are appreciable overlaps between PWID, sex workers and MSM which is an alarming feature of the group dynamics. **Overall, service delivery programs for key populations are inadequate, lack sufficient intensity and coverage and fail to reach a significant number of KP members.** Over years there has been no significant improvement in the coverage levels especially for sex workers, MSM and TGs. The coverage of PWIDs show slight improvement than what was reported in the previous round, however the prevention program is failing to reach coverage levels needed to impact the epidemic. Our experience with the epidemic has taught us that KPs will continue to avail targeted services if they are provided through strong community involvement, however improper strategies and program failures have impeded service scale-up, contributing to continued high rates of new HIV infections. **While all key populations have appreciable knowledge of HIV transmission and prevention, provision and availability of services with planned outreach for high coverage it is critical to convert this knowledge into safe practices.**

9.1 RECOMMENDATIONS

Based on the results and conclusions of this surveillance round, following could be suggested:

- **Scaling-up of services for key populations should be the key objective** of HIV AIDS response in Pakistan, to contain HIV epidemic at its present level and to prevent a further spread to other KP members and into general population. Prevention programs targeting key populations include multiple levels of intervention. At the country level or at a broader community level – also known as the Macro-level, the goal should be to rapidly establish an appropriate outreach program and provide basic services in locations that contain a high proportion of KPs. The broader macro-plan should include an overall program strategy, a minimum package of basic HIV prevention services and identification of particular geographic divisions within which services would be provided. Given the concentrated nature of the HIV epidemic in Pakistan, and knowing that the larger bulk of key populations inhabit in larger cities and towns, the most effective and cost-effective strategy would be to scale up evidence-based HIV prevention interventions targeting key populations in priority cities and larger towns for maximum impact. Scaling up would require programs to i) provide greater coverage both in terms of geography and numbers, ii) increase the range of services based on the needs of the target group and iii) improve the quality of services while ensuring minimum standards set for service delivery.
- The current **program design for each key population** needs to be re-visited. There are now more options than ever before to reduce the risk of acquiring or transmitting HIV. In contrast to patchy, individual services, combining prevention strategies are found to be most effective.

Combination prevention advocates for a holistic approach whereby HIV prevention is not a single intervention (such as condom distribution) but the simultaneous use of complementary behavioral, biomedical and structural prevention strategies. UNAIDS defines combination prevention¹⁰ as: "**rights-based, evidence-informed, and community-owned programs that use a mix of biomedical, behavioral, and structural interventions, prioritized to meet the current HIV prevention needs of particular individuals and communities, so as to have the greatest sustained impact on reducing new infections.**"

- **Enabling environments for risk reduction and protection against violence and exploitation** also facilitate the success of HIV prevention program. Thus, the development of enabling environments should be an objective of the program and should have well-defined strategies and activities. Addressing issues of stigma and discrimination as well as providing legal aid services to the communities are few of the structural components of the program that makes HIV prevention more effective.
- A focused primary HIV prevention approach coupled **with a multi-sectoral approach to achieve 90, 90, 90 through Fast Track approach** and end AIDS by 2030 is needed. Efforts should be made to close or atleast reduce the gap between the estimated numbers of HIV cases and the number of people on HIV treatment. We know that HIV treatment can not only extend the lifespan of people living with HIV, but can also prevent HIV transmission, therefore a combined effort for an early detection of the infection, followed by immediate HIV treatment for everyone diagnosed with HIV infection is needed.
- Pakistan needs to work on **a robust monitoring and evaluation system at national, sub-national and program level.** Program monitoring data can provide detailed information about the quality and intensity of interventions, including the proportion of those reached that utilize various program services. avail themselves of a variety of services. A significant number of countries have incorporated data from program monitoring efforts to provide information about progress and achievements, using unique identifiers to individually track service provision to key populations. A similar kind of an effort can be initiated in Pakistan, coordinated by the National AIDS Control program.
- Surveillance systems are not designed to answer all questions that emerge out of data analysis. Although surveillance provides information on current behaviors and disease prevalence, trends and progression of a disease, it does not meet all the needs of program

¹⁰ UNAIDS (2010) 'Combination HIV Prevention: Tailoring and Coordinating Biomedical, Behavioural and Structural Strategies to Reduce New HIV Infections'

planning and design. Moreover, it cannot provide answers to a number of questions related to why the behaviors or trends are the way they appear to be. On the other hand, surveillance data especially behavioral surveillance data, can identify key areas of research inquiry which demand attention. One of the use of the surveillance data collected in this surveillance round could be **identification and prioritization of key areas where more research and inquiry is needed**. Thus deeper analyses may be conducted to look into determinants of HIV transmission, predictors of service utilization as well as exploring reasons why various KPs don't utilize services despite having knowledge of such programs. These questions could be addressed **through more focused and complex analyses**, while at the same time might demand more qualitative data collection. Data could be analyzed from a gender perspective, thus providing guidance to programs through a more rigorous multi-sectoral approach.

9.2 LIMITATIONS

A few limitations of this data need to be highlighted and should be considered in the interpretation of possible trends.

- Some of the limitations apply generally to surveillance data and are related to the difficulties working with key populations. Thus, issues of misclassification of individuals and sampling imperfections should be kept in mind when results are considered.
- Another limitation to be mentioned is information bias which is another inherent problem with such kind of studies. Recall of exposures that took place in the past could lead to potential recall bias. In order to minimize recall bias, interviewers will be well trained in probing techniques, however the issues of recall cannot be ruled out especially for exposures such as number of clients, number of partners etc.,
- Information collected from the study subjects is entirely based on self-reported data. Although research has shown that self-reported data when obtained under non-threatening conditions is reliable, an association between self-reported HIV risk behaviors and socially desirable responding has been documented in the literature, which could be an issue for this study as well.
- One of the major limitation of this surveillance round is the under representation of non sex worker MSM in the study. While there exists a much larger number of non SW MSM the study was not able to reach such MSM and persuade them to participate in the study. Thus the overall MSM sample has an over representation of male sex workers and results should be interpreted with caution. Likewise MSM who operate on internet and through mobile apps are insignificantly represented in the sample.

9.3 FINAL THOUGHTS

Overall, this surveillance round has further improved our understanding of the distribution of HIV and of the underlying determinants of HIV transmission. However, there are lessons which need to be learned from the experiences of the past few years. We already knew that effective prevention programs among Key populations are needed to avert a wider epidemic. We had indications from the previous rounds that HIV is spilling over from PWIDs to MSM and sex workers and once it reaches epidemiological proportions in these KPs it will become even more serious. However, Pakistan continued investing most available resources on PWIDs and ignored launching major prevention programs for other key populations. With each passing year the epidemic has become more stabilized and severe, and is now showing its impact in key populations other than PWIDs.

The future of this epidemic will depend on the scope and effectiveness of HIV prevention programs for these populations and their sexual partners. We have sufficient information to target a response, backed up with this available scientific evidence. The AIDS response must become substantially stronger, more strategic and better coordinated, with accountability and transparency central to it. It requires a strong National commitment and leadership at both the national, provincial and sub-provincial levels. It needs a better National coordination and shift its paradigm from an episodic, crisis-management approach to a long term strategic response.

“We know with increasing certainty what disaster awaits if the response to AIDS continues to be inadequate. We also know how to strengthen that response in ways that will save millions of lives and billions of dollars. This plan is achievable, but only with strong leadership at every level of society. We know what needs to be done to stop AIDS. What we need now is the will to get it done¹¹”

¹¹ UNAIDS. 2006 report on the global AIDS epidemic: Executive summary. A UNAIDS 10th anniversary special edition. 2006