

Correlates and prevalence of HIV and sexually transmitted infections among Hijras (male transgenders) in Pakistan

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Summary: This study explored the role of Hijras (male transgenders) as a core group in Pakistan's HIV epidemic. Four hundred and nine Hijras underwent detailed behavioural and biological assessment. Our subjects were young (median age: 24 years), debuted sex early and used alcohol and drugs. Sex with men, women and other Hijras along with co-habitation/marriage were reported. Most (84%) had sold sex. These reported a median of four times and at least one regular client weekly. Few used condoms. Most (94%) could identify a condom, but 42% reported never needing one. Over two-thirds had correct HIV and protective knowledge. Many reported experiencing physical abuse or forced sex (40%) and sexual orientation-related discrimination (45%). Most (58%) had sexually transmitted infections (STIs) and 38% had multiple infections. The commonest infections were syphilis (50%) and gonorrhoea (18%). Care-seeking was mainly (87%) from the private sector. High STI prevalence, commercial sex, bisexuality and infrequent protective behaviours are described. Their communal living and wider sexual networks suggest a more central role for Hijras in Pakistan's HIV epidemic. Effective HIV/STI control programmes must take the above factors into account to enrich their programme content.

Keywords: Hijra, transgender, Pakistan, HIV, sexually transmitted, STI

INTRODUCTION

Hijras, males with female gender identity, have long been a part of the South-Asian culture.¹ In today's modernizing societies, they live in marginalized communities and participate extensively in the sex trade, which makes them an essential link in Pakistan's HIV transmission chain.^{2,3}

Transgender males who identify themselves as female are *zenanas*. However, in practice both society and health/prevention workers conflate the terms, calling all *zenanas* Hijras. True eunuchs are uncommon in Pakistan (<1–15%).^{1,4,5} Surgical castration is a major rite of passage, that is performed ceremoniously on the devoted few and enhances the castrate's status within the Hijras community.^{1,4,6}

Hijras live in tightly knit, seniority-based hierarchical communities led by *gurus* (teacher) who are more senior members of the community.¹ While *gurus* do not force disciples to sell sex, disciples seek the *guru's* sanction (often *post-facto*) for such acts and turn their income over to *gurus*.⁶ Income is generated by dancing, blessing births, begging and sex trade; although modernity has diminished the role of the first two.¹ Finally, Hijras may have sustained non-commercial sexual relations or commercial sex with a *chawa* (male non-Hijra).⁶ Hijra communities abhor inter-Hijra sexual relations and sex with women is considered rare (Abbas, personal communication), implying limited concordant relationships and sexual

networks. A previous study had found some syphilis and risk behaviours but no HIV among Hijras.⁴ No study has looked at other STIs among this group in Pakistan.

Pakistan's HIV epidemic is fully established among injecting drug users and is spreading into male sex workers (MSWs) and Hijras in many cities before involving female sex workers.^{2,7} HIV prevention programmes directed at Hijras with MSWs provide counselling, peer outreach, condoms and STI care and nearly all are funded by the Pakistani Government. According to the national HIV surveillance programme, there are an estimated 36,000 Hijras in cities with populations of 200,000 or more, comprising one-quarter of all sex workers nationwide.³ Since STIs may serve as surrogates of potential HIV transmission,⁸ linking STI prevalence with behaviours, sexual networks, prevention knowledge and practices of Hijras can provide insights for the design and placement of effective HIV control measures. Female gender identity, stigma, marginalization and communal organization distinguish Hijras from other men who have sex with men (MSM). These factors may influence personal protective decisions of Hijras and have implications for HIV/STI prevention programmes that are premised on advancing the individual's decision-making ability about sex behaviours to enhance personal safety.

We present a subanalysis of the Hijras data from a cross-sectional study,⁹ which was conducted to inform about the risk of HIV and STIs among sex workers, Hijras and injecting drug users in order to design effective prevention programmes. We explore sexual behaviours, relationships and prevalence of HIV and STIs among Hijras to better define their potential role in Pakistan's HIV epidemic.

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METHODS

We administered behavioural questionnaires and biological tests to 206 Hijras from Karachi and 203 from Lahore. All self-identified Hijras were eligible. Based on interviews with local informants, we assumed that at least 500 Hijras lived in each city. Using the formula: $n = z^2 \times (\text{prevalence}) \times (1 - \text{prevalence}) / \text{CI}^2$ a sample size of 170 in each of the cities was needed to detect 20% prevalence of any STI (α : 0.05, β : 0.8 and confidence interval [CI]: 6%). Interviews and examinations were conducted privately in a local clinic, rented for the purpose. Refusal rate was <5%. The methodology for recruitment, consent, ethical oversight, questionnaire design and biological testing has been described previously.⁹

The study was explained in local languages by the interviewer to individual potential subjects. Once the subject agreed to participate, separate verbal consents were obtained and recorded for the interview and biological samples (blood, urine and anal/genital swabs). Subjects who refused biological sampling were still included in interviews, if they so consented. Due to widespread illiteracy, a formal written consent was not possible for majority of subjects and therefore not pursued.

Subjects were compensated for their time at Rupees 400 (US\$ 7) as determined from local non-governmental organization (NGO) consultations and targeted interviews with subjects.

Data were analysed with SPSS[®] (SPSS, Chicago, IL, USA). Odds ratios were calculated from univariate analysis and all factors significant at $P < 0.2$ were included in multiple regression models.

RESULTS

Demographics

All respondents identified themselves as Hijras and zenanas. None were eunuchs and 98% were circumcised. The main demographic features are described in Table 1.

Sexual behaviours

Median age at first coitus was 14 years. Of the 105 who currently lived with a partner, 79 (78%) did so with a man, 14 (13%) with a woman and seven (7%) with other Hijras; 32 (8%) were currently

married. About 20% reported ever having sex with a woman and 7% within the past one year; with 15% condom use at last sex encounter. In the past month, 15% had paid a man to have sex with them. Nearly all (95%) reported having had sex with other Hijras. Most (84%) had sold sex within the past month and nearly all (99%) within the past year, at Rupees 100–200 per act (US\$ 1.6–3.3).

Fifty-one percent reported new clients (median: 1) and 68% regular clients (median: 3) within the past week. Eighteen percent reported using condoms during last sex with a one-time client (12% with receptive anal sex) and 15% with a regular client (13% with receptive anal sex); 83% had never asked a client to use condoms. Oral sex was performed with 39% one-time and 42% regular clients and never with condoms. Clients were businessmen (42%), drivers (35%), students (28%), police/military (25%), rickshaw-drivers (15%) and unemployed (10%). They were contacted at the roadside (53%), parks (29%), in the houses (29%), hotels (13%) or cinemas (11%).

About 40% reported having sex with non-paying partners (median: 2) in the past month. Condoms were never (89%) or infrequently (8%) used during the last such acts. Some (14%) had participated in group sex within the past year.

Although 79% used a lubricant some of the time, only 4% did so simultaneously with a condom. Oil (54%), saliva (30%), anti-septic cream (12%) and water-based lubricants (1%) were the most commonly reported lubricants during the last anal sex act.

STI/HIV prevention knowledge

Most (94%) could identify a condom, but 42% felt they never needed one. Only 1% carried a condom but 56% felt they could obtain one if needed. Most (68%) had heard of HIV and associated risk reduction with condom use (69%), avoidance of anal sex (73%) or needle sharing (87%).

Physical abuse

Within the past year 40% reported being physically abused or forced to have sex by either the police (49%: 71% in Karachi and 32% in Lahore) or clients (46%). In the same period 45% felt discriminated against and 19% were blackmailed due to their sexual orientation.

Variations between Lahore and Karachi

The behaviour patterns varied between the cities. More from Lahore (66% vs. 46%, $P < 0.023$) were lifetime residents of the city, reported alcohol use within past week (28% vs. 11%, $P < 0.001$), had paying female clients within past month (28% vs. 1% $P < 0.001$), cohabited (31% vs. 18%, $P < 0.003$), used condom with last sex act (16% vs. 9%, $P < 0.009$), had regular clients (80% vs. 53%, $P < 0.001$), participated in group sex (19% vs. 7%, $P < 0.001$) and faced discrimination (55% vs. 34%, $P < 0.001$). More from Karachi reported sex work as their main source of income (97% vs. 84%, $P < 0.001$). HIV knowledge was slightly better in Karachi but did not translate into better protective actions.

Clinical assessment of STIs

Current STI-related symptoms or examination findings were uncommon. Only 7% had inguinal lymphadenopathy, 1% had

Table 1 Demographic characteristics

	Karachi (n = 206)	Lahore (n = 203)	Total (n = 409)
Median age (years)	22	25	24
Median education level	Grade 2	Grade 1	Grade 1
No formal education (%)	49	52	51
Median monthly income (Pakistani Rupees)	3000	3250	3000
Median monthly income (US\$)	50	55	50
Sex work is the predominant source of income (%)	83	92	88
Used alcohol within past four weeks (%)	11	25	20
Used other non-injected drugs in the year (%)	50	36	43
Injected drugs within past year (%)	1	1	1
Sold blood during the past year (%)	1	1	1

urethral discharge and 3% had anal or genital sores or ulcers on examination. Subjects were asked if they knew of STI symptoms as surrogate of previous STIs, but such knowledge correlated with a current diagnosis of STIs only for burning urination ($P < 0.016$) and non-anal genital ulcers or sores ($P < 0.028$).

STI prevalence

One (59%) or more STIs (38%) were common. STIs prevalence varied considerably between the cities (Table 2). The probability of having an STI or HIV was predicted using sex behaviours or protective knowledge in separate multiple regression models. The sex behaviours model (R^2 : 0.074) showed that only having regular clients within the past week decreased probability of an STI or HIV (adjusted odds ratio: 0.85, 95% CI: 0.73–0.98). In this model having women or one-time male clients, condom use (with any category of clients or with any type of sex act), performing oral sex and paying for sex were not associated with STI acquisition.

A separate model (R^2 : 0.074) predicted the probability of STIs based on knowledge of HIV or STIs and their protective actions. Only awareness of the danger from shared needles was associated with the reduction in the probability of having an STI or HIV (adjusted odds ratio: 0.52, 95% CI: 0.27–0.99).

STI treatment and care-seeking

Main STI symptoms that led to care-seeking in the past year were genital sores (38%), anal (46%) or penile discharge (57%). Care was sought from private clinics (51%), traditional healers (10%), pharmacies (4%) or government clinics (4%). One-third (37%) never sought care. Median time to seeking care was two days and the treatment costs a median of Rupees 50 (US\$ 0.80).

DISCUSSION

We found infrequent condom use, bisexual lifestyles, universal commercial sex, high STI prevalence and dissociation between protective knowledge and actions and STIs among Hijras. These factors, their high numbers and frequency of unprotected sexual encounters and increasing HIV prevalence in some cities³

confirm Hijras as a core group in Pakistan.¹⁰ Female gender identity and their unique social organizational structure^{1,3,11} differentiate them from other MSWs or MSM with whom they are usually grouped by prevention programmes.

A significant minority of our subjects indulged in sex with women. Until now Hijras have been considered to have sex with men only and are, therefore, considered to have a limited role in HIV/STI transmission. Our findings broaden the scope of Hijras' sex networks by linking women into these networks. These findings may reflect transvestites living among Hijras, individuals still transitioning in their gender identity or lack of rigid boundaries for gender identity. However, harm-prevention programmes for Hijras must account for these individuals.

Nearly all Hijras engaged in commercial sex with per-act fees that place them at the bottom of the commercial scale for sex trade.² Most reported physical abuse, sexual violence or coercion, and discrimination due to their sexual orientation. These factors limit Hijras' ability to control the terms of protection during sex by either reducing the number of clients they must engage or by negotiating condom use.

Using standardized questions,¹² we found that appropriate prevention knowledge neither improved condom use nor reduced STIs. This may reflect Hijras' inability to control the terms of protection during sexual encounters or that knowledge alone may not lead to effective actions. Alternatively, these questions may be inadequate for the purpose. Our findings emphasize the need for better measures of protective knowledge, accurate predictors of actions and for programmes or enabling environments that empower Hijras to prevent HIV by effective preventive actions.

High STI prevalence (particularly syphilis) among Hijras in Pakistan is consistent with international experience.¹³ Nearly all syphilis was acute, likely reflecting our subject's young age and possibly their recent admission into this group. Frequent acute and multiple infections reflect very high infection incidence and persistence; suggesting high partner rate, participation in concordant sex networks (with other Hijras or a circumscribed group of clients who seek sex with Hijras) and/or lack of timely treatment of infections, against a backdrop of high infection prevalence. Further research should explore the contributions of sexual network dynamics, re-infections and lack of treatment among Hijras.

Syphilis, anal gonorrhoea and anal chlamydia, which are usually asymptomatic,^{14–16} accounted for most infections and may explain the infrequent current symptoms or positive examination findings despite very high STI prevalence. Symptoms drive care-seeking, and timely care-seeking for STIs may reduce STI transmission within a community by bringing clients into contact with those working on prevention. By the same logic, asymptomatic infections impede prevention programmes. Future interventions should address such asymptomatic infections through regular check-ups among clients of HIV/STI prevention programmes.

The study examined the sexual risk of Hijras to design effective HIV prevention programmes for them. One limitation of the study was that all self-identified Hijras were included. This may include zenanas with yet-to-mature gender identity, transvestites living among and acting like Hijras or an identity overlap as suggested by anecdotes of gurus *fathering* children. Inclusion of all of the above is functionally acceptable since Hijra harm-reduction interventions must reach all these individuals. Another limitation was that anal samples from Lahore were all negative. This was due to a single accident

Table 2 Prevalence of STIs and HIV and intercity differences

	Karachi, No. (%)	Lahore, No. (%)	P value	Overall, No. (%)
Any STI	152 (77)	79 (40)	<0.001	231 (58)
Multiple STIs	129 (66)	23 (12)	<0.001	152 (38)
Single STIs	23 (12)	56 (28)	<0.001	79 (20)
HIV	3 (2)	2 (1)	1.00	5 (1)
Acute syphilis	122 (62)	69 (36)	<0.001	191 (49)
Any syphilis	123 (62)	71 (37)	<0.001	194 (50)
<i>Neisseria gonorrhoeae</i> (any)*	61 (31)	8 (4)	<0.001	69 (18)
Urethral gonorrhoea	6 (3)	8 (4)	0.397	14 (4)
Anal gonorrhoea	58 (29)	0 (0)	<0.001	58 (15)
Anal chlamydia	36 (18)	0 (0)	<0.001	36 (9)
<i>Chlamydia trachomatis</i> (any)	36 (18)	3 (2)	<0.001	39 (10)
Urethral chlamydia	0 (0)	3 (2)	0.125	3 (1)

STI = sexually transmitted infection

*Includes three subjects with *Neisseria gonorrhoeae* isolated from both anus and urethra

with storage of anal samples at the laboratory in Lahore. While extrapolated data from Karachi suggest similarly high levels of anal STIs in Lahore, this cannot be stated definitively.

Our findings suggest high sexual risk among Hijras whose networks seem to involve men and some women. This enhances their significance in the overall HIV transmission scenario in Pakistan. Their communal living practices distinguish them from other MSWs and hence the approaches and messages that appeal to them may be different. Future research must explore their sexual networks and social structure as a means to deliver prevention interventions and improved ways to translate protective knowledge into effective actions and better outcomes.

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