

KNOWLEDGE OF HIV, SEXUAL BEHAVIOUR AND CORRELATES OF RISKY SEX AMONG STREET CHILDREN IN KINSHASA, DEMOCRATIC REPUBLIC OF CONGO

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ABSTRACT

Context: Homeless children are at risk of getting many diseases, including sexually transmitted infections (STI). The number of street children is on the rise in the Democratic Republic of Congo (DRC), while very little is known about their health problems.

Objectives: To determine knowledge of HIV (transmission and prevention means), sexual activity, exposure to HIV-prevention services, and to identify correlates of risky sexual behaviour (not having used a condom at first or last sexual encounter and/or having multiple sexual partners over a 12-month period) among street children in Kinshasa.

Results: At the time of the survey, most participants (85.8%, 95% CI = 83.5–88.1) were sexually experienced and 55.8% had their first sexual intercourse when they were already living on the streets. The median age at first sexual activity was 14.3 years for males and 13.5 years for females. Compared to males (median number of sexual partners = 1), females tended to be more involved with multiple sexual partners (median = 12). Condoms were used less at the first sexual encounter (20.2%; 95% CI = 17.3–23.1) and the pattern of condom use depended on the type of sexual partners (61.1% at last sexual encounter with a paid/paying partner and 23.1% at last sexual encounter with a non-paid/non-paying partner). In males, sleeping in a NGO-provided night shelter (OR = 0.47; 95% CI = 0.27–0.79), and having had the first sexual intercourse while living on the streets (OR = 0.55; 95% CI = 0.35–0.88) were protective of risky sexual behaviour, while a history of drug use (OR = 3.00; 95% CI = 1.46–6.18), and being aged 20 to 24 years (OR = 1.59; 95% CI = 1.00–2.55) increased the likelihood of displaying risky sexual behaviour. In females, not knowing where to get a condom (OR = 0.04; 95% CI = 0.005–0.29), having started sexual activity when living on the streets (OR = 0.10; 95% CI = 0.01–0.73) and not having an income-generating activity (OR = 0.09; 95% CI = 0.01–0.44) were protective of risky sexual behaviour.

Conclusion: Street children need to be regarded as a high-risk group for acquiring HIV. The potential benefit of providing homeless youth with night-shelters should be explored more since this could be an opportunity to integrate risk-reduction programmes that take into account all problematic behaviors such as risky sexual behaviour and drug use.

Keywords: Street children, correlates, risky sexual behaviour, the Democratic Republic of Congo

Introduction

The homeless children phenomenon is an increasing problem in most big African cities including Kinshasa, the capital city of the Democratic Republic of Congo (DRC). Street children are at particular risk of picking up a variety of diseases. They are faced with many hazards and often suffer from diseases of the skin and of the respiratory tract (1-3). Hepatitis B and C and sexually transmitted infections (STI), including HIV, are frequent among these children, as are psychological disorders (4-8). This high vulnerability to diseases is not only explained by the fact that street children are not protected against bad weather and that they eat badly (9-10) but also by their dangerous behaviors and practices. Alcohol intake and drug use are common in this group (11-12) as is unprotected sex (13-16). The lack of knowledge of the means of STI prevention and low access to health services may increase their vulnerability (17-18). It is estimated that more than 20,000 children are living in the streets of Kinshasa (19). The street children phenomenon in the Democratic Republic of Congo (DRC) was exacerbated by the two successive wars (1996–1997 and 1998–2003) that took place in the country and the aftermath of the economic difficulties. Although a few non governmental organizations (NGO) are working with homeless youth, providing them with night-shelters, with There are anecdotal reports of homeless girls having babies, suggesting that they are practicing unprotected sex and therefore might incur a high risk of getting STI including HIV/AIDS.

The present study aims to answer the question whether or not homeless children living on the streets in Kinshasa are at high risk of getting HIV/AIDS, and among other correlates of risky sexual behaviour discussed in the literature, what are likely to be the most important determinants in the context of DRC.

Methods

The present study was conducted in March 2005 in Kinshasa, the capital city of the DRC where lives an estimated population of 10 millions. The study was conducted as part of the first national behaviour survey surveillance (BSS) in the country.

Study sites

During daytime, homeless children hang out in public places such as markets, railway and bus stations, and business centres. At night, they sleep in market places, in abandoned cars or in unguarded buildings. A small proportion sleeps in NGO-provided shelters.

A list of NGOs working with homeless children was obtained from the Ministry of Social Affairs, which coordinates all matters pertaining to vulnerable children. NGOs members were asked to provide information that was then used to map places where homeless children could be found around the city during day-time.

Kinshasa is a city that extends from east to west for 40 kilometres. To obtain a representative sample of homeless children gathering places, the city was empirically subdivided into three zones, namely East, Centre and West. In each zone, a list of markets, bus stations, railways stations and business centres was constructed. From the lists, two sites were identified and were selected in each zone. These were the biggest market, the railway station, the main bus station, or the biggest business centre.

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Participants' selection

The study participants were pre-screened by NGO members and, to be eligible for the interview, respondents had to be aged between 15 to 24 years and had to be living or sleeping on the streets or in a specific accommodation site for homeless children. In each zone, eligible participants present at a selected site from 8 am to 6 pm during the day the survey was planned were solicited to give an interview. To avoid interviewing a participant more than once, no incentive was given. Participants were asked if they had already given a similar interview in the two or three preceding days. A selected study site was visited only once. Interviews were conducted by 24 experienced young adults of both genders who had received a specific one-week training based on the present research. A standard questionnaire, adapted from the template designed by Family Health International for BSS was administered (20). The questionnaire was translated from French into the local language (Lingala) and from the local language into French and was pretested with 72 homeless children in the sites not selected for the study. Necessary revisions, specifically changes in questions wording and questions ordering, were made before the actual field work.

Measures

The survey collected the following information: 1) Socio-demographic characteristics of participants (age, gender, having attended school and the number of schooling years successfully completed, the duration of time since living on the streets, the main source of income, and the place where they generally spend the night). 2) Intoxication (alcohol intake or drug use at least once during the preceding four weeks). 3) Knowledge of the means of transmission and the ABC HIV/AIDS prevention means (Abstinence, Being faithful to one HIV-negative sexual partner and consistent Condom use during casual sex) and misconceptions such as "a healthy looking person cannot transmit HIV", "HIV can be transmitted by witchcraft or by a mosquito bite". 4) Sexual activity and sexual behaviour (having had penetrative sex, age at first sexual encounter and where the child was living at the time of the first sexual intercourse, condom use during the first and the last sexual encounter, the number of sexual partners during the 12 months preceding the survey).

Street children who have had sex with more than one sexual partner or have not used a condom during the last sexual encounter with a paid or non-paid/paying partner during the preceding 12 months were considered as practicing risky sexual behaviour. 5) History of symptoms suggestive of STI (foul genital discharge or genital ulceration). 6) Access to HIV/AIDS prevention programmes and services (exposure to voluntary counselling and testing (VCT), access to health care when experiencing symptoms suggestive of STI, and exposure to a health educator providing HIV/AIDS prevention messages).

Analysis

Means and their standard deviations, median and interquartile ranges (IQR) were computed for the quantitative data. Comparisons were made using the Student's t-test, the z-score or Chi-square when appropriate. Separate multivariable analyses using logistic regression were used to identify correlates of risky sexual behaviour in males and females. Predictors were age, time elapsed since living on the streets, place the street children were spending a night at the time of the survey, education, age at first sexual intercourse, place where the street children were living at the time they had their first sexual intercourse, having an income-yielding activity, knowledge of the ABC HIV/AIDS prevention means, drug use, access to condoms, and exposure to VCT.

Ethics

Permissions to conduct the study were obtained from the Ministry of Social Affairs and from the City officials. Before conducting the interview, a consent statement in local language was read to each participant to obtain his verbal consent which was witnessed by the accompanying NGO member. The Kinshasa School of Public Health Internal Review Board approved the study proposal. Confidentiality was assured, as personal identifiers were not recorded on the study questionnaire.

Result

A total of 1 541 street children were pre-screened during the survey period. Of the 903 who were eligible, 880 (188 females and 692 males) agreed to be interviewed, resulting in a 97.5% response rate.

Socio-demographic characteristics

The socio-demographic characteristics of the respondents are displayed in Table I. The median age for the females and the males was 17.5 years (IQR = 4) and 18.0 years (IQR = 3) respectively. Most of the study participants had lived on the streets for at least one year (96.9%), with more than half (55.3%) having been on the streets for five years or more. Almost all participants were involved in an income - yielding activity. The sources of income for males and females were different. Males were mostly selling goods on the streets (23.7%), were serving as porters (20.7%) or were stealing (17.6%), while females (63.3%) were principally selling sex. Up to 70% of participants had dropped out of school at the primary level. Marijuana use (81.9%) and alcohol consumption (63.5%) were common in both genders.

Knowledge of means of HIV prevention and misconceptions about HIV transmission

Knowledge of HIV/AIDS and exposure to prevention services are displayed in Table 2. Although most participants (98.5%; 95% CI = 97.6 - 99.3) had heard of HIV/AIDS, their knowledge of the ABC prevention approach means was moderate. Condom use was the most cited means of prevention (83.2%; 95% CI= 80.7 - 85.6). Misconceptions about HIV transmission were common,

as 37.5% (95% CI = 34.3 – 40.7) reported that HIV could be transmitted through a mosquito bite or through witchcraft (44.0%; 95% CI = 40.7 – 47.3).

Approximately 62% of participants (61.8%; 95% CI = 58.5-65.9) have recently been exposed to an HIV/AIDS-specific message. Only 20.8% (95% CI = 18.1-23.4) had been exposed to interpersonal communication about HIV/AIDS, and 23.0%, more females (51.1%) than males (15.3%), have experienced VCT ($p < 0.01$).

Table 1: Socio-demographic characteristics of the street children

	Males (n = 692)	Females (n = 188)	All (n = 880)
Age	%	%	%
15–19 yrs	60,8	69,7	62,7
20–24 yrs	39,2	30,3	37,3
Education	(n = 692)	(n = 188)	(n = 880)
none	3,2	8,5	4,3
Primary school	70,8	62,8	69,1
Secondary school	26,0	28,7	26,6
Time on street	(692)	(188)	(880)
≤ 1 year	9,7	6,9	9,1
2–4 years	32,8	45,7	35,6
≥ 5 years	57,5	47,3	55,3
Main source of income	(n = 692)	(n = 188)	(n = 880)
Trade	23,7	13,8	21,7
Car cleaning	3,8	0	3,0
Helping passengers at bus station	11,1	0	8,8
Begging	9,4	1,6	7,7
Stealing	17,6	2,1	14,3
Porter	20,7	0	16,3
Survival sex	0	63,3	13,8
Sweeping the market place	10,8	0	8,5
Other	4,8	21,3	8,3
Others	14,5	4,9	12,2
Sleeping site	(n = 692)	(n = 188)	(n = 880)
On street/in abandoned car	64,5	67,4	65,1
In an NGO shelter	20,1	15,8	19,2
Cemetery	0,6	5,4	1,6
Market place	8,1	1,1	6,6
Others	6,7	9,6	7,5
Alcohol/drug consumption	(n = 692)	(n = 188)	(n = 880)
Alcohol	64,9	58,5	63,5
Marijuana	84,5	72,3	81,9
Cocaine	4	2,7	3,8

^a multiple answers

Table 2. Knowledge of means of transmission and prevention of HIV and exposure to HIV prevention services

	Males (n = 692)	Females (n = 188)	All (n = 880)
	%	%	%
Having heard of HIV/AIDS	98.7	97.8	98.5
Knowledge of prevention means			
Condom use	80.9	91.5	83.2
Reducing number of sexual partners	4.3	4.3	4.3
Being faithful	17.8	12.2	16.6
Avoiding casual sex	18.2	11.2	16.7
Abstinence	23.7	12.8	21.4
Avoiding piercing objects	14.0	22.9	15.9
Avoid blood transfusion	1.3	3.7	1.8
Misconceptions about HIV/AIDS			
One can get HIV through sharing meals	18.5	13.8	17.5
One can get HIV through casual contact	7.4	3.7	6.6
A mosquito bite can transmit HIV	39.6	28.2	37.5
One can get HIV through sorcery	40.5	56.9	44.0
A healthy looking person can transmit HIV	75.1	72.9	74.7
Exposure to HIV prevention services			
Having seen something on HIV in the last six months	61.5	63.4	61.8
Exposure to peer educator	19.2	26.6	20.8
Exposure to VCT	15.3	51.1	23.0

Table 3. Sexual behaviour, patterns of condom use and experience of symptoms suggestive of STI.

	Males (n = 692)	Females (n = 188)	Total (n = 880)
Have had sexual intercourse	82.7	97.8	85.8
Median age at first sex	14.38	13.56	14.14
Where living at first sex	(n = 572)	(n = 184)	(n = 756)
With parent	44.6	41.3	43.8
When living on the street	55.1	58.2	55.8
Unknown	0.4	0.5	0.4
Estimated age of first sexual partner	(n = 572)	(n = 184)	(n = 756)
Older	25.2	92.2	41.5
Same age	24.1	4.4	19.3
Younger	48.4	0	36.6
DNK*	2.3	3.3	2.5
Condom use at first sex	(n = 572)	(n = 180)	(n = 752)
Have had sex in the last 12 months	16.8	31.0	20.2
Median number of paid sexual partners	(N = 572)	(N = 184)	(n = 640)
Median number of non-paid sexual partners	80.8	96.7	84.6
	(n = 462)	(n = 178)	(n = 640)
	1	12	2
Condom use at last paid sex	(n = 308)	(n = 149)	(n = 457)
	51.3	82.1	61.1
	(n = 356)	(n = 103)	(n = 459)
Condom use at last non-paid sex	24.7	17.5	23.1
STI-suggestive symptoms	(n = 462)	(n = 178)	(n = 640)
Foul genital discharge	11.9	12.9	12.2
Genital ulceration	22.7	18.0	21.4
Discharge or ulceration	26.6	24.2	25.9
	(n = 123)	(n = 41)	(n = 164)
Having sought medical help at appropriate health facility	50.4	53.7	51.2

*Do not know

Sexual behaviour

The sexual behaviour patterns of participants are displayed in Table 3. The majority of the boys (82.7%; 95% CI = 79.9-85.5) and most of the girls (97.8%; 95% CI = 95.7-99.8) reported being sexually active. The median age at first sexual encounter was 14.3 years (IQR = 3) for the boys and 13.5 years for the girls (IQR = 2). More than half of the participants (55.8%; 95% CI = 52.5-59.1) had their first sexual experience while already living on the streets. In general, most of the sexually active girls (92.2%; 95% CI = 88.2-96.1) reported that their first sexual partner was older than they were, while

the opposite was the case for the males. The median number of sexual partners of the females over the preceding 12 months was 12, while it was one for the males. Only 20.2% (95% CI = 17.3-23.1) of participants used a condom during their first sexual intercourse, with more females (31.0%) than males (16.8%) reporting having done so ($p < 0.01$). Condoms tended to be used more during paid sex (61.1%; 95% CI = 56.6-65.5) than during non-paid sex (23.1%; 95% CI = 19.2-26.9).

Table 4: Logistic regression for correlates of risky sexual behaviour

	Males				Females			
	n	OR adjusted	95.0% C.I.		n	OR adjusted	95.0% C.I.	
			Lower limit	Upper limit			Lower limit	Upper limit
Time elapsed since living on streets								
1 year or less	44	1			12	1		
2–4 years	170	.701	.301	1.635	82	.109	.001	8.665
5 years or more	358	1.219	.519	2.860	86	.471	.008	27.004
Place street children were living when they had their first sexual intercourse								
In a household	255	1			74	1		
On the street	317	.557	.352	.882	106	.106	.015	.733
Education								
None	14	1			15	1		
Some primary	393	1.454	.447	4.728	113	.991	.097	10.066
Some secondary	165	2.413	.702	8.298	52	1.265	.110	14.550
Access to a condom source								
< 5 minutes	.400	1			116	1		
> 5 minutes	135	.861	.527	1.406	48	.198	.038	1.025
Do not know where to get them	37	.615	.286	1.322	16	.038	.005	.294
Sleeps								
On street	475	1			157	1		
In a night shelter	97	.470	.276	.798	23	.466	.071	3.053
Marijuana/cocaine use								
No	41	1			27	1		
Yes	531	3.006	1.460	6.188	153	.691	.102	4.688
Spontaneously cite the ABC HIV prevention means								
No	459	1			158	1		
Yes	113	.947	.569	1.576	22	.290	.051	1.650
Age of respondents								
15–19 yrs	311	1			123	1		
20–24 yrs	261	1.598	1.001	2.550	57	.834	.114	6.115
Age at first sexual intercourse								
< 15 yrs	327	1			131	1		
15 yrs or more	245	1.295	.835	2.007	49	1.363	.203	9.161
Have an income-generating activity								
Yes	543	1			144	1		
No	29	2.472	.781	7.827	36	.090	.018	.441
Have been counselled and tested for HIV								
Yes	89	1			91	1		
No	483	1.369	.778	2.409	89	.672	.139	3.250

Prevalence of symptoms suggestive of sexually transmitted infections (STI) and access to health care and to HIV/AIDS prevention services

Among the sexually experienced participants 25.9% (95% CI: 22.5–29.3) had experienced symptoms suggestive of STI during the preceding 12 months. Genital ulceration (21.4%) was twice as frequent as was foul genital discharge (12.2%). Only 51.2% (95% CI = 43.5–58.8) of street children who had presented symptoms suggestive of STI had sought health care at an appropriate health facility. Half of the female participants (51.1%; 95% CI: 43.9–58.2) had been exposed to VCT, while this was the case for only 15.3% of males (95% CI: 12.6–17.9).

Correlates of risky sexual behaviour

The logistic regression analyses are displayed in Table 4. Eighty percent of the sexually experienced street children were categorized as displaying a risky sexual behaviour. Risky sexual behaviour correlated with different factors across genders. In males, risky sexual behaviour correlated with the place the street children were sleeping at the time of the survey, drug use, older age, and where the street children were living at the time they had their first sexual intercourse. Street children who reported that they were sleeping in an NGO-provided shelter were less likely to experience risky sexual behaviour (OR = 0.47; 95% CI = 0.27–0.79), as were those who had their first sexual intercourse when already living on the streets (OR = 0.55; 95% CI = 0.35–0.88). Drug users were three times more likely to have experienced risky sexual behaviour (OR = 3.00; 95% CI = 1.46–6.18). Compared to teenagers, those aged 20–24 years were one and a half times more likely to display risky sexual behaviour (OR = 1.59; 95% CI = 1.00–2.55).

In females, risky sexual behaviour was not determined by not knowing where to get a condom, not having an income-generating activity, and having had the first sexual intercourse when living on the streets. Compared to those who could get a condom within less than five minutes of walk, those who did not know where to get one were less likely to have experienced risky sexual behaviour (OR = 0.03; 95% CI = 0.005–0.29) as were those not practicing an income-generating activity (OR = 0.09; 95% CI = 0.01–0.44), and those who have had their first sexual intercourse when already living on the streets (OR = 0.10; 95% CI = 0.01–0.73).

Discussion

This study shows that many street children practice risky sexual behaviour and that risky sexual behaviour is associated with some of the variables examined. Among males, risky sexual behaviour is determined by older age, drug use, where the child was living at the time he had his first sexual intercourse and not sleeping in an NGO-provided shelter. In females, having started sexual activity when living on the streets, not knowing where to get a condom, and not having an income generating activity appear to be protective of risky behaviour.

As already reported in the literature, most street children in Kinshasa were typically less educated males

(21–23) and had been living on the streets for several years. The longer the time on the streets, the more difficult it will be for them to get away from it and the more likely they will practice risky behaviour (24). In addition, they will not have the necessary professional skills to use when they become adults (21).

Although the children have already heard about HIV/AIDS, their knowledge on the subject is incomplete and inexact as already documented elsewhere (25). Even if 60.8% of participants have recently heard or seen a message on HIV, it is possible that it was from a less effective source, since only 20.8% have been involved in an interpersonal communication which is widely recognized as one of the most effective strategy to induce behaviour change (26). The fact that street children are less knowledgeable of HIV, and often fail to translate knowledge into low risk behaviour (27) points to the need for designing genuine communication strategies when targeting this specific group.

Risky sexual behaviour is determined by different factors in males and females. This reinforces the idea of conducting gender-stratified analyses when exploring correlates of risky behaviour (28). Older age, drug use, not sleeping in a night shelter and not having had the first sexual intercourse on the streets emerged as determinants of risky behaviour. The explanation might be that older street children, those who have been longer on the streets, are not spending the night in NGO-provided shelters, and tend to use drugs more, which increases their likelihood of being involved in risky behaviour (29, 30). Sleeping in a NGO-provided shelter and starting sexual activity when already living on the streets seem to be protective of risky sexual behaviour (31). This suggests that night-shelters could be providing an environment not conducive to having sex or that street children who are offered a shelter could be more exposed to HIV-prevention messages since some NGOs in addition to offering night-shelters do also provide health education to street children who come in contact with them. However, it is not clear why starting sexual activity when living on the street is protective of risky behaviour. This might be related to a street culture that somehow influences the sexual behaviour of newcomers on the streets (30, 32).

In females, not knowing where to get a condom, having started sexual activity when living on the streets and not having an income-generating activity were protective of risky sexual behaviour. Females not knowing where to get a condom might be those not involved in risky behaviour, and those not having an income-generating activity might be the ones not involved in survival sex, which is the most cited source of income among females (33).

Most participants were already sexually experienced, and have had multiple sexual partners while not using condoms consistently. This pattern of condom use may explain the high rate of symptoms suggestive of STI observed in this group. Since STI are known to increase the risk of HIV, this indicates that the prevalence of HIV might be high in this group as already reported by other authors (7, 34).

Condom use depended on the category of sexual partner. It has been reported that condoms are used more during paid than during non-paid sex (35). Condom being

used less with non-paying/non-paid partners suggests that those partners might be the ones that could transmit HIV to this group or get it from them. Non-paying/non-paid partners could be their main sexual partners, or persons they have sex with deliberately or coercively (36). Identifying them and targeting them with appropriate risk reduction programmes could reduce the risk of HIV among homeless youth. Males participants reported having had younger sexual partners while females' sexual partners tend to be older than themselves. This is likely to increase the likelihood of street children for acquiring HIV, since older partners are likely to have a longer sexual history and therefore are more likely to be infected (37).

Our findings do have some limitations. Our study design and recruitment procedure cannot guarantee that the sampled street children are representative of all the street children living in Kinshasa. Recall bias cannot be ruled out, as the majority of children had dropped out of school at the primary level, leading to an overall lower education level in the group. As in all self-reported behaviour studies, we also cannot rule out socially desirable answers to sensitive questions on sexual behaviour, which might have introduced biases of unknown magnitude and direction. However, it has been reported that bias introduced by self-reported data does not mask key associations (38).

Conclusions

Street children appear to be a group at high risk of contracting HIV. Those aged 20 years or more should be targeted more specifically with HIV prevention messages and services.

Programmes targeting street children should consider including detoxification, should take into account the specific needs of specific age groups and should use the interpersonal communication strategy as this strategy seems to be effective (39).

Sleeping in shelters being protective of risky behaviour suggests that this strategy should be explored more since it is likely to be an opportunity to provide homeless youth with an integrated risk-reduction programme, taking into account HIV and all other problematic behaviors, such as risky sexual behaviour and drug use which are frequent among homeless youth (40).

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