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Street Life and Drug Risk Behaviors Associated with Exchanging Sex Among Male Street Children in Lahore, Pakistan

Vivian L. Towe, MSc, MA, Salman ul Hasan, S. Tariq Zafar, and Susan G. Sherman, PhD, MPH
Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

Abstract

Background—Throughout the developing world, children living on urban streets is a byproduct of economic deprivation. In Lahore, Pakistan, there are an estimated 5,000–7,000 street children.

Purpose—The study examined HIV risk behaviors and factors associated with exchanging sex among male street children in Lahore, Pakistan.

Methods—The survey was conducted from August 2003 to March 2004 among 565 registrants, ages 5–19, of Project Smile, a program that aimed to enhance the lives of street children in Lahore. We analyzed the frequency of and correlates of recent (past three months) sex exchange for money, drugs, or goods. Multivariate log-binomial regression was used to evaluate the independent effect of covariates on exchange sex.

Results—Approximately 40% of participants reported having exchanged sex during the past three months. In multivariate analysis, the factors associated with exchanging sex were living on the street for longer than 48 months (Prevalence Ratio [PR]=1.36, 95% Confidence Interval [CI]: 0.99–1.85), reporting ever having used drugs (PR=1.87, 1.10–3.16), cutting one's self (PR=1.66, 95% CI: 1.26–2.19), and having heard of HIV/AIDS (PR=1.36, 95% CI: 1.03–1.80) after adjusting for demographic and street life variables.

Conclusions—We found high rates of sex exchange among a sample of street children in Lahore, Pakistan. The finding that children who have heard about HIV/AIDS are more likely to exchange sex suggests that children at HIV risk talk about HIV, but accuracy of their conversations is unclear. Street children in Pakistan are in great need of HIV education and safe alternatives for generating income.

Introduction

Pakistan is a resource-poor country located in South Asia that has a history of political and economic instability. [1–3] Throughout the developing world, children living on the streets in urban settings is a byproduct of economic deprivation, as is common in Pakistan's largest cities. [4] These children are often forced out of their homes due to poverty, abuse, and conflict displacement. In Lahore, Pakistan, there are estimated to be 5,000–7,000 street children, many of whom engage in risky sexual and drug use behaviors in order to cope with and survive in their situation. [5,6]

Requests for reprints: Vivian L. Towe, 615 N. Wolfe Street, E-6534, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 21205, Tel: 443.570.9379, Fax: 410.955.1383, E-mail: vtowe@jhsph.edu.

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Familial economic deterioration is one of the main reasons children leave home to work on the streets to earn money. [7,8] As such, when family structures decline due to financial hardship, children can be subject to abuse, neglect, and hunger, which may drive them to run away from home, or they may be forced to work on the street to earn money for the family. [9] Street children around the world are considered to be at high risk of poor health due to the harsh realities of living on the street.

In a number of studies throughout Africa, Latin America, South Asia and North America, street children report physical and emotional distress resulting from police harassment [8,10,11], food insecurity and poor nutrition [12–14], violence perpetrated on them by gangs of street children and the general public [10,11,15], and sexual abuse. [7,11,16] It is likely that these daily exposures, in combination with a lack of access to healthcare, place street children at a higher risk of deleterious health outcomes compared to similarly aged non-street children. Previous studies have reported higher rates of suicide attempts among street youth [9,17], sexually transmitted diseases [18,19], infections or infectious disease symptoms [13,20], and mental health disorders. [21,22] Furthermore, numerous studies have examined street children's participation in child labor, which is largely characterized by hazardous work and long hours. [9,23] This includes activities such as shoe shining, selling inexpensive goods, scavenging, and begging as a last resort. [9,24]

Under such circumstances, homeless youth often employ avoidant coping strategies that often exacerbate poor health outcomes, such as using drugs to deal with their situation. [17,25] A number of studies among street children throughout the world have been reported to have similar patterns of drugs abuse. [5,7,25,26] Often they are found to use multiple drugs that are inexpensive and/or local to their setting, including alcohol, inhalants, and cigarettes. Generally, injection drug use is low. In addition to coping mechanisms, street children also engage in survival or exchange sex to pay for necessities or drug purchases, but condom use is low or nonexistent. [27,28] Both these coping and survival mechanisms put street children at high risk of HIV infection. For male street children in particular, studies have shown a higher prevalence of risky sexual behaviors among those who report engaging in survival than those who do not, including unprotected anal intercourse with male sex partners and having sex partners known to be positive. [29] It has also been shown that boys living on the street are more likely to be HIV-positive than girls living on the street, and that this may be related to more risky sexual and drug use behaviors. [30] Younger males engaging in exchange sex are less likely to use condoms during anal intercourse than older males. [31]

Although Pakistan has had incredibly low HIV rates compared to neighboring countries such as India [32], an HIV/AIDS epidemic has recently emerged. [33] Over the past several years, HIV/AIDS has moved from mostly expatriate Pakistanis to high-risk populations, such as injection drug users (IDUs). [33,34] Emerging epidemics have also been detected in high-risk sexual networks and sex workers. The documented practices of street children populations in many countries follow a similar pattern that suggests that street children are a group at high risk for HIV/AIDS. [7,25–28] According to the latest UNAIDS estimates, Pakistan has 85,000 HIV-infected individuals, or a prevalence of 0.1% among 15–49 year olds. [35] While the epidemic is in its nascent stage, a combination of poor healthcare facilities, a low literacy rate [36], and limited awareness about HIV/AIDS in the general population could fuel an epidemic quickly among high-risk groups, as IDUs and sex workers often serve as bridge populations for HIV infection into the general population.

The aims of this paper are (1) to examine the potential risk of HIV/AIDS among street children in Lahore, Pakistan, and (2) to examine the prevalence of and factors associated with recently exchanging sex among male street children in Lahore, Pakistan.

Methods

Study Population

The current study occurred among the first registrants of a project targeting street children in Lahore Pakistan, Project Smile (N=604). The study population has been previously detailed by Sherman et al. [5] Project Smile was established in August 2003 and aimed to enhance street children's quality of life by providing basic health care, nutrition, and clothing and reducing drug use and HIV-related risk behaviors associated with living on the streets. To this end, it provides social and medical services on a mobile *qinji* (motorcycle rickshaw) where street children gather. Services are provided eight hours a day, six days a week, at two fixed sites. Project Smile is sponsored by Nai Zindagi (New Life), a nongovernmental organization that has been providing drug treatment, drop-in centers, medical and social services, and harm reduction education to thousands of street drug users in five cities in Pakistan over the last decade. [37] Nai Zindagi provides services to any street children who approach them, but a vast majority of children seeking services from Nai Zindagi are boys (>95%). While both boys and girls living on the streets of Lahore are thought to be vulnerable to HIV infection, there were not enough girls in the study population to adequately characterize their risk, which is thought to be different from that of boys. Consequently, the data used in this study has been restricted to that of male street children. For more information about Nai Zindagi, see www.naizindagi.com.

Development of the Registration Form

The development of the registration form was based on multiple sources. For assessment of drug use behaviors, the Risk Behavior Assessment (RBA) [38] was the primary source and for sexual behaviors, questions were adapted from the NIMH Collaborative HIV/STD Prevention Trial. [39] The form was also based on previously developed intake forms that Nai Zindagi has used with adults attending their drop-in centers throughout Pakistan. Several questions were developed specifically for the street children, including children's perceptions of public attitudes toward them, reasons for cutting themselves, and reasons for initiating drug use, ascertained through open-ended questions with 50 street children.

Data Collection

This study was based on registration data that was anonymously collected from all street children who used any of Project Smile's services from August 2003 to March 2004. When street children approached the Project Smile *qinji*, a staff member administered a brief, anonymous registration form in Urdu (Pakistan's official language) or Punjabi (the local dialect in Lahore), which was then translated into English for data entry. Receipt of services by the children was not contingent upon participation in the survey. The response rate of those approached to register with Project Smile was 99%. The purpose of collecting the data was to enhance Project Smile's services, document the number of children who received services, and gather basic sociodemographic and risk behavior information for this understudied population. The registration form ascertained sociodemographic information, history of arrest, family history, sexual behaviors, and drug utilization patterns. A total of 565 participants, representing 93.5% of registered participants, provided complete responses to questions of interest for analysis in this study, as some interviews could not be completed based on what circumstances would allow. Before registering for Project Smile, all participants provided verbal assent after being informed about what type of data the registration form would collect and why it was being collected. Verbal assent was considered appropriate for this population, as most of the children could not write. This study was approved by the Johns Hopkins School of Public Health Committee on Human Research and Nai Zindagi's Institutional Review Board.

Correlates and Outcome Measure

Variables of interest from the registration form included sociodemographic characteristics; history of arrest and spending time in jail; recent (past month) sources of income; ever having had sex and with whom; perceptions of the public attitudes toward street children; knowledge of HIV/AIDS; knowledge of condoms and frequency of use; ever having used drugs; family drug use; and the prevalence, number of times, and reasons for ever having cut oneself. Participants were also asked whether they had ever used any of the following drugs by the specified route of administration: sniffed glue, smoked *charas* (hashish), or injected, smoked, or sniffed heroin. The continuous variables age, daily income, and education were divided into quartiles. Number of months spent on the street was split into two categories at the 75th percentile (greater than 48 months vs. less than 48 months). With regard to age of participants, because Project Smile's priority was to provide basic services to street children in the areas where they congregate, age was not specifically a criterion for receiving services. While we consider children to be individuals under the age of 18, the age range of participants seeking services from Project Smile was 5–19 years old. Only 2 individuals seeking services were age 19 and we decided to include their data in this study due to their obvious inclusion into the social networks of this population.

The study's dependent variable was self reporting of having engaged in exchange sex in the three months prior to being interviewed. "Exchange sex" was defined as having exchanged sex for food, shelter, entertainment, drugs, or money. In addition to the use of exchange sex as the dependent variable, participants were also asked questions about the individuals with whom they engaged in exchange sex to further explore sexual behavior patterns, though these were not used as dependent variables. Categories of individuals with whom they exchanged sex were (1) people with whom they were acquainted (acquaintances, friends, neighbors and relatives) or (2) strangers (sex workers, "someone who paid you," strangers, street drug users).

Statistical Methods

Analyses—Proportions are reported for categorical variables. Crude associations were tested using chi-square tests at the alpha level of 0.05 by outcome status. Simple frequencies for sexual behavior variables were also examined. Analyses were conducted on children who had data for all variables relevant to the study question (model-wise deletion), as missing data is thought to be missing completely at random (MCAR) due to interview circumstances. [40]

Because the outcome was not rare, multivariate log-binomial regression was used to evaluate the independent effect of covariates on exchange sex status. Adjusted prevalence ratios and 95% confidence intervals are reported. The criteria for choosing variables for the initial multivariate model included statistical significance ($p < .05$) and/or scientific merit. The reference category was no reported exchange sex during the past 3 months. Statistical analyses were performed using STATA (version 9.0, StataCorp, College Station, Texas).

Results

Univariate analyses are displayed in Table 1. Higher rates of exchange sex were reported by: 2 categories of older children (29.3% vs. 19.9% of 15–19 yr olds, $p < .0001$ and 21.4% vs. 15.5% of 14 year olds, $p = .007$), those making more than 70 rupees (US \$1.14) a day (30.1% vs. 19.9%, $p = .007$), those reporting more education (completed grades one or two, 30.6% vs. 23.8%, $p = .03$), those who reported living on the street for longer than 48 months (27.9% vs. 9.2%, $p < .0001$), those who reported ever having been arrested (63.3% vs. 42.6%, $p < .0001$), those who reported ever having cut themselves (52.4% vs. 22.3%, $p < .0001$) and those who had heard of HIV (41.9% vs. 21.7%, $p < .0001$). A majority of both children who reported exchange sex

(65.1%) and those who did not (80.4%) were only able to identify one or fewer modes of HIV transmission correctly.

Drug use was reported by most children. A higher proportion of children who reported exchange sex compared to those who did not identified themselves as ever doing the following: any drug (93.0% vs. 77.4%, $p<.0001$), inhaling glue (61.5% vs. 35.4%, $p<.0001$), smoking charas (67.7% vs. 48.2%, $p<.0001$), sniffing or chasing heroin (9.6% vs. 0.9%, $p<.0001$), and injecting any drug (3.1% vs. 0.3%, $p=.01$).

Sexual risk behaviors are displayed in Table 2. Of the 237 children who reported having any kind of sexual contact with others, 229 or 97%, also reported engaging in exchange sex. Exchange sex is subcategorized in Table 2 in two ways: (1) by the goods or services for which street children exchanged sex, and (2) by the types of individuals with whom they exchanged sex. Overall, a higher proportion of children ($N=565$) reported ever having exchanged sex for shelter, food or entertainment (40%) than for drugs (13.5%) or money (16.7%; data not shown). Within each category of goods or services, a vast majority of children who reported exchange sex identified any of their clients as being strangers (defined here as sex workers, “someone who paid you,” strangers, street drug users).

Further analysis shows that about 66% of children reporting exchange sex also reported having sex with adult males during the past 3 months compared to less than 1% of children who did not report exchange sex ($p<.0001$; data not shown). Overall, condom use during sexual intercourse was nearly non-existent, though more than half the children indicated that they had heard of condoms.

In multivariate analysis, the sociodemographic, behavioral and knowledge characteristics independently associated with children reporting exchange sex were: living on the street for longer than 48 months (Prevalence Ratio [PR]=1.36; 95% Confidence Interval [CI]:0.99–1.85), reporting ever having used drugs (PR=1.87; 95% CI 1.10–3.16), cutting one’s self (PR=1.66; 95% CI: 1.26–2.19), and having heard of HIV/AIDS (PR=1.36; 95% CI: 1.03–1.80).

Discussion

The aims of this paper were to examine the potential risk of HIV/AIDS among street children in Lahore, Pakistan and to identify what factors were associated with exchange sex. We focused on the outcome of exchange sex because it is considered one of the riskiest forms of sexual behavior associated with HIV infection. [33,41,42] The principal findings of this study showed that a very high proportion of street children in Lahore, Pakistan reported engaging in high risk drug use and sexual behaviors and other harmful coping mechanisms. Nearly all children reported some drug use, though injecting drugs was rare in this group. According to self-report, condom use was uncommon. This finding is not surprising and is similar to reported condom use in many other studies involving street children. [7,28–30] Given the lack of information available to this population regarding safe sex and the power dynamics inherent in a sexual relationship involving children and adults or older children, negotiating condom use is a near impossibility for any individual and, in particular, a child living in a setting of poverty, discrimination, and extreme vulnerability.

Another finding of this study is that many of the boys in this population have been living on the street for longer than four years, which is independently associated with reporting exchange sex. Furthermore, the ages of the boys in combination with the length of time on the streets suggest that many of them began sleeping on the streets and starting to engage in exchange sex at extremely young ages. This combination of factors highlights the brief window of opportunity health and social workers have to intervene with at-risk households in Lahore such that children do not feel the need to leave home at such young ages.

Exchange sex has been described in the literature as being a survival strategy among street children, used to acquire basic necessities, such food and money, and sometimes protection. [25] In addition to a high proportion of children reporting exchange sex overall, among those children reporting exchange sex, most reported having sex with adult males compared to almost none among those not reporting exchange sex. This suggests that many of the clients of children reporting exchange sex were adult males, and although HIV prevalence among men having sex with men (MSM) in Pakistan is unknown, they are a high prevalence group in other south and southeast Asian countries. [43,44]

In the results of the multivariate analysis, several factors that have been thought of as coping mechanisms for street children were found to be associated with having exchanged sex recently, including drug use and cutting oneself. It was previously discovered during formative research conducted by Nai Zindagi that street children commonly practiced cutting themselves on the arm with knives or razors. This practice has been shown to be a way that depressed individuals, particularly adolescents, deal with negative emotions and unwanted feelings. [45,46] The stress of surviving on the street, as evidenced by having to engage in exchange sex, may also be causing street children to use drugs, often characterized as an avoidant coping mechanism. Overall, the children are experiencing a highly traumatic and cyclical negative existence on the streets, in which multiple unhealthy behaviors, such as survival sex, foster other unhealthy responses (drug use and cutting oneself), all of which are likely to be augmented by severe mental distress.

Based on the high proportion of children engaging in risky behaviors associated with HIV/AIDS risk, such as drug use and exchange sex, street children in Pakistan need to be educated about ways to protect themselves from STDs and HIV/AIDS. The finding that children who have heard about HIV/AIDS are more likely to exchange sex suggests that children at high risk of HIV are already having conversations about the disease, but the accuracy of the information being circulated among them is unclear. Education is necessary, but without concurrently addressing the underlying reasons that street children engage in such behaviors, such education is unlikely to affect long-term change, especially in light of the difficulties faced by children on a daily basis. Any education meant to affect behavioral changes should be nested within an intervention that is aimed at improving the overall quality of life for these children. In numerous settings, programs designed to improve the lives of street children have addressed self-esteem issues concurrent with modifying behaviors through some combination of exposing children to fun activities, health education, and helping children to acquire life skills. [47–49] In terms of daily support services for street youth, peer/street outreach and drop-in centers are crucial to accessing and treating this hard-to-reach population. [50–52]

Nai Zindagi's street approach is the first in Pakistan to operate outside of conventional venues, such as orphanages and juvenile detention centers. The first step to breaking down mistrust between street children and organized agencies is to acknowledge the existence of and to work with at risk-youth on the streets where most actually live. Certainly, the study population described here is prepared to approach and use voluntary street services and therefore may also be more ready to receive HIV/AIDS education than those who have not previously used street services. It is unclear whether these children seek services from other agencies.

The study's results should be viewed in light of several limitations. The sample of children in this study is large, but it is still difficult to generalize these findings—many children who engage in anti-social or criminal behavior have been socialized to avoid social agencies and they would not have been included in this study. Furthermore, asking more detailed questions would help to clarify the specific mechanisms operating that put children at risk of harm on the streets, but due to the setting in which the interviews are conducted, longer surveys are impractical. In addition, because the study design was cross-sectional, it is not possible to infer

causality for exposures of interest found to be associated with the outcome of self reported exchange sex.

Another important limitation was the inability to separate out the analyses for children that exchanged sex for survival purposes (food and shelter) and for other reasons (e.g. entertainment). It is possible that children engaged in survival sex may have had a different risk profile than children exchanging sex for non-survival reasons.

In conclusion, the children in this study are well-positioned to receive HIV/AIDS and other types of prevention education. Accordingly, in addition to street outreach, Nai Zindagi has since expanded their programs to include an intervention for street children to improve their quality of life, to provide them tools to increase their self-esteem, and to educate the children about HIV/AIDS. The development of this program is based on other successful programs targeting street children in highly impoverished settings with similar goals. The results of the intervention will be reported in future articles.

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Table 1

Frequencies, unadjusted prevalence ratios for characteristics of street children and exchanging sex during past 3 months among 565 male street children in Lahore, Pakistan

	Exchanged sex* (N = 229)	Did not exchange sex* (N = 336)		
	N (%)	N (%)	P-value	PR (95% CI)
Sociodemographic				
Age				
5–11 years old	37 (16.2)	100 (29.8)	--	Ref
12–13 years old	76 (33.2)	117 (34.8)	0.06	1.46 (0.98–2.16)
14 years old	49 (21.4)	52 (15.5)	0.007	1.80 (1.17–2.75)
15–19 years old	67 (29.3)	67 (19.9)	<.0001	1.85 (1.24–2.77)
Education				
None	111 (48.5)	195 (58.0)	--	Ref
Grade 1–2	70 (30.6)	80 (23.8)	0.03	1.11 (1.01–1.22)
Grade 3–5	41 (17.9)	47 (14.0)	0.08	1.11 (0.99–1.25)
Grade 6–High school grad	7 (3.1)	14 (4.2)	0.79	0.97 (0.78–1.21)
Daily average income (rupees) [‡]				
0–45	49 (21.4)	91 (27.1)	--	Ref
45–50	53 (23.1)	106 (31.5)	0.77	0.98 (0.88–1.10)
50–70	58 (25.3)	72 (21.4)	0.11	1.10 (0.98–1.24)
>70	69 (30.1)	67 (19.9)	0.007	1.17 (1.04–1.31)
Life on the Streets				
Location you sleep most of time				
Family/Friend's house	23 (10.3)	42 (12.6)	--	Ref
On the street	185 (83.0)	261 (78.1)	0.35	1.06 (0.94–1.21)
Other	15 (6.7)	31 (9.3)	0.77	0.97 (0.81–1.17)
#of months living on street				
≤48 months	165 (72.1)	236 (70.2)	--	Ref
>48 months	64 (27.9)	31 (9.2)	<.0001	1.36 (1.22–1.51)
Ever been arrested	145 (63.3)	143 (42.6)	<.0001	1.22 (1.13–1.32)
Ever cut yourself	120 (52.4)	75 (22.3)	<.0001	1.37 (1.27–1.49)
General public sentiment toward you				
Supportive/sympathetic	109 (47.6)	186 (55.4)	--	Ref
Indifferent/hateful	120 (52.4)	150 (44.6)	0.07	0.99 (0.96–1.17)
Drug Utilization Patterns				
Ever used drugs				
ever inhaled glue	213 (93.0)	260 (77.4)	<.0001	1.31 (1.18–1.47)
ever smoked charas	141 (61.5)	119 (35.4)	<.0001	1.28 (1.19–1.39)
ever smoked charas	155 (67.7)	162 (48.2)	<.0001	1.21 (1.12–1.31)
ever chased or sniffed heroin	22 (9.6)	3 (0.9)	<.0001	1.64 (1.35–1.99)
ever injected heroin or other pharmaceutical	7 (3.1)	1 (0.3)	0.01	1.61 (1.15–2.26)
Ever smoked cigarettes	211 (98.1)	260 (97.4)	0.58	1.09 (0.81–1.47)

	Exchanged sex* (N = 229)	Did not exchange sex* (N = 336)		
	N (%)	N (%)	P-value	PR (95% CI)
HIV Knowledge				
Heard of HIV/AIDS?	96 (41.9)	73 (21.7)	<.0001	1.26 (1.16–1.38)
# HIV transmission routes identified				
0–1	149 (65.1)	270 (80.4)	--	Ref
2–3	45 (19.7)	23 (6.8)	<.0001	1.36 (1.20–1.54)
4	35 (15.3)	43 (12.8)	0.12	1.10 (0.98–1.23)

* During past 3 months

‡ 1 PKR = US\$0.02

Some frequencies may not add up to the total due to missing data.

Table 2

Sexual behaviors of 565 male street children in Lahore, Pakistan

	N (%)
Ever had any kind of sexual contact with others	237 (41.9)
In the past 3 months, had sex with [‡] :	
Men	149 (62.8)
Women	85 (35.9)
Boys	190 (80.2)
Ever heard of condoms	365 (68.7)
In past 3 months, frequency of condom use	
Never	151 (30.7)
Sometimes	9 (1.8)
Often	2 (0.4)
Always	1 (0.2)
In past 3 months, had exchange sex	229 (40.5)
In exchange for [*] :	
Shelter, food or entertainment	226 (98.7)
With any strangers ^{‡,1}	154 (68.1)
Drugs	68 (29.7)
With any strangers ^{‡,2}	48 (70.6)
Money	84 (36.7)
With any strangers ^{‡,3}	48 (57.1)

[‡]Frequency among children reporting any kind of sexual contact with others.

^{*}Frequency among children reporting exchange sex in the past 3 months.

[‡]Strangers (as opposed to acquaintances) = sex worker, "someone who paid you," stranger, street drug user. These were responses provided by the children.

¹Frequency among children reporting exchange sex for shelter, food or entertainment.

²Frequency among children reporting exchange sex for drugs.

³Frequency among children reporting exchange sex for money.

Some frequencies may not add up to the total due to missing data.

Table 3

Adjusted prevalence ratios for characteristics of street children and ever having exchanged sex among 565 male street children in Lahore, Pakistan

	Adjusted Prevalence Ratios (95% CI)	P-value
<48 months living on the street	1.0 (Ref)	--
>48 months living on the street	1.36 (0.99–1.85)	0.05
Never used drugs	1.0 (Ref)	--
Ever used drugs	1.87 (1.10–3.16)	0.02
Never cut yourself	1.0 (Ref)	--
Ever cut yourself	1.66 (1.26–2.19)	<0.0001
Never heard of HIV/AIDS	1.0 (Ref)	--
Heard of HIV/AIDS?	1.36 (1.03–1.80)	0.03