

Determinants of Sexual and Reproductive Health among Street Adolescents in Dagoretti District of Nairobi.
Rosemary Kamanu, Prof. Zipporah Nganga, James Muttunga.¹

Background: Adolescents make up 80% of the world population and despite being the hardest hit by sexual and reproductive health challenges their sexual and reproductive health (SRH) needs are largely unmet. The challenges are more intense among certain groups, including street adolescents based on social, cultural and biological factors.

Methods: A descriptive cross sectional study was carried out in Dagoretti district of Nairobi to determine the sexual and reproductive health behaviour risk factors among street adolescents. Data was collected through interviews from 195 adolescents and 10 key informants.

Results: The study established that despite moderately high SRH knowledge among 79% of the participants, 55% of them were involved in high risk sexual behaviour. Majority of the children had sex by the age of 10-15 years (41.9%) with older partners and did not use condoms (74.4%). In the multivariate model, the following factors were found to be predictive of risky sexual behaviour, male gender (pv=0.006), age in years (pv=0.037), attendance to HIV testing (pv=0.011), parents/guardians as a source of SRH information and combination of number of drugs used (pv=0.001).

Conclusion: This study recommends enactment of a comprehensive ASRH policy aimed at providing accurate, age-appropriate and comprehensive sexual and reproductive health education for all adolescents with specific focus on early adolescence (10yrs to 14yrs) and the male gender. It further recommends for the strengthening of parental involvement in peer education, integration of SRH and sensitization in drugs and substances of abuse and improvement of health centres as education and service provision centres on ASRH. Further studies are recommended to understand the gap between knowledge and practice as well as the need to disaggregate data on street children by cohorts to ensure appropriate programming for the different groups of children in contact with the streets.

¹ Rosemary Kamanu; MSc. Public Health student, Jomo Kenya University of Agriculture and Technology (JKUAT) /Kenya Medical Research Institute (KEMRI)
Prof Zipporah Ng'ang'a: Lead supervisor, Director, JKUAT, Institute of Tropical Diseases.
Mr. James Muttunga: Alternate Supervisor, Chief Research Officer, KEMRI

INTRODUCTION

Adolescence is a rather lengthy period of transition from childhood to adulthood, associated with an emerging awareness of sexuality and an age-specific drive to experiment with sex. The adolescents have specific health and development needs, and many face challenges that hinder their wellbeing including; poverty, a lack of access to health information and services, and unsafe environments. In addition to the sexual and reproductive health needs of adolescents being either poorly understood or not fully appreciated, in many societies adolescents are kept relatively uninformed regarding sexual matters, sexual activity is stigmatized and adolescents are confronted with hostility from adults if non-sanctioned sexual relations take place.

These conflicting factors not only make the need for sex education, contraception and STI services for adolescents urgent but also make their provision difficult to implement (1). Their sexual and reproductive health (SRH) needs are largely unmet (2) despite growing evidence that this neglect can seriously jeopardize the health and future well-being of young people (3,1).

One third of women worldwide give birth before the age of 20 (4) with deliveries by women under 20 totaling 15 million annually (5). Pregnant adolescents are at increased risk of morbidity and mortality due to complications during pregnancy and childbirth, including obstructed labor, preterm labor and spontaneous abortion. Five million adolescents between 15 and 18 years have unsafe abortions each year and 70,000 abortion-related deaths occur among this age group every year. Half of new HIV infections occur in 15-to-24 year olds, and one third of new cases of curable sexually transmitted infections (STIs) affect people younger than 25 years (6).

However, while adolescents may experience the same physical changes and sensations during these years, the manner in which they are interpreted and give rise to social and legal proscriptions vary tremendously. These realities have an important influence on the development of policies and programmes which meet the needs of a diversity of young people. Young people from sub-Saharan Africa are more at risk of experiencing reproductive health problems than other youth from around the world due to the social and low economic conditions in the region (7). Multiple sexual relationships and unprotected sexual encounters are common among young men and women and especially those who reside in urban areas (8). Further the needs of a ten-year-old girl who attends primary school and is cared for by her parents, for example, differ significantly from those of a ten year- old girl who, as a result of

the death of her parents, already heads a family and has assumed adult responsibilities (9). There is no one population called 'young people' and therefore no one strategy to be developed to provide for them, (10).

In Kenya young people face severe threats to their health and general well being. They are vulnerable to sexual assault and prostitution, early pregnancy and childbearing, unsafe abortion, malnutrition, female genital cutting, infertility, anaemia, and reproductive tract infections (RTIs) including STIs and HIV/AIDS (11).

Street children (majority of whom are adolescents) are estimated in the millions globally and their rapid increase calls for an urgent response. Confronted with the harsh life of the street, these children engage in high risk behaviour in a quest to survive. Street adolescents who are often coerced into unsafe sexual practice will continue to be at risk for psychoactive substance use, HIV infection and other reproductive health problems. Intensive and ongoing services are thus required to meet their multi-faceted health and social needs.

However, little documentation exists especially in Sub Sahara Africa to inform policy development and programming for this group. The evidence on SRH problems among higher risk adolescent populations (such as young sex workers and their clients, boys who have sex with boys, street children and children in homes) other regions (e.g. Asia and Latin Americas) and other STIs (such as herpes and chancroid) remains very limited indeed (12). The problem of street children is well documented in Latin America and South-East Asia but in Africa it is a comparatively new phenomenon (13). There is limited data literature on street children with gaps related to gender insensitivity, methodology and lack of validity which ultimately affect the quality of the researches (14). Further, most studies carried out on street children the world over have not provided data on adolescents as a separate group despite their unique needs.

There was therefore need to carry out a study to understand the reproductive health needs and challenges of street adolescents to ensure that their reproductive health issues are brought to the forefront and incorporated in long term developmental planning. The results of this study will inform policy development and street adolescents programming to ensure inclusion of one of the most vulnerable groups and development of more sustainable and impactful programmes.

Methods

The study was carried out in Dagoretti district in Kenya. The district is located in Nairobi County which has the largest number (60,000) of street children in Kenya (15). Dagoretti district has coverage of 38.7 km² and a population of 329,777 with 166,391 being male and 163,186 female (16). The district attracts high immigrant from other parts of the country in search of employment in the capital city. The district has many informal settlements, where many residents with low income reside, such as Kawangware.

This was a descriptive cross sectional study where the study population comprised of all street adolescents in Dagoretti District. Street adolescents in this study were defined as children between the age of ten and nineteen living or working on the streets with or without any linkages to their families. Reproductive health was also defined as a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, reproductive health addresses the reproductive processes, functions and system at all stages of life. Reproductive Health (RH) is thus a state of complete physical, mental and social well being, and not merely the absence of disease or infirmity, in all matters relating to the reproductive system, its functions and processes (17).

Using the estimated proportion adolescents aged between 15 and 19 who had their first sexual experience before the age of 15 (18) the sample size was calculated using the fisher formula. A random sample of 238 street adolescents were selected from a sampling frame estimated from the data collected on the different bases and soccer teams targeting street adolescents in the district. A total of 195 adolescents gave successful interviews (82% response rate).

A structured questionnaire designed in English and administered by the researchers in Kiswahili was used to collect data. To ensure a smooth entry to the 'private' lives of the street adolescents all trained researchers were street educators that had worked with the adolescents either on the streets or through soccer teams. The respondents were asked about their demographic characteristics (age, place of birth, birth order, family size, period in contact with the streets, education level, contact with the family and source of livelihood), knowledge and attitudes on SRH (knowledge on HIV/AIDS, knowledge on STIs, knowledge on contraception), SRH practices (sexual debut, number of partners, age of partners, reasons for practicing sex, ever had forced or coerced sex, involvement in homosexuality and/or bestiality, procurement of abortions, use of protection and use of available SRH services) and access to SRH services and information(where, by who and why).

Data collected in the questionnaires was entered into MS Access and cleaned before being transferred to SPSS version 12.0 (Statistical Package for Social Sciences) for analysis. Analysis of risky and not risky sexual behaviour was carried out from the data. The definition of risky behaviour was determined by generating a summation of all scores under the practice section. The highest score attainable was 16 and a percentage score for each adolescent was calculated. The scores were grouped into not at risk for <25%, low risk for 25-50%, moderately high risk for 51-75% and high risk for >75%. Risky sexual behaviour was analyzed in relation to selected demographics, knowledge, attitude and accessibility to SRH and selected behavioral characteristics among the street adolescents. Differences in proportions were compared using the Pearson's chi square test for the categorical variables. A two sided p value <0.05 was considered statistically significant. Fourteen factors associated with risky sexual behaviour in bivariate analysis were considered for multivariate analysis to identify independent predictors of risky sexual practices among the street adolescents. These were gender, age, place of birth, education level, overall knowledge score, combination of types of SRH services ever accessed, combination of SRH services recently accessed, health worker/health centre as a source of SRH information, peers/ siblings as source of SRH information, parents as source of SRH information, combination of types of sources of SRH information, ever going for HIV testing and combination of types of drugs and substances abused. Upon fitting the factors using Binary logistic regression and specifying 'backward conditional' method with removal at P<0.05, seven iterations were performed. Variables with P<0.05 in the logistic regression were considered to predict risky sexual practices among the street adolescents.

Approval to carry out the study was sought from KEMRI Scientific Steering Committee and National Ethical Review Committee. Further approval to work with the adolescents was sought from the District Children's Office. Only those adolescents who consented to participate in the study were enrolled into the study.

Results

Socio demographic Characteristics

The socio-demographic characteristics of the study population are as shown in table 1. The total number of interviewed street adolescents was 195. Gender distribution had a slightly high proportion of females (53.8%) compared to males. A relatively high

percentage of the street adolescents (78.5%) were aged between 13 and 16 years.

Majority of the street adolescents (73.8%) were between 1st and 3rd birth order. Most of the adolescents (67.7%) were born within Nairobi area and a relatively high proportion of the street adolescents (40.5%) had 3 or 4 siblings.

Table 1 Selected socio-demographic characteristics among the street adolescents

Variables	n=195	%
Sex		
Male	90	46.2
Female	105	53.8
Age in years		
<13	14	7.2
13 - 14	83	42.6
15 - 16	70	35.9
17 - 18	28	14.4
Birth Order		
1 st	65	33.3
2 nd or 3 rd	79	40.5
4 th or 5 th	32	16.4
6 th or higher	19	9.7
Place of birth		
Within Nairobi area	132	67.7
Outside Nairobi area	63	32.3
Number of siblings		
<3	30	15.4
3 - 4	79	40.5
5 - 6	54	27.7
>6	32	16.4
Education Level		
None	8	4.1
Lower Primary	9	4.6
Upper Primary	62	31.8
Completed Primary	49	25.1
Started Secondary	46	23.6
Completed Secondary	15	7.7
College	6	3.1
Duration being on the streets in years		
<5	61	41.8
5 - 10	30	20.5
>10	55	37.7
Could not estimate	49	

The level of education among the adolescents was mainly upper primary (31.8%), completed primary (25.1%), and started secondary (23.6%) with 4.1% not having gone to school. Out of those 146 that were able to estimate their stay on the streets, a relatively high proportion (41.8%) reported that they have been there for less than five (5) years.

Knowledge on Sexual and Reproductive Health among the Street Adolescents

Knowledge was assessed using 29 variables each scoring one. A composite score was generated by summation of all the scores. The maximum attainable score was 29. A percentage score for each adolescent was determined. An adolescent who scored less than 25% was graded to have scored poorly, 25 – 50% as moderately good, 51 – 75% good while one who scored more than 75% was considered to have very good knowledge of SRH.

Overall knowledge score on Sexual and Reproductive Health revealed that a relatively high proportion of the adolescents (74.9%) scored above 'moderately good', constituted by 27.2% scoring 'good' and 47.7% scoring 'very good' based on a preset index.

Attitudes on Sexual and Reproductive Health among the Street Adolescents

Attitude was assessed using 6 variables each scoring one. A composite score was generated by summation of all the scores. The maximum attainable score was 6. A percentage score for each adolescent was determined. An adolescent who scored less than 25% was graded to have scored poorly, 25 – 50% as moderately good, 51 – 75% good while one who scored more than 75% was considered to have very good attitude towards SRH.

Overall attitude score on Sexual and Reproductive Health revealed that a greater majority of the adolescents (90.8%) scored above 'moderately good', constituted by 14.9% scoring 'good' and 75.9% scoring 'very good'.

Access to Sexual Reproductive Health (SRH) Services among the Street Adolescents

A relatively small proportion of the adolescents (12.0%) reported that they had an STI, 6.7% had abnormal genital discharge, and 5.1% had genital ulcers. Among those who suffered a form of illness, 76.2% visited a hospital or a private clinic as their point of treatment. The most commonly cited types of sexual and reproductive health services ever accessed by the street adolescents include; VCT for HIV (56.9%), Education and counseling regarding SRH (35.4%), STI treatment and counseling (21.5%), Immunization (21.5%), and Family planning services (20.5%). Other types of sexual and reproductive health services accessed accounted for less than 20.0%. A relatively high proportion of the adolescents (45.6%) accessed 1 – 2 types of sexual and reproductive health services.

The most commonly cited types of sexual and reproductive health services recently accessed by the adolescents include; VCT for HIV (28.7%), education and counseling regarding SRH (15.4%), and immunization (10.8%). Upon further probing on whether the adolescents would return to the same facility they accessed SRH information, 51.3% indicated that they would. Among those who indicated that they would not return, the most cited reason include; takes too much time (21.1%), mistreated by staff (21.1%), not enough privacy (15.8%), it is so far (13.2%), too embarrassing (10.5%), and no staff of the same sex available (10.5%).

The most commonly cited sources of condoms by the street adolescents included; shop (50.4%), clinic (33.3%), and friend (33.3%). Majority of the adolescents (87.7%) reported at least one source of information on sexual reproductive health. Upon probing further, the commonly cited sources of information on sexual reproductive health included peers (69.2%), NGO/CBO/FBO (67.7%), Radio (49.2%), parents/guardians (45.1%), posters (36.4%), siblings (32.8%) and health workers (32.3%).

Practices with respect to Sexual and Reproductive Health among the Street Adolescents

Overall assessment on practice with regard to SRH was assessed using 16 variables scored one each. A composite score was generated by summation of all the scores. The maximum attainable score was 16. A percentage score for each adolescent was determined. An adolescent who scored less than 25% was considered Not at risk, 25 – 50% as at low risk, 51 – 75% at moderately high risk while one who scored more than 75% was considered to be at high risk.

A relatively high proportion of the Adolescents (62.1%) reported that they had ever gone for HIV testing. Close to two-thirds of the adolescents (60.0%) had experienced sexual intercourse in their life, most of them (41.9%) having had their sexual debut at age 10 – 15 years. The mean sexual debut age was found to be 13 years. A relatively small proportion of the adolescents (25.6%) used a condom during their sexual debut, 53.9% experienced their first encounter with a friend. One-third of the adolescents (32.5%) reported that the person with whom they experienced the sexual debut was aged >15 years. Upon probing on circumstances that led to first sexual encounter, the most commonly highlighted circumstances include; willingness (43.6%) and persuasion (16.4%). Upon probing if the adolescent ever received anything from someone in exchange for having sex, the specified forms of

coercion include; money (24.8%), food (23.1%), gifts (20.5%), and security (15.4%).

A relatively small proportion of the adolescents (19.7%) reported that they had ever had sexual intercourse when somebody was physically forcing or threatening them compared to 45.3% who reported that they ever had sexual intercourse when physically forcing or threatening somebody. Among the perpetrators of forced sex included friends (56.5%), relatives (39.1%), and teachers (26.1%). 26.3% of the street adolescents reported that they had had sexual intercourse with at least two (2) persons in the past three months. Majority (39.3%) indicated that they never used condoms with 38.5% using occasionally. Out of those who did not use a condom at all, 26.1% cited that they trusted their partners, 23.9% indicated that condoms are not available, while 10.9% reported that they fear the consequences of using a condom. Upon probing why the adolescents engage in sex, the commonly cited reasons were love (68.4%), sexual pleasure (22.2%), to belong (12.9%), and to earn some money (11.1%). A relatively small proportion of the adolescents (13.7%) indicated that they had ever been pregnant, most of them (62.5%) reporting to have carried one pregnancy. Majority of the pregnancy (75.1%) were carried to term.

A relatively high proportion of the adolescents with a pregnancy experience (62.5%) used ANC services during their last pregnancy. For those who did not use the ANC services, the specified reasons included lack of money (83.3%), not seeing its importance (50.0%), and poor reception at the clinic (33.3%).

A relatively high proportion of the adolescents (43.1%) reported that they use drugs and substances. Upon probing further, the commonly cited drugs and substance abused by the street adolescents include; Alcohol (40.5%), cigarettes (23.6%), marijuana (22.6%), and glue (11.8%). Other cited drugs and substance accounted for less than 10% each. Close to one-quarter of the adolescent (21.0%) used more than two types of drugs and substance.

Fifty five percent of the adolescents were categorized as either high risk or moderately high risk in relation to sexual behaviour.

Risky Sexual behaviour in relation to different characteristics of the street adolescents

Bivariate analysis

Fourteen factors were found to be associated with risky sexual behaviour. There was a significant association between Male gender and risky sexual behaviour (72.2%) compared to their female

counterparts (49.5%), (OR=2.65; 95% CI: 1.46 – 4.83; p=0.001).

Age 15 - 16 years was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (74.3%) compared to age <15 years (42.3%), (OR=3.95; 95% CI: 2.02 – 7.71; p<0.001). Similarly, age >16 years was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (85.7%) compared to age <15 years (42.3%), (OR=8.20; 95% CI: 2.64 – 25.43; p<0.001).

Being born within Nairobi was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (65.2%) compared to being born outside Nairobi (49.2%), (OR=1.93; 95% CI: 1.05 – 3.55; p=0.034).

Upper primary level of education was significantly associated with decreased number of street adolescents engaging in Risky Sexual behaviour (46.8%) compared to completed secondary level (85.7%), (OR=0.15; 95% CI: 0.04 – 0.55; p=0.004).

A 'Good' score in knowledge was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (58.5%) compared to 'poor' (29.4%), (OR=3.38; 95% CI: 1.04 – 10.98; p=0.043). Similarly, a 'Very good' score was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (68.8%) compared to 'poor' (29.4%), (OR=5.30; 95% CI: 1.71 – 16.43; p=0.004).

Ever accessing 1 - 2 types was significantly associated with increased number of street adolescents engaging in Risky sexual practices (64.0%) compared to never accessing (45.5%), (OR=2.14; 95% CI: 1.08 – 4.24; p=0.030). Similarly, ever accessing >2 types was significantly associated with increased number of street adolescents engaging in Risky sexual practices (68.6%) compared to never accessing (45.5%), (OR=2.62; 95% CI: 1.19 – 5.81; p=0.017).

Recent access of 1 - 2 types was significantly associated with increased number of street adolescents engaging in Risky sexual practices (73.3%) compared to not recent/never accessing (52.1%), (OR=2.52; 95% CI: 1.28 – 4.97; p=0.007).

Use of Health workers/Health centers as a source of SRH information was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (70.3%) compared to not using Health workers/Health centers (55.0%), (OR=1.94; 95% CI: 1.03 – 3.67; p=0.040).

Use of Media (Radio/Poster/TV) as a source of SRH information was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (68.3%) compared to not

using Media (Radio/Poster/TV) (50.5%), (OR=2.10; 95% CI: 1.18 – 3.77; p=0.012).

Use of Peers/Siblings as a source of SRH information was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (67.4%) compared to not using Peers/Siblings (43.3%), (OR=2.70; 95% CI: 1.45 – 5.05; p=0.002).

Use of Parents/Guardians as a source of SRH information was significantly associated with decreased number of street adolescents engaging in Risky Sexual behaviour (48.9%) compared to not using Parents/Guardians (69.2%), (OR=0.43; 95% CI: 0.24 – 0.77; p=0.004).

Significantly high number of street adolescents were engaging in Risky sexual practices among those accessing 1 - 2 sources (72.9%), (OR=8.08; 95% CI: 2.63 – 24.80; p<0.001); 3 - 4 sources (60.0%), (OR=4.50; 95% CI: 1.56 – 12.97; p=0.005); 5 - 6 sources (61.4%), (OR=4.76; 95% CI: 1.58 – 14.39; p=0.006); and >6 sources (68.4%), (OR=6.50; 95% CI: 1.71 – 24.77; p=0.006) compared to those not accessing (25.0%), (OR=2.14; 95% CI: 1.08 – 4.24; p=0.030).

Ever taking a HIV test was significantly associated with increased number of street adolescents engaging in Risky Sexual behaviour (68.6%) compared to never taking (45.9%), (OR=2.57; 95% CI: 1.41 – 4.67; p=0.002).

Use of 1 - 2 types of drugs and substances was significantly associated with increased number of street adolescents engaging in Risky sexual practices (74.4%) compared to non-use (42.3%), (OR=3.96; 95% CI: 1.81 – 8.66; p=0.001). Similarly, use of >2 types of drugs and substances was significantly associated with increased number of street adolescents engaging in Risky sexual practices (92.7%) compared to non-use (42.3%), (OR=17.23; 95% CI: 5.02 – 59.26; p<0.001).

Multivariate analysis

Binary logistic regression using the backward conditional method was performed on multiple factors to eliminate confounding factors and examine the effect of the fourteen predictive factors which significantly associated (independently) with risky sexual behaviour. Six factors were found to predict risky sexual behaviour among street adolescents (Table 2).

Table 2: Predictors of Risky Sexual behaviour (Reduced model)

Variables	AOR	95% CI		p value
		Low	Upper	
Sex				
Male	2.44	1.11	5.39	0.027
Female	Reference			
Age in years				
<15	Reference			
15 - 16	2.51	1.11	5.72	0.028
17 - 18	5.13	1.42	18.55	0.013
Overall knowledge score (grade)				
Poor	Reference			
Moderately good	2.01	0.41	9.72	0.387
Good	2.78	0.59	13.03	0.195
Very good	8.13	1.77	37.30	0.007
Parents/Guardians as a source of SRH information				
Yes	0.31	0.13	0.74	0.008
No	Reference			
Ever gone for a HIV test				
Yes	3.12	1.42	6.85	0.005
No	Reference			
Combination of types of drugs and substance use				
None	Reference			
1 - 2 types	2.33	0.88	6.16	0.087
>2 types	11.93	2.98	47.81	<0.001

Male gender was significantly associated with Risky sexual practices (AOR=2.44; 95% CI: 1.11 – 5.39; p=0.027). A male participant was 2.44 times more likely to engage in Risky sexual practices compared to a female participant.

The analysis of age revealed that age 15 - 16 years was significantly associated with Risky sexual practices (AOR=2.51; 95% CI: 1.11 – 5.72; p=0.028). A participant aged 15 - 16 years was 2.51 times more likely to engage in Risky sexual practices compared to one aged <15 years. Similarly, age >16 years was significantly associated with Risky sexual practices (AOR=5.13; 95% CI: 1.42 – 18.55; p=0.013). A participant aged >16 years was 5.13 times more likely to engage in Risky sexual practices compared to one aged <15 years.

A ‘very good’ overall knowledge score was significantly associated with Risky sexual practices (AOR=8.13; 95% CI: 1.77 – 37.30; p=0.007). A participant who scored ‘very good’ was 8.13 times more likely to engage in Risky sexual practices compared to one that scored ‘poor’.

Parents/Guardians as a source of SRH information was significantly associated with reduced Risky sexual practices (AOR=0.31; 95% CI: 0.13 – 0.74; p=0.008). A participant who received SRH information from parents/guardians was 69% less likely to engage in Risky sexual practices compared to one that did not receive from parents/guardians.

Ever going for a HIV test was significantly associated with Risky sexual practices (AOR=3.12; 95% CI: 1.42 – 6.85; p=0.005). A participant who reported to have ever done a HIV test was 3.12 times more likely to engage in Risky sexual practices compared to one that have never done.

High combination of specific drugs and substance used was associated with Risky sexual practices. Previous use of more than 2 combinations was significantly associated with Risky sexual practices (AOR=11.93; 95% CI: 2.98 – 47.81; p<0.001) compared to none. A participant who reported to have used more than 2 combinations drugs and substance was 11.93 times more likely to engage in Risky sexual practices compared to one that have never used.

DISCUSSION

Knowledge and attitudes on sexual and reproductive health among street adolescents.

The study established that the adolescents in contact with the streets had relatively high knowledge on sexual and reproductive health (74.9% scored above ‘moderately good’). They were also able to negate most misconceptions and myths around HIV/AIDS. This knowledge level is above most studies carried out in other parts of Africa and Asia on SRH among regular adolescents. A study carried out in Ghana, among adolescents indicate knowledge level ranging from 49% to 56% (19). This indicates that street adolescents have higher knowledge levels on SRH as compared to other adolescents and with the main source of information being their peers and NGOs/CBOs. However the knowledge does not translate to practice as indicated in the study.

In concurrence with most studies, the knowledge on HIV/AIDS supersedes knowledge on all other SRH issues (UNFPA, 2000). This is due to the focus on HIV/AIDS programming in the past years both by the government and civil society. Further in agreement

with KDHS (18) this knowledge level is lower than that of adults above 20 years which points out to the fact that the knowledge level on HIV/AIDS among adolescents is lower than that among adults.

Sexual behavior / practices among street adolescents

Sixty percent of the adolescents were found to have willingly experienced sexual intercourse in their lifetime with an older friend with 41.9% having had their sexual debut between the age of 10 and 15. This is much higher than the national average according to the KDHS report, 2008, which indicate that 12% of young women and 22% of young men now aged 15–19 had had sex before they were 15 years old. The study found a mean sexual debut of 13 years. This is much lower than what most studies have found out around Africa; a study by Chinyere and Funmi in 2008 on SRH among adolescents in Nigeria indicate a mean sexual debut age of 15 years (0) while another study carried out in Ghana indicate that majority of females and males aged 20-24 had their sexual debut before the age of 18 and 20 (19). In Kenya the sexual debut age is placed at 18 yrs for urban youth (1) while in Uganda the sexual debut is between 15 and 18 years (2).

The adolescents attributed their sexual activity to search for love, pleasure, belonging and source of income. This agrees with previous studies that have indicated that street children have sex for love and belonging, security, source of income and punishment (WHO, 2008). Consequently, the early sexual debut could be attributed to multiple factors in relation to streetism which include lack of parental love and care, low self image and economic circumstances (3).

Despite high knowledge levels on SRH, a relatively small proportion of the adolescents (25.6%) used a condom during their sexual debut and consequent sexual experiences. This is consistent with the results of a study carried out among high risk adolescents in USA which indicated that a high percentage (67%) of these adolescents did not use condoms in their last intercourse (4). This is mainly due to negative attitude towards the condoms as exemplified by a comment by one of the adolescents that use of condom would bring out a sex worker character.

Approximately twenty percent (19.7%) of the adolescents reported that they had ever had sexual intercourse when somebody was physically forcing or threatening them with a forty five percent (45.3%) reporting that they ever had forced someone into sexual intercourse. This could be related to the exclusion and need for assertion by this group of adolescents. It also concurs with the high sexual

abuse (sodomy) on the streets reported in the key informant interviews especially among the younger boys. The level of sexual abuse concurs with studies carried out in Ethiopia (5) that indicated 28.6% of the street adolescents had been sexually abused. However the study noted the possibility of the sexual abuse levels being higher than 28.6% as the quantitative data contradicted the qualitative data as is the case for the current study.

Sixty two percent of adolescents (62.1%) reported that they had ever gone for HIV test. This was found to be positively associated with risky sexual practices and thus may have been as a result of the perceived risk. This percentage is high in relation to 4% of adolescents in Uganda (2) and 35% among females and 19% among males for adolescents in Kenya (6).

Despite high knowledge on contraceptives, the utilization was found to be low. This could be due to the fact that most of the girls opted to use either condoms or pills irregularly. Thirteen percent of the adolescents confirmed to have been pregnant at least once in their lifetime with the live births ranging from 1 to 3.

A high percentage of the adolescents (43.1%) were found to be using drugs and substances of abuse with the most used drugs being alcohol, marijuana, cigarettes and glue. This is comparable to 41% in Zimbabwe (7) but way below 95% in Egypt (8). Use of more than 2 drugs was positively associated to risky sexual behaviour. This is in line with qualitative data which pointed towards increased sexual abuse when the adolescents were intoxicated.

Contrary to programming expectations, knowledge on SRH was found to be positively related to risky sexual practice. A 'very good' overall knowledge score was significantly associated with risky sexual practices. Many studies that have looked into the relationship between knowledge on HIV/AIDS, STIs and contraception use vis a vis sexual debut and sexual practice have indicated either no relationship (29) or increased risky sexual behavior (30 and 31). However since the study was cross sectional it is not possible to tell which came first, knowledge or sexual practice. This study further revealed that age was significantly associated with Risky sexual practices. A participant aged 15 - 16 years was 2.51 times more likely to engage in risky sexual practices compared to one aged <15 years. Further a participant aged >16 years was 5.13 times more likely to engage in Risky sexual practices compared to one aged <15 years. This is consistent with other studies carried out the world over that have indicated a direct relationship between age and risky sexual behavior irrespective of age (32;33; 35;, and 35). Though initially the study had found an association between education level and risky sexual behaviour practices, on further analysis

this was found to have been confounded by age. This is in line with previous studies that either found no relationship (30; 36and37) or found that having a higher education level actually increased the risk of sexual initiation, and this was particularly true among male adolescents (38, 39and40).

The source of SRH information was found to be a key determining factor of SRH behaviour among adolescents. Parents/guardians as a source of SRH information was significantly associated with reduced Risky sexual practices. A participant who received SRH information from parents/guardians was 69% less likely to engage in Risky sexual practices compared to one that did not receive SRH information from parents/guardians. This concurs with other studies that found that when adolescents biological parents presence led to a less probability of engaging in sex (41;31;39;36; 40and42). Other studies also found that adolescents who lived away from home at an early age were more likely to have had sex compared with those who stayed at home (43) Further adolescents who perceived their parents to be in less stable relationships were significantly more likely to engage in premarital sex (34).

Conversely, peers as a source of SRH information was significantly associated with higher probabilities of engaging in risky sexual behaviour. Studies have shown a positive relationship between peer discussions on SRH and sexual practice (31;45). For example, in Cameroon, females who reported discussing sexual issues with their friends and peers often were more than twice as likely as other females to have become sexually active by the age of 15 (45). Similarly, in Zambia, males and females who communicated with a close friend about reproductive health issues were more than three times more likely to had ever had sex compared with those who had not had such conversations (31). However, because these studies used cross-sectional survey designs, it is difficult to determine whether those who have had sex are just more likely to discuss sex with their friends or whether discussing sex is a precursor to having sex.

Use of drugs and substances of abuse was found be positively associated with risky sexual practices. High combination of specific drugs and substance used was associated with Risky sexual practices. A participant who reported to have used more than 2 combinations drugs and substance was 11.93 times more likely to engage in Risky sexual practices compared to one that have never used. This is in line with other studies carried out on adolescents which indicate that adolescents who used drugs (mainly marijuana) were much more likely to be sexually experienced than adolescents who did not (46;31;47). Further use of alcohol significantly increased the

odds that an adolescent has already engaged in sex (46;31;47;42). In Zambia, adolescents who used alcohol were almost two times more likely to have had sex (31), while in Thailand, males who used alcohol were more than four times as likely to have had sex (42). This could be attributed to the fact that the driving factors for drugs abuse are similar to those of risky sexual behaviour as they are both deviant behaviour. Further drugs and substance abuse affects the decision making capacity of the adolescent leading to lose of guard.

Ever going for a HIV test was significantly associated with Risky sexual practices. A participant who reported to had ever done a HIV test was 3.12 times more likely to engage in Risky sexual practices compared to one that have never done. This could indicate self testing or referral as a result of exposure which and points out to the very risky sexual behaviour.

Health seeking behavior among street adolescents.

Majority of the youth reported to have sought SRH services from public health centres (38.1%) and private health centres (38.1%). This is in line with adolescents in Uganda who sought their SRH services from health centres (22). Amongst the most sought services included VCT, education and counseling contrary to adolescents in Uganda who seek most for contraceptives and STI treatment (22).

The most utilized form of contraception was the condom and the pill for a smaller percentage of adolescents. Other studies have indicated condoms as the most preferred form of contraception for those adolescents using contraception (48) The preferred source of condoms for the street adolescents was found to be shops (50.4%), clinics and friends at 33.3% each. This could be attributed to the fact that most adolescents work and thus would find it easier to buy the condoms than to go to the clinics where they feel unaccepted as indicated in the study. Some of the adolescents felt that the gender of the health worker, attitude and distance make it difficult for them to go access SRH services such as contraception from the clinics. This discomfort could have led to the fact that the adolescents seek more of curative than preventive services as indicated in the study. They only seek the services when they have no otherwise as they need treatment.

Organizations such as CBOs, NGOs, FBOs (67.7%), peers (69%) and radio (39%) are the main source of SRH information for these adolescent. This is contrary to Uganda and Zambia where the main sources and preferred source of SRH information are teachers, health workers and the media (19; 22). This could be due to the fact that the street adolescents

have no access to teachers or the media but on the other hand are in rehabilitation programs through which they get SRH information.

Despite the inverse relationship between peers as a source of SRH information and sexual behaviour, peers are the main source of information for this group of youth and thus efforts should be put in place to understand the inverse relationship and correct the situation.

Conclusion

The street adolescents have higher knowledge (74.9%) on sexual and reproductive health in relation to the regular adolescent (50%). However despite the high knowledge levels, most of the street adolescents engage in risky sexual behaviour and practices (55%) in line with studies held in different parts of the world. These include early sexual debut (10 -15 years) with some having their sexual debut before the age of 10, multiple partners, lack of use of protection such as condoms and use of drugs and substances of abuse among others.

Gender (male), age (above 15 years), knowledge level (high knowledge), parents and guardians as source of information and HIV testing were found to be predictive of risky sexual behavior among the street adolescents. While the main source of SRH information are peers and civil society, parents / guardians as a source of SRH information was found to be the greatest impact on practice.

It is thus critical that a holistic sustainable intervention is developed to support ASRH within the rehabilitation of street children keeping in mind that most of them are adolescents and/or initiated to early exposure to reproductive health risks. ASRH programming should also focus on the males, ages 10 to 15 and strengthening of peer education with the involvement of the parents. Drugs and substances of abuse are critical to sexual and reproductive health and thus should be integrated in ASRH programming in order to get sustainable results. Further research and policy development is required to identify factors leading to the gap between knowledge and practice for this group of adolescents. It is also critical that future studies on street children disaggregate data for children, adolescents and youth separately to ensure apt programming for the 3 distinct groups on in contact with the streets

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Author's Note

I, Rosemary W. Kamanu, declare that this is my original work and has not been presented to any other university for award of a degree.

Acknowledgement

I would like to sincerely acknowledge my supervisors, Prof. Zipporah Nganga of JKUAT and Mr. Muttunga of KEMRI for their continued encouragement, patience and technical support. Without their candid support and direction, this thesis would not have been finalized.

I am sincerely indebted to my employer, AMREF, for supporting me technically and financially to complete my thesis from which this article is drawn. I would specifically like to mention Hellen Gakuru and Millicent Namusonge.

My sincere gratitude go to my interviewers, who worked tirelessly in very challenging situation to collect the necessary data.

Further, I would like to thank the District Children's Office and the District Medical Office, Dagoretti district for allowing me to work with the children and providing invaluable information on this topic respectively. Special thanks go to all the study participants for taking their time to share very intimate personal information with us, without which this study would not have been.