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Risky sexual behavior, knowledge of sexually transmitted infections and treatment utilization among a vulnerable population in Rawalpindi, Pakistan

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Abstract

As a part of a second generation surveillance, we investigated the sociodemographics, risky sexual behavior, knowledge of HIV and sexually transmitted infections (STIs) and treatment seeking behavior among a vulnerable population. A cross-sectional study preceded by mapping, was conducted in Rawalpindi, Pakistan during 2005. Subjects were recruited through snowball, time location cluster and cluster sampling techniques. Behavioral interviews were conducted with 203 female sex workers (FSWs), 101 males sex workers (MSWs), 101 Hijras (transgender men) and 200 injecting drug users (IDUs), who were deemed a vulnerable population for STIs. Among this population 136 (67%) FSWs were illiterate, 145 (71.4%) were married and entertained on average 23 clients per month. Consistent condom use during one month was reported by 34 (17%) FSWs. One hundred thirty-three (66%) FSWs had a knowledge of STIs, 69 (34%) suffered from STIs. MSWs and Hijras had the youngest average ages at 24.4(±6.8), 25.8(±5.9) and started sexual activity even at age 14.7, and 13.9 years, respectively. Consistent condom usage was as low as 3 (3.1%) and 4 (4%) among MSWs and Hijras. IDUs had lowest monthly income of US$ 69(±41) and had a predominant migratory pattern. Fifty (25.2%) IDUs shared a needle with the last injection. Though knowledge of STIs was lowest among IDUs, 61 (30.7%), however, all utilized the public health facility for their treatment. Difference between knowledge of STIs and educational levels among IDUs and Hijras were found to be statistically significant (p=0.015 and p=0.04, respectively). The present study indicates the knowledge of HIV/STIs is high among the vulnerable population but condom usage is very low.

Introduction

Sexually transmitted infection (STIs) are recognized as a major public health problem with severe medical and psychological consequences for millions of men and women (Agacfidan and Kohi, 1999). The number of STIs is increasing throughout the world despite diagnostic and treatment advances in recent years (Hashwani et al, 1999). Pakistan is no exception to this upward trend, reporting a 60% prevalence of syphilis among Hijras (transgender men) and 36% among male sex workers (MSWs) in the port city of Karachi (Bokhari et al, 2007). Recent evidence that STIs may facilitate the transmission of human immun0odeficiency virus (HIV) infection has focused attention on the problem (Simonsen et al, 1988). Pakisatn is currently a country with a low prevalence of HIV, but the presence of many risk factors for transmission, such as a high prevalence of STIs, unsafe sexual practices with low condom use put Pakistan in danger for the rapid spread of HIV. Realizing the importance of STIs and their potential to contribute to the HIV epidemic, the Provincial AIDS Control Program established forty STIs treatment centers at district level throughout the province. These centers provide syndromic management as per World Health Organization (WHO) guidelines and free treatment of patients. The government has also launched awareness and behavioral change communication (BCC) campaigns for both the general and vulnerable populations with financial assistance from the World Bank under the auspices of the enhanced HIV/AIDS Control Program.

The present study is a component of the project entitled "Canada-Pakistan HIV/AIDS Surveillance Project" (HASP) which aimed to establish Second Generation Surveillance (SGS) in Pakistan. The pilot phase of SGS was conducted in Rawalpindi and Karachi to assess the research protocols and methodologies to establish future surveillance in Pakistan. Major objectives of the study were to collect, analyze and disseminate accurate information regarding the prevalence of key risk behaviors among vulnerable populations in order to track the course of the HIV epidemic and to guide the development of prevention and care programs. The findings of the study will be used to develop advocacy material to improve service delivery programs to vulnerable populations and help eliminate stigma and discrimination, leading to improved health conditions.

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Materials and Methods

Study population and sampling methods:

The study was conducted within the municipal limits of Rawalpindi City in March 2005. the district of Rawalpindi is situated on the Potwar plateau next to Pakistan's capital city of Islamabad., in the province of Punjab. It is the military headquarters of the Pakistan Armed Forces and has a population of three million people.

The vulnerable populations studied were female sex workers (FSWs), male sex workers (MSWs), Hijras (transgender men), and injecting drug users (IDUs). Any male or female between 18 and 45 years old, who undertook sexual activity with a man or woman in return for money or other financial benefits, were included as FSWs, MSWs or Hijras. Person who were older than 18 years and injected drugs for non-therapeutic purposes in the past six months were included as IDUs. However, those who were incapable of understanding the information provided regarding the survey (eg, due to intoxication, dope sickness, or cognitively impaired, etc) were excluded.

The behavioral interviews were preceded by mapping in order to establish a sampling frame and determine the size of the study population. Mapping was comprised of two levels, during which the city was divided in ten zones using geographical landmarks. At level-one (L-1) information was sought from persons intimately acquainted with high risk individuals regarding their estimates and locations. This information was validated in level two (L-2) from persons engaged in high risk activity. Two hundred FSWs and IDUs each, and one hundred of Hijras and MSWs, were recruited on the basis of the proportionate representation of estimates in each zone. Within each zone subjects were recruited from the top ten most frequently mentioned spots. Due to fewer IDU and brothel-based FSWs, a "take all approach" was adopted. MSWs were recruited using snowball sampling and were interviewed in a hotel room specifically hired for this purpose. A list of Gurus (mentors) was prepared for each zone and those with at least 20 Hijras were selected. Gurus were requested to inform their chelas about the project and were interviewed at the place of their Guru. Home-based FSWs were recruited by employing snowball sampling and brothel-based FSWs through network operators. Both were interviewed either at their home or the place of the network operator. Street-based FSW were directly approached using time location sampling and were interviewed in the project vehicle. IDUs were recruited using time location sampling and were interviewed at a central location.

The protocol was reviewed and approved by the Ethical Review Board of the Public Health Agency of Canada, as well as in Pakistan by the local Ethical Review Board (HOPE). The study was designed to meet international ethical guidelines, specifically addressing informed consent and voluntary participation. Considerable effort was taken to maintain confidentiality of the participants. This included non-disclosure of the participant's identity and the use of a non-identifying coding system to track and link study data. The electronic data were password protected and only authorized officials had access to the data files.

Once informed consent was obtained a pre-tested color coded questionnaire was administered by a trained interviewer. After completion of the interview, participants were provided with information regarding modes of prevention and spread of infection, and available services, including primary health care. Data were checked for completeness and consistency on a daily basis and any inconsistencies or shortcomings of the data were removed. The participants of the study were compensated for their time lost due to their participation in the study.

Statistical methods and analysis:

The information was collected about sociodemographics, risky sexual behavior and knowledge of HIV/STIs, as well as STIs treatment utilization patterns. Besides the above variables information regarding needle sharing was collected from IDUs. For categorical variables simple percentages were used, and for continuous variables means and standard deviations were used. Pearson's chi square was applied to show the association between variables (at significance level of a=0.05). Data were analyzed with the program SPSS 11.5 (SPSS, Chicago, IL).

Results

Demographic characteristics (Table-1):

Of the commercial sex workers, MSWs had the youngest mean age of 24.4 (±6.8) years followed by 25.8 (±5.9) years among Hijras, and 30.6 (±8) years among FSWs and 34 (±8.6) years among IDUs. The lowest reported monthly income was US$ 69 (±41) in IDUs. The majority of FSWs (136, 67%) were illiterate. FSWs were more frequently married (145, 71.4%). Migration was prominent feature among IDUs and HIjras (131, 65.5% and 67, 66%, respectively).

Risky sexual behaviors (Table-2):

The mean ages at first sexual intercourse were 17.1, 14.7, and 13.9 years among FSWs, MSWs and Hijras, respectively. The mean numbers of clients entertained by

Table-1: Demographic profile of the vulnerable population of Rawalpindi.

	FSWs n=203	MSWs n=101	Hijras n=101	IDUs n=200
Age[a]	30.6±8	24.4±6.8	25.8±5.9	34±8.6
Monthly income (US$)a	142±133	99±67	105±42	69±41
Educational status				
Illiterate	136 (67%)	40 (39.6%)	49 (49%)	86 (43%)
Literate	67 (33%)	61 (60.4%)	52 (51%)	114 (57%)
Marital status				
Married	145 (71.4%)	24 (23.8%)	8 (7.9%)	106 (52.8%)
Un-married	21 (10.3%)	77 (76.2%)	91 (90.1%)	93 (46.7%)
Migration	86 (42.4%)	62 (61.2%)	67 (66%)	131 (65.5%)

a: Mean±SD.

Table-2: Risky sexual behavior among vulnerable populations of Rawalpindi.

	FSWs n=203	MSWs n=101	Hijras n=101	IDUs n=200
Age at first sexual intercourse a	17.1±2.5	14.7±2.2	13.9±2.2	-
Mean no. of clients per month	23	13	18	-
Consistent condom usage during last month	34 (17%)	3 (3.1%)	4 (4%)	50 (25.2%)

a: Mean±SD.

Table-3: Knowledge and health seeking behavior among vulnerable populations in Rawalpindi.

	FSWs n=203	MSWs n=101	Hijras n=101	IDUs n=200
Knowledge about HIV	166 (82%)	71 (70%)	79 (78%)	176 (88%)
Knowledge about STIs	133 (66%)	48 (49%)	60 (59.4%)	61 (30.7%)
Suffered from STIs during the last six months	69 (34%)	28 (28.6%)	24 (23.8%)	9 (4.5%)
Sought treatment	61 (84.4%)	22 (79%)	22 (88%)	9 (100%)
Having knowledge of STIs healer in the vicinity	24 (42%)	12 (60%)	17 (70.8%)	1 (0.5%)
Education vs knowledge of STIs	p=0.156	p=0.183	p=0.04	p=0.015

FSWs, Hijras and MSWs during last one month were 23, 18 and 13, respectively. Consistent condom usage during last one month was highest among FSWs (34, 17%) followed by HIjras (4, 4%) and MSWs (3, 3.1%). Risky behavior among IDUs was prevalent; 50 (25.2%) IDUs shared the needle with their last injection.

Knowledge of STIs and health seeking behavior (Table-3):

Knowledge of STIs was highest among FSWs (133, 66%) followed by Hijras (60, 59.4%) MSWs (48, 49%) and IDUs (61, 31%). Of the vulnerable populations FSWs suffered from STIs most frequently during last six months (69, 34%), followed by MSWs (28, 28.6%), Hijras (24, 24%) and IDUs (9, 4.5%). Of the vulnerable population who suffered from an STI, 61 (84.4%) FSWs, 22 (79%) MSWs, 22 (88%) Hijras, and 9 (100%) IDUs sought treatment. Of those who sought treatment for STIs, 24 (42%) FSWs, 12 (60%) MSWs, 17 (70.8%) Hijras, and 1 (0.5%) IDU got treatment from a physician. The differences between knowledge of STIs and educational levels among IDUs and Hijras were found to be statistically significant (p=0.015 and p=0.04, respectively).

Discussion

The data provide important insights into vulnerable groups in Rawalpindi that would benefit from specific interventions. Homosexuals and heterosexual commercial sex workers who practice unsafe sex are at risk for sexually transmitted infections (WHO, 1996). Earlier research focused on either the general population or sub-types and there was less research conducted

regarding vulnerable populations. Ghouri et al (1997) studied STDs among 2,013 men in the province of Sind, and Shah and Nasir (1998) profiled blood donors at a tertiary level hospital in Lahore.

However, risky behavior among vulnerable populations had not been studied in detail until a national study of reproductive tract and sexually transmitted infections (National RTI Study) commissioned by the National AIDS Control Program (NACP) in 2005 at Lahore and Karachi (Bokhari et al, 2007).

Our findings of younger MSWs (24.4 ± 6.8 years) and Hijras (25.8 ± 5.9 years) are similar to findings in the National RTI study (average ages of MSWs in Lahore and Karachi were 23 and 24 years old, respectively). Homosexual activities start at y0ounger ages, especially in street children who are sexually victimized or indulge in such activities. Subsequently, tey adopt commercial sex work in order to raise their income. This observation is consistent with our findings regarding age of initiation of sex among vulnerable populations (14.7 and 13.9 years old among MSWs and Hijras). Sexual activity at an early age increases the risk of acquiring HIV infection although this risk is higher among females due to immaturity of the genital tract. Monthly income was found to be lowest among IDUs (US$ 69±41). Regular employment opportunities are fewer in IDUs due to risky behavior, leading to low income. Their income goes to purchasing drugs and injecting equipment.

Of the vulnerable populations studied, FSWs were most frequently married (145, 71.4%) which is consistent with the National RTI study findings of 82.9% (350/422) in Lahore and 83.6% (337/403) in Karachi among FWs. The high percentage of married FSWs indicates the potential for rapid spread of HIV in the general population. The number of clients was highest among FSWs indicating higher risk for contracting HIV. The risk depends on the rate of new clients and on whether those clients have other partners. Consistent and correct condom usage plays a critical role in preventing the spread of HIV among people at high risk for contracting HIV (Halperin et al, 2004). Condom use was more common among FSWs, however condom use has inherent recall bias. In the national RTI study, 211 subjects in Lahore and 214 in Karachi were asked the same question regarding consistent condom usage during the previous week while having sex (vaginal or anal) with a one-time client and they reported frequency of 21.8% (46/211) in Lahore and 2.4% (5/24) in Karachi (Bohari et al, 2007). Condom usage among homosexual males were very low and similar findings were noted in the National RTI study, 5.4% (7/129) in Lahore and 3.1% (4/130) in Karachi. Needle sharing among IDUs was not common 25% (50/200) in Rawalpindi but was common in Quetta at 55.1% (59/107) (Zafar et al, 2003). Since Pakistan has inconsistent policies concerning safe drug injections, variations in needle sharing are expected in different locations. Furthermore, police crackdown on IDUs and drug peddlers resulting in non-availability of drugs is reflected in change in injecting practices. However, we tried to assess consistency of needle sharing behavior among IDUs.

Knowledge is an important pre-requisite for prevention of HIV transmission. "Heard about AIDS" reflects the efforts of information, Education and Communication campaigns. HIV knowledge among our participants was fairly high, especially among IDUs and FSWs. An earlier study conducted among 805 paramedics at a tertiary care hospital in Islamabad in mid 1993 revealed that 10% of subjects never heard of AIDS (Siddiqi et al, 1995). There is no comparable data available regarding vulnerable groups in Rawalpindi evaluating a knowledge of HIV. A cross-sectional study assessed HIV knowledge among 218 female health seekers at a mother and child health center at a tertiary care hospital in Islamabad, neighboring Rawalpindi, 210 (97.2%) had heard/knew about AIDS (Mazhar et al, 2001).

Neither the epidemiology of STIs nor a knowledge of STIs has been studied in any nationally representative survey in Pakistan except AIDS UNTIL RECENLTY (Ministry of Health, 1992). An attempt was made to evaluate the number of people aware of their infection and their health seeking behavior. Since questions about STIs have their limitations, respondents were asked whether they noticed a genital discharge or ulcer in the last six months. A knowledge of STIs was found highest among FSWs and reflects the effectiveness of media campaigns which work to increase recognition of STIs and their symptoms. The highest percentage of self reported STIs over a period of the last six months was found among FSWs (34%) in our study. The Natinal STIs study also reported the highest percentage of self reported STIs among FSWs (70%) in the last year. These findings are different from a previous study using a sample size of thirty sexually active, predominantly illiterate women in an urban community Karachi which found that 50% of women had no knowledge of STIs (Hashwani et al, 1999). A qualitative study conducted in rural Sindhi Province, Pakistan identified the community had some knowledge of AIDS. The study also pointed out that correct education should be given to the community to prevent misconceptions (Afsar et al, 2002). STI treatment seeking behavior was common in our study, which is contrary to the National RTI study findings in which almost half the respondents

did not seek care when they had symptoms in the previous year and less than one third sought medical advice. Our study indicates that a substantial proportion of sex workers, especially MSWs and Hijras, started having sex work at a young age. Younger sex workers were under-represented in these analyses. The present study indicates a knowledge of HIV/STIs was high among vulnerable groups but condom usage was very low, however, needle sharing was quite modest among IDUs. There is a need to conduct more research in order to understand factors contributing to the gaps between knowledge and behavior. This should help in understanding behavior and developing future interventions.

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