HIV prevalence in young people and children living on the streets, Kenya

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Objective To obtain an estimate of the size of, and human immunodeficiency (HIV) prevalence among, young people and children living on the streets of Eldoret, Kenya.

Methods We counted young people and children using a point-in-time approach, ensuring we reached our target population by engaging relevant community leaders during the planning of the study. We acquired point-in-time count data over a period of 1 week between the hours of 08:00 and 23:00, from both a stationary site and by mobile teams. Participants provided demographic data and a fingerprint (to avoid double-counting) and were encouraged to speak with an HIV counsellor and undergo HIV testing. We used a logistic regression model to test for an association between age or sex and uptake of HIV testing and seropositivity.

Findings Of the 1419 eligible participants counted, 1049 (73.9%) were male with a median age of 18 years. Of the 1029 who spoke with a counsellor, 1004 individuals accepted HIV counselling and 947 agreed to undergo an HIV test. Combining those who were already aware of their HIV-positive status with those who were tested during our study resulted in an overall HIV seroprevalence of 4.1%. The seroprevalence was 2.7% (19/698) for males and 8.9% (23/259) for females. We observed an increase in seroprevalence with increasing age for both sexes, but of much greater magnitude for females.

Conclusion By counting young people and children living on the streets and offering them HIV counselling and testing, we could obtain population-based estimates of HIV prevalence.

Introduction

The primary drivers of homelessness among children and young people globally are poverty, family conflict and child abuse and neglect.3 The United Nations International Children’s Emergency Fund (UNICEF) estimates that the number of children and young people living on the streets ranges from the tens to hundreds of millions.2,3 In an open letter to the Secretary-General of children and young people living on the streets of Eldoret, Kenya.

Methods of counting homeless children in low- and middle-income countries have mainly involved headcount approaches.9,12 Headcounts involve selecting areas in which to perform counts with community stakeholders. However, numbers are acquired by simply counting the street children observed, sometimes for only one hour at a time, and subsequently agreeing with other stakeholders on the average or consensus number. This method is inaccurate however, because of double-, under- or overcounting as well as the subjectivity of those performing the count in deciding who appears to be homeless.

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A more accurate method for counting homeless people, usually performed in high-income settings, is the point-in-time count.13 Such counts involve a census-type approach to identify and count homeless individuals over a given time period.

There are inherent difficulties in counting street-connected children and young people, including their mobility, invisibility and marginalization, which have resulted in wide-ranging estimates of the sizes of such populations and knowledge of them. The aim of this study was to adapt and pilot a point-in-time count of the street-connected youth population.

Abstracts in العربية, 中文, Français, Русский and Español at the end of each article.
in the city of Eldoret, Kenya, incorporating opt-out human immunodeficiency virus (HIV) counselling and testing to estimate HIV prevalence within this population. We have reported on the risks for acquiring HIV and causes of death among the street-connected youth population in Kenya elsewhere, with HIV prevalence from convenience samples ranging from approximately 6% to 8%.17–22 These findings were however limited by non-differential selection biases in sampling and participation, limiting the validity and generalizability of results.

Methods

Study design and setting

We conducted our cross-sectional study during 4–10 September 2016 in the city of Eldoret, capital of the county of Uasin Gishu in Kenya.23 Approximately half of the population in Uasin Gishu live below the Kenyan poverty line24 of 1.90 United States dollars (US$) per day (at 2011 purchasing power parity).25 HIV prevalence among adults is 5%, consistent with the national average.25 As of 2011, Eldoret had a population of 300 000 and is the fifth-largest city in Kenya.23

We considered individuals to be eligible for participation if (i) they were younger than 30 years and (ii) they had spent more than 75% of their days and nights on the street or with other participants in a shared shelter for a minimum of the previous 3 months, to exclude those travelling or temporarily on the street. We did not randomly sample areas or people; instead, we ensured we reached our target population by enrolling peer community leaders during our preparation for the survey. The count was undertaken during term-time to exclude those youths who were only on the street during school holidays. We declined to count individuals who presented themselves but did not meet the inclusion criteria, however referred them to the relevant services, for example, the local sub-county hospital or various clinics in the referral hospital.

Community mobilization and mapping

We engaged members of the community in the preparation of and planning for the count nearly 3 months before its execution. The first stage included discussions with known community leaders, including directors and other key staff of relevant community-based organizations, and other friends and advocates of the street-connected youth population (e.g. some local business leaders). We visited locations important to the street-connected youth under the guidance of existing peer navigators,26 a specialized social worker, and both male and female street-connected youth community leaders. The locations around Eldoret at which participants congregate and shelter include peri-urban settlements, waste disposal sites and other locations either identified by the community leaders or known to the research team (e.g. an empty lot used as a gathering place). Mabaraza (traditional community assemblies) were held with the various gatherings of participants around the city.25 Information was provided about why the count was important, what it would require of each participant and the services being offered, including a single serving of bread and milk (worth approximately US$ 1) to people being counted.

Personnel were recruited from community and facility sources. The HIV counsellors, clinical staff and data assistants were seconded from the local HIV programme or other research projects to provide services for the duration of the count. Senior project staff, clinical supervisors and key community members led training of all personnel at the referral hospital, following numerous planning meetings. Training consisted of ethics certification, study purpose and design, standard operating procedures and work flow for the various teams. Other preparations included engaging community leaders, mapping specific counting locations, and specifying dates and times for counting. Community mobilization included discussions with the County Children’s Officer and police and security officials to minimize the potential for stigmatization and police violence.26

Aspects of the count

We conducted our point-in-time count over a period of seven consecutive days during 08:00 to 23:00 each day. We maintained both a stationary counting site (that moved once after the first site was considered saturated) and a mobile team who visited relevant locations at the appointed days and times. Saturation of a site was determined when no new individuals had been counted for at least one day at the stationary site or one hour at the mobile sites.

We used four teams, each including 10–15 people, comprised of two team leaders (an established community leader and another from the research team), enumerators, data assistants, HIV counsellors certified by the health ministry (who also performed HIV testing), clinicians (who provided onsite first aid and referrals to health care and other available services), volunteers who distributed bread and milk to each individual counted, and other volunteer assistants who ensured individuals proceeded smoothly through the process. Everyone counted was issued with a laminated hospital card with their handwritten unique identifier, name, sex and date of birth, which could be used as a proxy form of identification (which most lack) to gain access to the hospital when in need or if referred during the study.

We made several adaptations to the original point-in-time count29 by holding the count over one week and over both daytime and evening hours until 23:00, having both stationary and mobile counting sites, and integrating HIV counselling and testing within the count. Instead of counting individuals in homeless shelters (which do not exist in Eldoret), we included individuals on the street during the day, but off the street with family or friends at night.

The count procedure

When individuals first presented themselves, we recorded each participant’s digital fingerprint using a ZK-US-10 Biometric fingerprint reader (ZKTeco USA LCC, Fairfield, United States of America) to prevent double-counting. We only stored fingerprint data in the fingerprint reader and without a personal identifier. We used the sequential number assigned by the reader equipment to each fingerprint as a study identifier for the individual. If individuals presented themselves for a second time, the machine issued a warning about the fingerprint already being read. We then interviewed participants, obtaining data including name (whether legal, made up or a nickname), date of birth (confirmed or estimated, being 01/01/year if estimated), sex and where they slept at night (home with parent or guardian, home with a sibling or other relative, in a shared shelter with other street youth, 34 Bull World Health Organ 2019;97:33–41 doi: http://dx.doi.org/10.2471/BLT.18.210211
on the street, in barracks or other). We recorded all count data using Excel (Microsoft, Redmond, USA).

Participants were introduced to the peer navigators, whose job was to increase the uptake of both HIV testing and of care and treatment if positive, and the uptake of other health services as needed (e.g. psychological counselling). 26 To protect the privacy and confidentiality of participants, we encouraged them to speak with the peer navigators if they had received an HIV-positive diagnosis, either previously or through our survey, and wanted help to access care. At this stage, we also offered the participants the opportunity to speak with an HIV counsellor.

HIV counselling and testing

Of those individuals who agreed to speak with an HIV counsellor, we recorded whether or not they had ever been previously tested, their HIV status at the last test and, if diagnosed HIV positive, whether they were receiving care. Individuals who were previously HIV negative or with a HIV status unknown, were invited to receive HIV counselling and testing during the interaction, which took place either in a counselling tent at the stationary sites or at a location where the HIV counsellors had set themselves up some distance away for mobile sites. Participants had the possibility to refuse counselling but accept HIV testing. We conducted HIV testing according to the national algorithm, 26 first using a Colloidal Gold Diagnostic Kit (KHB, Shanghai, China) to detect the presence of the HIV (1+2) antibody (requiring 40 µL of plasma or whole blood), and confirming positive results using a First Response HIV Card Test (Premier Medical Corporation, Mumbai, India). In the case of contradictory results, we determined HIV status using a Uni-Gold reagent assay (Trinity Biotech, Bray, Ireland).

Results were documented by the HIV counsellors for their routine reporting systems (including identification) separately from results for this research (excluding identification).

Statistical methods

We defined HIV prevalence as the total of individuals known to be positive before the survey or newly diagnosed while participating in the study. We used a logistic regression model to measure the relationship between age category or sex and HIV testing uptake or seropositivity. We used a generalized additive model to confirm a nonlinear relationship between the log-odds of agreeing to HIV testing or of seropositivity and age, and to determine whether there were separate age thresholds for females and males at which increases in HIV prevalence were observed. All analyses were undertaken using R software (R Foundation, Vienna, Austria). 27

Ethics

Our study was reviewed and approved by the Moi University/Moi Teaching and Referral Hospital Institutional Research Ethics Committee and the University of Toronto's Research Ethics Board. We obtained a waiver of guardian consent for minors, and a waiver of written consent and assent for participants to be counted and offered HIV counselling and testing. Verbal consent and assent were obtained for the count and HIV counselling and testing separately. Infants who were brought to the count by a street-connected parent were both counted and tested for HIV with the verbal consent of their parent. Personal identifying information from the count was not linked to the HIV testing uptake or results. The study was of minimal risk and had potential benefits to participants, including onsite first aid, referrals, psychological counselling and HIV counselling and testing. The community agreed that unwilling participants would simply not attend. Individuals could receive HIV counselling and testing, first aid and psychological support without participating in the count. Equally, individuals could participate in the count without being required to receive HIV counselling or testing.

Results

We counted a total of 1903 individuals; 484 (25.4%) were older than 29 years and excluded from further analysis. Of the 1419 participants included in the study, 1049 (73.9%) were male with a median age of 18 years (Table 1). There were 170 children aged 5 years or younger, 198 children aged 6–12 years, 398 adolescents aged 13–18 years and 384
young people aged 19–24 years (Fig. 1). Overall, 368 (25.9%) of the population counted were younger than 13 years. Although our target was street-connected youth, we also counted 269 street-connected adults aged 25–29 years. We counted a total of 370 girls and women, 224 (60.5%) of whom were 18 years or younger. Although only 1027 (72.4%) individuals agreed to speak with an HIV counsellor, 1029 made it to the counselling tent due to attendance of the two participants whose agreement was not recorded; 1004 out of 1029 (97.6%) also agreed to HIV counselling. A similar proportion of total male participants (734/1049, 70.0%) accepted HIV counselling as females (270/370, 73.0%) but, due to the higher proportion of male participants, our HIV testing cohort was 26.1% (247/947) female and 73.9% (700/947) male. There were no significant differences in the numbers of those who accepted HIV counselling.

Fig. 1. Age and sex distribution of counted young people and children living on the streets, Eldoret, Kenya, September 2016

Table 2. HIV testing and counselling outcomes of young people and children living on the streets in Eldoret, Kenya, September 2016

| Covariate | Total | No. (%) | Children aged < 15 years | No. (%) | Youths aged 15–24 years | No. (%) | Adults aged 25–29 years | No. (%) |
|-----------|-------|---------|--------------------------|---------|--------------------------|---------|--------------------------|---------|
|           | Males | (n = 749) | Females | (n = 280) | Males | (n = 242) | Females | (n = 131) | Males | (n = 377) | Females | (n = 106) | Males | (n = 130) | Females | (n = 43) |
| Accepted HIV counselling | | | | | | | | | | | | | | | |
| Yes | 734 (98.0) | 270 (96.4) | 230 (95.0) | 122 (93.1) | 374 (99.2) | 105 (99.1) | 130 (100.0) | 43 (100.0) |
| No | 15 (2.0) | 10 (3.6) | 12 (5.0) | 9 (6.9) | 3 (0.8) | 1 (0.9) | 0 (0.0) | 0 (0.0) |
| Missing | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| HIV status | | | | | | | | | | | | | | | |
| Known positive | 5 (0.7) | 14 (5.0) | 0 (0.0) | 0 (0.0) | 2 (0.5) | 5 (4.7) | 3 (2.3) | 9 (20.9) |
| Not known or negative | 743 (99.2) | 265 (94.6) | 242 (100.0) | 131 (100.0) | 375 (99.5) | 100 (94.3) | 126 (96.9) | 34 (79.1) |
| Missing | 1 (0.1) | 1 (0.4) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.9) | 1 (0.8) | 0 (0.0) |
| Of those known positive, receiving care | | | | | | | | | | | | | | | |
| Yes | 3 (60.0) | 13 (92.9) | NA | NA | 1 (50.0) | 5 (100.0) | 2 (66.7) | 8 (88.9) |
| No | 2 (40.0) | 1 (7.1) | NA | NA | 1 (50.0) | 0 (0.0) | 1 (33.3) | 1 (11.1) |
| Missing | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Of those previously diagnosed negative or unaware of HIV status, accepted testing | | | | | | | | | | | | | | | |
| Yes | 700 (94.1) | 247 (92.9) | 215 (88.8) | 116 (88.5) | 363 (96.8) | 99 (98.0) | 122 (96.1) | 32 (94.1) |
| No | 44 (5.9) | 19 (7.1) | 27 (11.2) | 15 (11.5) | 12 (3.2) | 2 (2.0) | 5 (4.0) | 2 (5.9) |
| Missing | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Of those tested, HIV test results | | | | | | | | | | | | | | | |
| Positive | 14 (2.0) | 9 (3.6) | 2 (0.9) | 1 (0.9) | 8 (2.2) | 6 (6.1) | 4 (3.3) | 2 (6.3) |
| Negative | 679 (97.0) | 236 (95.5) | 211 (88.1) | 115 (99.1) | 350 (96.4) | 91 (91.9) | 118 (96.7) | 30 (93.8) |
| Indeterminate | 3 (0.4) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 3 (0.8) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Missing | 4 (0.6) | 2 (0.8) | 2 (0.9) | 0 (0.0) | 2 (0.6) | 2 (2.0) | 0 (0.0) | 0 (0.0) |
| HIV prevalence | 19 (2.7) | 23 (8.9) | 2 (0.9) | 1 (0.9) | 10 (2.8) | 11 (10.8) | 7 (5.6) | 11 (26.8) |

HIV: human immunodeficiency virus; NA: not applicable.

* These numbers included those known to be HIV negative, those who had never been tested and those who may have tested negative many months previously and felt they had recently been exposed.

b These numbers include 10 participants who had declined HIV counselling.

c Including previously known and newly tested positive individuals, excluding indeterminate results and missing data.

Note: Inconsistencies arise in some values due to rounding.
and testing in terms of age (Table 1) or usual place of sleeping. Of the 1027 who agreed to speak with a counsellor, 211 (20.5%) slept at home with their parents or a guardian, 98 (9.5%) with a sibling or other relative, 149 (14.5%) in a rental with friends, 207 (20.2%) on the streets, 117 (11.4%) in barracks and 245 (23.9%) at some other location.

Table 2 summarizes the HIV counselling, testing and seroprevalence characteristics of the population by age and sex. Briefly, 19/1029 (1.8%) of the population who agreed to speak with a counsellor already knew they were HIV-positive; of those, 16 (84.2%) self-reported that they were already receiving HIV care. Of the 1004 individuals who agreed to HIV counselling, 985 (98.1%) had previously tested HIV-negative or were unaware of their HIV status. Of the 947 HIV tests conducted, which included 10 participants who had refused HIV counselling, 23 (2.4%) tested HIV positive.

Combining those who were already aware of their HIV-positive status with those newly diagnosed resulted in an HIV seroprevalence of 4.4% (42/957) among those who agreed to speak with a counsellor. When we considered sex separately, the seroprevalence for males was 2.7% (19/698) and for females was 8.9% (23/259). HIV seroprevalence in males increases from 2.8% in the age group 15–24 years to 5.6% in the age group 25–29 years; HIV seroprevalence in females increases more between these age categories from 10.8% to 26.8% (Table 2). We did not observe any significant difference in HIV testing uptake between males and females after adjusting for age (Table 3), or any significant difference in HIV seroprevalence between males and females in the age category of younger than 15 years. However, women aged 15–24 years and 25–29 years were above four and six times more likely to be HIV positive than men, respectively (odds ratio, OR: 4.23; 95% confidence interval, CI: 1.74–10.27 and OR: 6.18; 95% CI: 2.21–17.29; Table 3). Fig. 2 illustrates a stable but increasing HIV seroprevalence among males with increasing age, however depicts an escalation of greater magnitude among females with increasing age.

### Discussion

Our data provide an estimate of the magnitude of the street-connected youth population and highlight especially vulnerable groups within them who should be prioritized for care and protection, notably those younger than 15 years and all females. Our population-level estimate of HIV seroprevalence in young people and children living in the streets of Eldoret is consistent with the average seroprevalence of 4.7% in the general adult population of the county. We also found that street-connected females were much more likely to be HIV positive than males, consistent with the generalized epidemic among adults in sub-Saharan Africa. Compared with a county-wide prevalence of 6.7% in females and 4.0% of males, we observed a greater difference between female and male street-connected people.

A description of a headcount undertaken over a period of 10 days in Mwanza, United Republic of Tanzania, reported a higher number of young people living on the streets (1888 versus 1419), but a smaller number of females (305 versus 370). With a population of over 400 000, Mwanza is United Republic of Tanzania’s second largest city. We may have reached a broader segment and more reliable (in terms of reproducibility) number of the target population compared with an observational headcount or a single-night point-in-time count. Street-connected youth populations are mobile and follow market schedules, community programmes and other opportunities to make money or otherwise meet basic needs, so having both stationary and mobile counting stations is crucial. Females are likely to be in different places and at different times from males; for example, while the males may be working (e.g. using luggage carts for money around the bus stations or finding parking spaces for drivers), females are more likely to be found begging in the downtown centre. There may be tensions between different groups of street-connected youth because of interpersonal conflicts or competition over resources, preventing some groups of youths from being counted at the same time as others. We therefore developed targeted and tailored strategies to reach as many as possible.

Our study had several strengths. Instead of randomly sampling a population or area, we carefully planned our study to target the most relevant street-connected population through our strong relationships with them and with the County Children’s Officer, healthcare providers, relevant community or-

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### Table 2

| Covariate          | Agreed to HIV testa (95% CI) | HIV seroprevalenceb (95% CI) |
|--------------------|------------------------------|------------------------------|
| **Sex**            |                              |                              |
| Male               | 1.00 (NA)                    | 1.00 (NA)                    |
| Female             | 1.02 (0.58–1.80)             | 4.38 (2.30–8.34)             |
| **Age**            |                              |                              |
| < 15 years         | 1.00 (NA)                    | 1.00 (NA)                    |
| 15–24 years        | 4.20 (2.24–7.85)             | 6.65 (1.95–22.74)            |
| 25–29 years        | 2.80 (1.22–6.39)             | 16.81 (4.80–58.87)           |
| **Sex and age**    |                              |                              |
| < 15 years         | NA                           | 1.00 (NA)                    |
| 15–24 years        | NA                           | 1.00 (NA)                    |
| 25–29 years        | NA                           | 4.23 (1.74–10.27)            |

CI: confidence interval; HIV: human immunodeficiency virus; NA: not applicable; OR: odds ratio.

a Excluding those already known to be HIV-positive.

b A combination of those already known to be HIV positive plus those who tested positive during this study, excluding indeterminate results and missing data.

Note: For the uptake of HIV testing, sex and age categories are adjustment variables.

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### Table 3

| Covariate          | OR (95% CI) |
|--------------------|-------------|
| **Sex**            |             |
| Male               | 1.00        |
| Female             | 6.18 (2.21–17.29) |
| **Age**            |             |
| < 15 years         | 1.00        |
| 15–24 years        | 6.65 (1.95–22.74) |
| 25–29 years        | 16.81 (4.80–58.87) |

CI: confidence interval; HIV: human immunodeficiency virus; NA: not applicable; OR: odds ratio.
organizations and the police. We avoided the possibility of overcounting by using electronic fingerprinting. As part of our strategy to safeguard the rights of the city’s street-connected youth population we offered various services, even to those who refused to be counted. Finally, we conducted the count over a 7-day period with strategically placed stationary and mobile counting points, during both daylight and evening hours until 23:00.

Our study also had limitations. This was a cross-sectional study, making it impossible to investigate any causal relationship between being street-connected and HIV seroprevalence. Due to the stigma attached to being homeless, some children did not want to self-identify as being street-connected; our count may therefore have missed some individuals who did not want to come forward. We did not assess important issues such as substance abuse or HIV risk factors, which participants may have been uncomfortable discussing, as our focus was counting the population and determining HIV prevalence. Participants’ self-reported age may have been inaccurate, as many do not know their exact birth date. Finally, as this was conducted in a single city, the findings may not be generalizable to other cities in the region which may differ in background HIV prevalence and other relevant characteristics such as population.

In conclusion, we have demonstrated that it is possible to obtain population-based estimates of HIV prevalence in a low-income setting, using generalizable and reproducible methods in terms of community engagement and data collection, by counting street-connected youth population and offering HIV counselling and testing. Such basic surveillance activities are vital to monitor and address child and youth homelessness. This population requires public health authorities, community and health-service providers and policy-makers to implement programmes to prevent premature mortality among them and to uphold their rights.

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Competing interests: None declared.
Objective

Obtenir une estimation du nombre de jeunes et d’enfants qui vivent dans les rues d’Eldoret, au Kenya, ainsi qu’une estimation de la prévalence du VIH dans ces jeunes et ces enfants.

Methods

Nous avons comptabilisé les jeunes et ces enfants à l’aide d’une approche ponctuelle, en veillant à toucher notre population cible grâce à des personnes interviennent dans toutes les localités concernées, accompagnées par des responsables locaux. Nous avons également recueilli des informations démographiques et géographiques à la base de l’imprimerie digitale pour éviter une double comptabilisation. Nous avons alors aligné ces informations sur les données de l’enquête de l’enquête de violences sexuelles et de séropositivité.

Results

Sur les 1419 participants admissibles comptabilisés, 1049 (73,9%) étaient des individus de sexe masculin âgés de 18 ans ou moins. Sur les 1049 individus ayant participé à l’enquête, 947 de 947 (89%) ont également été soumis à un dépistage du VIH et à un test de sérologie. Nous avons obtenu une estimation de la séropositivité de 4,1% chez les adolescents de sexe masculin et de 2,7% chez les adolescents de sexe féminin. Nous avons constaté que la séropositivité augmentait avec l’âge chez les deux sexes, mais plus significativement pour les adolescents de sexe masculin.

Conclusion

En comptabilisant les jeunes et les enfants qui vivent dans les rues et en leur proposant des services et un dépistage du VIH, nous pouvons obtenir des estimations de la prévalence du VIH.
**Resumen**

**Prevalencia del VIH en jóvenes y niños que viven en la calle, Kenia**

**Objetivo**
Obtener una estimación del número de jóvenes y niños que viven en las calles de Eldoret, Kenia, así como de la prevalencia de la inmunodeficiencia humana (VIH) entre ellos.

**Métodos**
Se contaron a los jóvenes y los niños utilizando un enfoque puntual, asegurando que no se llegase a la población objetivo mediante la participación de los líderes comunitarios correspondientes durante la planificación del estudio. Se adquirieron datos de conteo puntual en un periodo de 1 semana entre las 8:00 y las 23:00 horas, tanto de un sitio estacionario como de equipos móviles. Los participantes proporcionaron datos demográficos y una huella dactilar (para evitar el doble recuento) y se les animó a hablar con un asesor del VIH y a someterse a la prueba de VIH. Se utilizó un modelo de regresión logística para determinar la asociación entre la edad o el sexo y la aceptación de la prueba del VIH y la seroposividad.

**Resultados**
De los 1419 participantes elegibles contados, 1049 (73,9 %) fueron hombres con una edad media de 18 años. De los 1029 que hablaron con un asesor, 1004 aceptaron recibir asesoramiento sobre el VIH y 947 consintieron someterse a una prueba del VIH. La combinación de los que ya conocían su estado VIH-positivo y aquellos que se hicieron la prueba durante el estudio resultó en una seroprevalencia general del VIH del 4,1 %. La seroprevalencia fue del 2,7 % (19/698) para los hombres y del 8,9 % (23/259) para las mujeres. Observamos un aumento de la seroprevalencia con el aumento de la edad para ambos sexos, pero de mucha mayor magnitud para las mujeres.

**Conclusión**
Al contar a los jóvenes y niños que viven en las calles y ofrecerles asesoramiento y pruebas del VIH, se puede obtener una estimación de la prevalencia del VIH basada en la población.

**References**

1. Embleton L, Lee H, Gunn J, Ayuku D, Braitstein P. Causes of child and youth homelessness in developed and developing countries: A systematic review and meta-analysis. JAMA Pediatr. 2016 05 1;170(5):435–44. doi: http://dx.doi.org/10.1001/jamapediatr.2016.0156 PMID: 27043891

2. The state of the world’s children 2006: Excluded and invisible. New York: United Nations Children’s Fund; 2006. Available from: https://www.unicef.org/sowc06/pdfs/sowc06_fullreport.pdf [cited 2018 Oct 18].

3. The state of the world’s children 2012: Children in an urban world. New York: United Nations Children’s Fund; 2012.

4. United Nations. Blog on the 2016 theme of the high-level political forum – ensuring that no one is left behind. New York: Division for Sustainable Development Goals, United Nations; 2016. Available from: https://sustainabledevelopment.un.org/hlpf/blog/week8 [cited 2018 Oct 30].

5. All children count but not all children are counted: An open letter to the UN Statistical Commission and Inter-Agency Expert Group on SDG Indicators; 2016. Available from: https://kumoscontentfiles.net/metadata/assets/file/All_children_count_but_not_all_children_are_counted.pdf [cited 2018 Oct 30].

6. Global campaign for violence prevention: The public health approach. Geneva: World Health Organization; 2017. Available from: http://www.who.int/violence_injury_prevention/violence/global_campaign/en/ [cited 2018 Oct 18].

7. Children in especially difficult circumstances. New York: United Nations Children’s Fund; 1986.

8. Databank indicator. Homeless children and youth. Bethesda: Child Trends; 2015. Available from: https://www.childtrends.org/indicators/homeless-children-and-youth [cited 2018 Oct 18].

9. Perry J. A quantitative head count of children at risk of street-related behavior and dangers in Taroudannt, Morocco: Testing Moroccan Children’s Trust; 2014. Available from: https://www.moroccanchildrenstrust.org/wp-content/uploads/2015/09/2014-Headcount-report.pdf [cited 2018 Oct 18].

10. Ford C. National headcount of street children in Sierra Leone. London: Street Child of Sierra Leone; 2012. Available from: https://static1.squarespace.com/static/51574be4e4/e035a0314788c7/565c250e4b0296b6a4e367f/1448879630232/Headcount_draft_report_FINALcfd61%21c29.pdf [cited 2018 Oct 27].

11. Children and young people living on the streets in Mwanza, Tanzania: Headcount Report. Cheshire: Railway children, 2012. Available from: https://www.railwaychildren.org.uk/media/11743/mwanza-head-count-report-final.pdf [cited 2018 Oct 27].

12. Turgut N. Consortium for street children briefing paper 2015: Do I count if you count me? London: Consortium for Street Children, 2015. Available from: https://www.streetchildren.org/wp-content/uploads/2015/09/ CSC_Briefing-Paper_FINAL-Low-res-for-online-use.pdf [cited 2018 Oct 27].

13. Databank indicator. Homeless children and youth. Bethesda: Child Trends; 2015. Available from: https://www.childtrends.org/indicators/homeless-children-and-youth [cited 2018 Oct 18].

14. Perry J. A quantitative head count of children at risk of street-related behavior and dangers in Taroudannt, Morocco: Testing Moroccan Children’s Trust; 2014. Available from: https://www.moroccanchildrenstrust.org/wp-content/uploads/2015/09/2014-Headcount-report.pdf [cited 2018 Oct 18].

15. Ford C. National headcount of street children in Sierra Leone. London: Street Child of Sierra Leone; 2012. Available from: https://static1.squarespace.com/static/51574be4e4/e035a0314788c7/565c250e4b0296b6a4e367f/1448879630232/Headcount_draft_report_FINALcfd61%21c29.pdf [cited 2018 Oct 27].

16. Children and young people living on the streets in Mwanza, Tanzania: Headcount Report. Cheshire: Railway children, 2012. Available from: https://www.railwaychildren.org.uk/media/11743/mwanza-head-count-report-final.pdf [cited 2018 Oct 27].

17. Turgut N. Consortium for street children briefing paper 2015: Do I count if you count me? London: Consortium for Street Children, 2015. Available from: https://www.streetchildren.org/wp-content/uploads/2015/09/ CSC_Briefing-Paper_FINAL-Low-res-for-online-use.pdf [cited 2018 Oct 27].
13. Embleton L, Ayuku D, Makori D, Kamanda A, Braitstein P. Causes of death among street-connected children and youth in Eldoret, Kenya. BMC Int Health Hum Rights. 2018 05 17;18(1):569. doi: http://dx.doi.org/10.1186/s12910-018-0084-y PMID: 29764412

20. Embleton L, Wachira J, Kamanda A, Naanyu V, Winston S, Ayuku D, et al. Eating habits among street-connected youth in Eldoret, Kenya. PLoS One. 2016 03 4;11(3):e0150814. doi: http://dx.doi.org/10.1371/journal.pone.0150814 PMID: 26942724

27. Naanyu V, Sidle JE, Frankel RM, Ayuku D, Nyandiko WM, Inui TS. Rooting out the roots: street life and psychological practices in becoming an accepted member of the street youth community in Western Kenya. BMC Public Health. 2015 06;15(1):210. doi: http://dx.doi.org/10.1186/s12889-015-0084-y PMID: 26687378

32. National AIDS and STI control program. Kenya AIDS Indicator Survey (KAIS) Preliminary Report. Nairobi: Government of Kenya, Ministry of Health; 2013.

33. HIV and AIDS estimates in Kenya, 2015. UNAIDS; 2016. Available from: https://www.unaids.org/en/regionscountries/countries/kenya

34. World Population Review. 2018. Available at: http://worldpopulationreview.com/countries/tanzania-population/cities/ [cited 2018 Oct 30].