

# Factors Associated with Vulnerability to HIV and Sexually Transmitted Infections among Street Children in Selected Towns of Ethiopia, 2016

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## Abstract

**Background:** The problem of street children is becoming a world crosscutting issue since these children exist in every part of the world and become a worldwide problem. **Objective:** To assess factors associated with vulnerability to STIs and HIV/AIDS among street children in selected towns of Ethiopia. **Methodology:** Community-based cross-sectional descriptive study design was used on the three selected towns of Ethiopia from June-September, 2016. A total of 360 street children were selected, using snow ball sampling technique. Data were collected using pre-tested interviewer-administered questionnaire. Logistic regression was used to analyze the data. **Results:** A total of 360 (97.8%) respondents were included in this study. Among them, 167 (46.4%) of them had practiced sexual intercourse and out of these, 137 (82%) had started having sex at the age of 16 years old. Out of these, 61 (36.53%) of them started to get daily basic needs whereas 54 (32.3%) of them were forcefully raped on the street. Only 53 (59.6%) had used condom consistently and 83 (49.7%) had conducted survival sex within the last 12 months. Children on the street or chewing khat or consumption of alcohol had more vulnerability to STIs and HIV about 2.532 (1.57 - 4.08), 2.32 (1.11 - 4.80), 4.18 (2.31 - 7.55) times respectively. But those enrolled in school were about 0.40 (0.25, 0.64) less likely vulnerable than their counterparts. **Conclusion:** Street children are at a higher likelihood of vulnerability to STIs and HIV. Intervention targeted multilevel approach such as re-integration with their family, life skills training, sexuality education, creating income-generating activities and information education about STIs and HIV should be considered.

## Keywords

Street Children, Vulnerability to STIs and HIV/AIDS, Ethiopia

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## 1. Introduction

The problem of street children is becoming a world crosscutting issue since these children exist in every part of the world and become a worldwide problem [1]. Even though counting street children is impossible, the number of them sometimes dramatically increases because of various reasons such as poverty, AIDS pandemic, internal tribe conflict and rapid urbanization. These victims drift to live on street where they are exposed to violation, physical or sexual abuse and exploitation which make them prone to STIs and HIV/AIDS [2]. Recent information shows that the number of street children is estimated to be 150 million [3]. According to recent reports in Ethiopia, over 4 million children are anticipated to live under particularly difficult circumstances and there are approximately 500,000 - 700,000 street children in the country [4] [5].

In Ethiopia, HIV/AIDS is a leading cause of orphanhood. According to PEPFAR report of 2012, there were an estimated 5.4 million orphans, of this 855,720 were orphaned due to AIDS and they are left vulnerable [6] [7]. Orphaned and vulnerable street children are also far more likely to move from being affected by the virus to becoming infected and facing other risks. The prevalence of HIV and STIs among street children greatly exceeds that of general children's population [5] [8] [9]. The prevalence of ill health practices, different forms of abuses and sexually transmitted diseases have been found to be higher among street children as compared to children living at home [10] [11]. Understanding the magnitude of vulnerability of street children to STIs and HIV/AIDS and its determinant factors were the aim of this research. Identifying the determinant factors was pivotal to address the needs of street children and to mitigate the negative outcomes for this underprivileged group. However, there is scantiness of information in this regard in Ethiopia. Therefore, the purpose of this study is to investigate factors associated with street children vulnerability to STIs and HIV. From these results it could be provided that direction for designing targeted HIV/AIDS and STIs intervention/prevention for street children in selected towns of Ethiopia.

## 2. Methods and Materials

The study was conducted in three towns of Ethiopia, namely, Addis Ababa, Adama and Hawassa, which are populated and industrialized areas where most street children drift to. Community-based cross-sectional descriptive study design was used in this study. All street children (both children on the street and children off the street) who are between 10 - 18 years of age were recruited by snow ball sampling technique. The sample size was determined by the previous

study prevalence of STIs and HIV among street children with 31.4% and 95% confidence interval, 5% margin of error and 10% allowance of non-response rate. Based on this, the calculated sample size was 368. Then the sample size was proportionately allocated based on the estimated number of street children in the three selected towns. On this basis, 20 were taken from Adama, 25 from Hawassa and 323 from Addis Ababa. A close-ended structured questionnaire was used for data collection. The questionnaire was adapted from previous literatures and other questions were extracted from standardized questionnaires. The questionnaire was prepared in English and then translated by formal translators into local language (Amharic) then back to English to check for consistency of meaning. Finally, the local language version was used for data collection. Respondents who were initiated into early sexual intercourse were considered as vulnerable to STIs and HIV.

Data were collected by 10 BSC nurses and two trained supervisors facilitated data collection. For all data collectors and supervisors, three days of intensive training was given on the objective, procedure and content of the study.

In this study Children off the street are those who are working or begging on the street but living with their parents or visiting their parents regularly. Children on the street—these children live and work on street without any kind of control or assistance from parents or relatives. Both economically and socially engaged in street life.

The questionnaire was pre-tested to assess for clarity and sensitiveness of questions and understanding of study subjects at Ambo town, Oromia region on 5% of sample size. Based on the pre-test result, some modifications were done. Data were checked for completeness by principal investigator of the study on a daily basis.

Data were first entered to Epi Info 7 and exported to IBM SPSS statistics version 20.0 to clean and analyze data. Frequencies, proportions, mean and summary statistics were used to describe parameters investigated. Association between dependent and independent variables were assessed and presented, using odd ratios and confidence intervals. Logistic regressions were done to control for possible confounders.

Ethical clearance for the study was received from both University of Ibadan, Nigeria and Ethiopian Public Health Institute. A formal letter was written to all authorities and permission was secured at all levels. Since the study subjects were younger than 18 years written assent was taken from study subjects and consent was taken from care givers or guardians after explaining the purpose and procedure of the study. Participation in the study was voluntary and information collected kept strictly confidential.

### **3. Results**

A total of 368 children on the street and children off the street were interviewed and 360 (97.83%) respondents were included in the analysis. Eight respondents

were excluded from the analysis for a gross incompleteness.

#### 4. Socio-Demographic Characteristics

As it is shown in **Table 1**, 266 (73.9%) of respondents were male and the mean age of respondents was  $15 \pm 2.1$  years with a minimum age of 10 years and a maximum age of 18 years. Out of the total respondents, 222 (61.7%) of them were children on the street and 138 (38.3%) of them were children off the street. Of the total respondents, 99 (27.5%) were from Oromo and 94 (26.1%) of them were from Amhara tribe. Over all 207 (57.5%) respondents were orthodox and 73 (20.3%) were protestant followers. Currently, a high proportion of 220 (61.1%) of street children were not in school or had discontinued their education. A majority of 260 (72.2%) of the street children highly participate in hard work while 44 (12.2%) of street children participate in survival sex.

**Table 1.** Socio-demographic characteristics of street children in selected towns of Ethiopia, 2016 (n = 360).

Characteristics	Frequency	
	Number	%
Sex		
<b>Male</b>	266	73.9
<b>Female</b>	94	26.1
Age (mean $15 \pm 2.1$ )		
<b>10 - 14 years old</b>	153	42.5
<b>15 - 18 years old</b>	207	57.5
Ethnicity		
<b>Oromo</b>	99	27.5
<b>Amhara</b>	94	26.1
<b>Tigre</b>	18	5.0
<b>Gurage</b>	28	7.8
<b>Wolayita</b>	71	19.7
<b>Sidama</b>	39	10.8
<b>Others</b>	11	3.1
Religion		
<b>Orthodox</b>	207	57.5
<b>Protestant</b>	73	20.3
<b>Catholic</b>	19	5.3
<b>Muslim</b>	54	15
<b>Others</b>	7	1.9
Educational status		
<b>Never attend school</b>	81	22.5
<b>Grade 1 - 6</b>	209	58.1
<b>Grade 7 - 8</b>	46	12.8
<b>Grade 9 - 10</b>	23	6.4
<b>Grade 11 - 12</b>	1	0.3
Category of street children		
<b>Children on the street</b>	222	61.7
<b>Children off the street</b>	138	38.3

## 5. Vulnerability of Street Children to STIs and HIV/AIDS

Sexual relationships among the study subjects were rampant. Out of the total respondents, 167 (46.4%) of them had practiced sexual intercourse and of this, 137 (82%) had started sexual intercourse before the age of 16 years old. They pointed the reasons to start sex early, 61 (36.53%) of respondents started to get daily basic needs, whereas, 54 (32.3%) of them were forcefully raped on the street while 29 (17.4%) for social connection in their community. Of those who ever had sex, 44 (26.3%) had sex with commercial sex workers. More than half, 89 (53.3%) of those who had started sexual intercourse used any method to protect themselves. About, 53 (59.6%) used condom, 17 (19.1%) douching and 12 (13.5%) withdrawal non protection method. In contrast 78 (46.7%) of respondents did not use any protection method. The reason for this were, 23 (29.5%) their partner did not agree to use whereas 19 (24.4%) did not have money to buy any protection methods.

On their first sexual exposure, 45 (26.9%) under the influence of alcohol alongside their partners and 32 (19.2%) of children were under the influence of alcohol. About 83 (49.7%) of respondents conducted survival sex within the last 12 months. Of all those who practiced sex, 70% had a history of multiple sexual partners in the last 12 months. Half of the sexually active respondents 79 (47.3%) practiced anal sex with two or more partners during their life time on the street. All over, 89 (24.7%) of respondents reported, they had been affected by one or more of STIs symptoms.

## 6. Factors Associated with Street Children's Vulnerability to STIs and HIV/AIDS

This study shows that, almost all of the study participants (100%) had one or more misconceptions about STIs, and HIV/AIDS ways of transmission and prevention. Of the total respondents, 89 (24.7%) said that mosquito bites can transmit HIV/AIDS from person to person while 208 (57.8%) noted that a woman with HIV/AIDS can transmit the virus to her newborn infant through breastfeeding. About, 130 (36.1%) of the respondents did not perceive as they were at risk of contracting STIs and HIV/AIDS.

Substance use was relatively high among the study subjects. As it is shown in **Table 2**, overall, 151 (41.9%) respondents chewed khat, 161 (44.7%) have smoked, chewed or sniffed any tobacco products and 162 (45%) of the study subjects have drunk alcohol beverages on a daily basis.

## 7. Predictors of Vulnerability in Street Children to STIs and HIV/AIDS

The multivariate analysis in **Table 3** shows that, children on the street were about 2.53 (1.57, 4.08) times more likely vulnerable to STIs and HIV than children off the street. Street children who were enrolled in school were about 0.400 (0.249, 0.644) less likely vulnerable to STIs and HIV than those who were not enrolled in school. Street children who have been given something for the sake

**Table 2.** Substance use behavior of street children in selected towns of Ethiopia, 2016 (n = 360).

Characteristics	Frequency	
	Number	%
Have you ever chewed khat		
<b>Yes</b>	151	41.9
<b>No</b>	209	58.1
Have you ever smoked chewed or sniffed any tobacco product		
<b>Yes</b>	161	44.7
<b>No</b>	199	55.3
Have you ever drunk any alcoholic beverage		
<b>Yes</b>	162	45
<b>No</b>	198	55
Have you ever taken glue		
<b>Yes</b>	92	25.6
<b>No</b>	268	74.4
Have you ever taken any cannabis		
<b>Yes</b>	60	16.7
<b>No</b>	300	83.3

**Table 3.** Predictors of ever had sex among street children in selected towns of Ethiopia, 2016 (n = 360).

Variables	Ever had sex		COR (95% CI)	p-value	AOR (95% CI)	p-value
	Yes	No				
Category of street children						
<b>On street</b>	127 (57.2%)	95 (42.8%)	3.28 (2.08 - 5.16)	<0.001	2.53 (1.57 - 4.08)	<0.001
<b>Off street</b>	40 (29%)	98 (71%)	1.00		1.000	
Current-enrolment in school						
<b>Yes</b>	41 (29.3%)	99 (70.7%)	1.00	<0.001	0.40 (0.25 - 0.64)	<0.001
<b>No</b>	126 (57.3%)	94 (42.7%)	3.24 (2.06 - 5.08)		1.000	
Forced to have sex						
<b>Yes</b>	79 (74.5%)	27 (25.5%)		<0.001	5.28 (3.16 - 8.82)	<0.001
<b>No</b>	88 (34.6%)	166 (65.4%)	5.52 (3.32 - 9.17)		1.000	
Given something to have sex						
<b>Yes</b>	89 (75.4%)	29 (24.6%)	6.45 (3.92 - 10.62)	<0.001	3.34 (1.89 - 5.95)	<0.001
<b>No</b>	78 (32.2%)	164 (67.8%)	1.00		1.000	
Ever chewed khat						
<b>Yes</b>	112 (74.2%)	39 (25.8%)	8.04 (4.99 - 12.96)	<0.001	2.32 (1.11 - 4.8)	0.026
<b>No</b>	55 (26.3%)	154 (73.7%)	1.00		1.000	
Ever drunk any alcoholic beverage						
<b>Yes</b>	121 (74.7%)	41 (25.3%)	9.75 (6.01 - 15.82)	<0.001	4.18 (2.31 - 7.55)	<0.001
<b>No</b>	46 (23.2%)	152 (76.8%)	1.00		1.000	

of sex were about 5.28 (3.16 - 8.82) times more likely susceptible to STIs and HIV than their counterparts.

In multivariate analysis, after controlling socio-demographic factors, alcohol and khat use were independently associated with sexually active respondents. Street children who had ever chewed khat and those who used alcoholic beverage were about 2.32 (1.11 - 4.80) and 4.18 (2.31 - 7.55) times more likely vulnerable to STIs and HIV/AIDS than their counterparts respectively.

## 8. Discussion

The study examined the vulnerability of street children to HIV and STIs. Findings of the study showed that about half of the street children were vulnerable to STIs and HIV. There is widespread sexual intercourse among street children and outsiders. Concurrently, different studies showed that there are rampant sexual activities among street children and with others in the community [3] [5].

In this study, (46.4%) of street children were proven to be involved in sexual intercourse which is lower than the previous study conducted among street children in Democratic Republic of Congo (85.5%) and Egypt (67%) [12] [13]. This variation could be due to the difference in the age group of the study subjects, as this study included younger (10 - 18 years old). The other possible explanation for this difference might be that, in this study, children off the street were study subjects. Perhaps, they have to go back home every night, this prevents early sexual initiation.

In this study, (36.53%) of the study participants started sex to get daily basic needs, whereas, 32.3% were forcefully raped on the street while 17.4% of participants started for social connection in their community. However, the study conducted in DRC shows that the reason for sexual activity among male is for enjoyment (74.3%) and female (56.4%) are influenced by peer pressure [14].

Multiple sexual partners are very common among the study subjects. In the past 12 months, 70 % sexually active street children had sex with two to five partners on the average which is similar to the findings in DCR 69.2% male and 53.8% female practiced [15] [16]. In this study about, (47.3%) respondents had practiced anal sex, in agreement with this finding, a study conducted in Kathmandu and Kenya reported that 39% of boys and 12% of the females experienced anal sex [17] [18].

This finding shows, 12.2% of street children participated in survival sex in the last 12 months. This percentage is lower compared to the study conducted in Kenya, where 53% male and 64% female participated in begging and survival sex. This difference may be due to the inclusion of the children off the street who go back home for the night and who got support from different institutions, hence delaying sexual initiation. This report showed that 24.7% of participants have experienced one or more of STIs symptoms which is comparable with the study conducted in other part of Ethiopia, where 24.8% had a history of STIs [16] [19].

This study revealed that, 59.6% had used condom whereas, 19.1% and 13.5% of them had used protection methods like douching and withdrawal respectively. However, 46.7% of them did not use any methods of protection. This is similar with the study conducted in different Sub-Saharan countries [16] [19] [20].

This finding showed that about, 41.9% of respondents reported to have ever chewed khat and 44.7% ever smoked, chewed or sniffed any tobacco products. The study conducted in Egypt and Rwanda showed higher percentage [13] [21], this variation may possibly be due to the availability of the drugs and the study area can also be a factor.

## 9. Conclusions

Findings in this study showed that a high number of street children had initiated early sexual intercourse which possibly facilitated an increase in the number of sexual partners in their life and made them highly vulnerable to STIs and HIV/AIDS and all other related health risks.

This study revealed that 82% of the study participants had started having sex before the age of 16 years. The participants reported that this early sexual initiation was due to their need of good items and forceful rape on the street. Initiating sexual intercourse for social connection on the street was common, especially for the newcomers among the street children. Even if they were practicing sexual intercourse with multiple sexual partners, the probability of condom use was vested in the interest of their partners.

Substance use and lack of knowledge about STIs and HIV/AIDS ways of transmission and prevention were found to be the factors for vulnerability among Ethiopian street children.

Interventions targeted multilevel approach, such as re-integration with their family, life skills training, sexuality education, creation of income-generating activities and information education about STIs and HIV should be considered.

## Competing Interest

The authors declared that there is no competing interest.

## Authors' Contribution

All authors, Ayana Chimdessa, Oladepo Olayemi and Onoja Matthew Akpa, participated from inception of the idea to the design, analysis and interpretation of the results. All authors have read and approved the final manuscript.

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