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Research Article

# Impact of community strategy package on uptake of reproductive tract infections health services among young street females in the municipality of Eldoret, Kenya

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ABSTRACT

*Background:* Despite the intervention of free medical care services for street children by a dedicated clinic in Eldoret municipality, health care service of young street females (YSFs) is still deficient. The present study aimed to evaluate the impact of the community strategy package on the uptake of reproductive tract infections (RTI) health services among the target population.

*Materials and methods:* A pre-test-post-test quasi-experimental with a qualitative and quantitative approach was applied among the YSFs aged 10–24 years. The study used structured questionnaires and key informant interviews to collect data from the respondents.

*Results:* The study enrolled a total of 77 young street females in Eldoret municipality. A significantly higher proportion of respondents reportedly first sought treatment for RTI at a health facility after the implementation of the community strategy package (97.1%) when compared to the proportion of respondents who first sought treatment at a health facility in the pre-intervention phase (51.0%)($p < 0.001$). Early seeking of treatment improved significantly after the introduction of the intervention; 72.0% and 94.1% of the respondents sought treatment early during the pre-intervention and post-intervention phase, respectively ($p = 0.011$).

*Conclusion:* The study recommends the adoption of the community strategy as an intervention to increase the uptake of RTIs health services and promotion of the reproductive health of young street females.

## 1. Introduction

Community strategies such as onsite health education/counseling and health facility referrals by an outreach person have been shown to act as a catalyst and change agent that enables individuals to take responsibility and control of matters regarding their health improvement.[1,2] The community strategy's overall purpose is to improve community access to health care to increase production and, as a result, reduce poverty, hunger, and child and maternal fatalities, as well as improve educational achievement at all stages of life.

In underdeveloped nations, reproductive tract infections (RTIs) are common and have been linked to health problems.[3] RTIs have been associated with undesirable pregnancy consequences.[4] RTIs comprise sexually transmitted infections (STI), infections resulting from overgrowth reproductive tract normal flora,[5] and infections related to inadequate prevention practices during abortion and insertion of intrauterine

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devices.[6] Research shows that Kenya and India have high rates of RTI's ranging between 52% and 92%.[7]

Young females living in the streets are highly exposed to sexual and reproductive health problems. Their vulnerability is heightened by their limited understanding of the adolescent-associated changes, inadequate empowerment in making healthy choices, and inability to access appropriate services.[8] The community strategy package that the study employed consisted of site visits, syndromic screenings, referrals of suspected cases, and counseling.

## 2. Materials and methods

### 2.1. Study area

The study was conducted in Eldoret municipality, a rapidly growing cosmopolitan town in western Kenya with an estimated population of 289,380, making it Kenya's fifth largest town. It is situated at 0.52° North latitude, 35.28° East longitude, and 2116 m above sea level. It serves as the capital of Uasin Gishu County. About fifty-one per cent (51.8%) of the population live under the poverty line, exceeding the national average of 47.2%.

## 3. Research design and study population

The current study utilized a pre-test-post-test quasi-experimental study design. The study population was young street females (YSFs) who; spent both nights and days in the street ('of the street') and those spending days only ('on the street'). Street children in the municipality of Eldoret exist in small communities/homes called barracks/bases. Purposive sampling was used to select the study population in these barracks.

### 3.1. Inclusion and exclusion criteria

Eligible respondents for the study were young street females between the ages of 10–24 years who had spent at least two months in the streets and could consent or assent to participate in the study. The study excluded young street females who were mentally unstable and eligible but not willing to consent to the study.

### 3.2. Sampling design

Purposive sampling was used to recruit the respondents in the study. This sampling design enabled the study to maximize the number of participants. Street outreach workers were involved in the identification of respondents.

### 3.3. Data collection

#### 3.3.1. Interviews

A questionnaire was administered to the respondents to determine the health-seeking behaviour of the street girls, factors associated with RTIs and factors influencing the uptake of healthcare services (Supplementary Material 1). The questionnaire consists of three different sections; the first segment was used to collect the socio-demographic data of the respondent. The second section examined the respondent's health-seeking behaviour. The third section captured the factors influencing the uptake of services after the intervention.

#### 3.3.2. Data analysis and presentation

Descriptive analyses were done with categorical data being described using frequencies, absolute numbers, and proportions. Continuous data were summarized using appropriate measures of central tendencies. Normally distributed continuous data were summarized using means and standard deviations while continuous data exhibiting deviation from normal distribution were summarized using medians and interquartile ranges. Bivariate analysis to assess the association between various independent variables and the dependent variable was conducted using chi-square ($\chi 2$) tests. Binary logistic regression analysis was also done to control for confounders in the test for associations. The level of significance for hypothesis testing was set at $p \leq 0.05$.

## 4. Results

### 4.1. Study process

Fig. 1 shows the summary of the study process. From March to September 2019, 100 eligible young street females aged 10–24 years in Eldoret municipality were assessed for recruitment. A total of 23 women were excluded as they did not consent to the study while the rest consented. During the end-line assessment, 48 participants were recruited (62% of the initial sample). Those who were lost to follow-up were 29 (38% of the initial sample); eight (10%) refused to be interviewed again at this stage while the rest (21, 27%) had already moved from the follow-up address and were untrackable.

### 4.2. Assessment of the socio-demographic characteristics of the study participants at baseline and end-line

Table 1 shows the findings of an assessment of the socio-demographic characteristics of the study participants at the two observation points (pre-intervention and post-intervention phases). There was no significant variation in the ages of the respondents who were recruited in the pre-intervention phase (20.2 ± 0.40 years old)and post-intervention phase (20.8 ± 0.50 years old), respectively. During the pre-intervention phase, the proportion of the respondents aged between 13 and 15 years, 16–19 years, and 20 years or more were 13.0%, 24.7%, and 62.3%, respectively. The corresponding proportions during the post-intervention phase were 8.3%, 29.2%, and 62.5%. There was no statistically significant difference in the distribution of the respondents by these age categories ($p = 0.671$).

Marital status and level of education did not differ significantly among the study participants recruited in the pre-intervention and post-intervention phases of the research ($z = -1.033$, $p = 0.302$ and $z = -1.386$, $p = 0.166$, respectively). In both phases of the study, a vast majority of the enrolled YSFs were unemployed, and there was no significant difference in the proportions (pre-intervention 94.8%, post-intervention 85.4%, $z = 1.802$, $p = 0.072$). The place of residence and the period the respondents had been on the street were not significantly different in the pre-intervention and post-intervention groups ($z = 1.572$, $p = 0.116$, and $p = 0.262$, respectively).

### 4.3. Assessment of the effectiveness of the community strategy package on the health-seeking behaviour of the respondents

Table 2 shows the evaluation of the effectiveness of the community strategy package on the health-seeking behaviour of the respondents. Awareness of RTI increased significantly following the implementation of the community strategy package, with the proportion of respondents who had heard of RTI increasing from 80.5% during the pre-intervention phase to 97.9% during the post-intervention phase (17.4%; 95 CI:5.4%–29.4%, $z = 2.832$, $p = 0.005$).

A significantly higher proportion of respondents reportedly first sought treatment for RTI at a health facility after the implementation of the community strategy package (97.1%) when compared to the proportion of respondents who first sought treatment at a health facility in the pre-intervention phase (51.0%) (46.1%; 95 CI:26.3%–66.0%, $z = 4.558$, $p < 0.001$). Early seeking of treatment (same or next day) improved significantly after the introduction of the intervention; 72.0% and 94.1% of the respondents sought treatment early during the pre-intervention and post-intervention phase respectively (22.1%; 95 CI: 5.0%–39.2%, $z = 2.534$, $p = 0.011$).

The proportion of respondents who reported seeking treatment at the

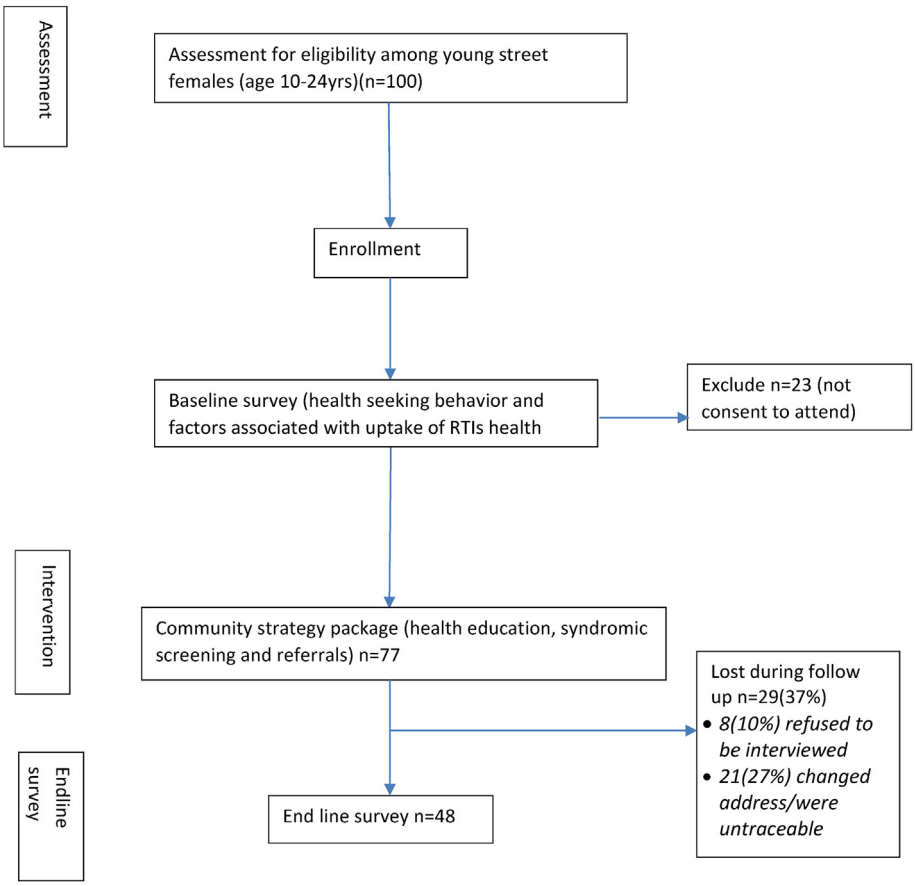


**Fig. 1.** Flow chart summarizing the study process.

advanced stage of disease ('In the serious stage of disease and its symptoms') reduced by 73.9% (95% CI: 95.6%–52.5%) following the introduction of the community strategy package ($p < 0.001$).

## 5. Discussion

There was a significant positive change in the level of awareness among YSFs, as seen with the remarkable increase among those respondents who had ever heard of STIs as compared with the pre-intervention level increasing from 80.5% during the pre-intervention phase to 97.9% during the post-intervention phase ($p < 0.05$). This could be attributed to the individual health education and counseling during the intervention.

Lack of information among YSFs about RTIs regarding early sign detection, the predisposing factors, and how to prevent them from contracting such infections can expose them to RTIs. These findings present a picture similar to a study done by a team led by Mandalazi [9]which stated that street children have a significantly lower level of accurate information on HIV and AIDS and other STIs, especially on the mode of transmission and prevention measures. Few respondents were able to confirm whether they had ever contracted an STI due to the lack of knowledge of the symptoms of STIs. The observed results could be attributed, at least in part, to the intervention put in place as part of the study.

A systematic review on health-seeking behaviors in resource-constrained nations indicated that health education effectively increases knowledge and uptake of reproductive health care services among women in resource-constrained settings.[10] There was a tremendous improvement in the respondents' health-seeking behaviour after implementing the community strategy package. After the intervention, 97.1% of the participants indicated that they sought treatment for RTIs compared to 51% at the pre-intervention level in hospital/health facility. This can be attributed to the awareness created during the health education exercise, which was part of the community strategy package. These findings agree with those of other studies done elsewhere.[11–13]

A high proportion of participants would seek treatment at the onset of the infection after the intervention compared to the pre-intervention phase (16% increment). This could be attributed to the community strategy package, which included health education based on the recognition of infection symptoms and referral to the health facilities for treatment. The number of respondents who would seek treatment at the advanced stages of the disease significantly reduced to lower levels from 79.6% to 5.7% ($p = 0.001$).

Most of the respondents (98%) reported not seeking health care services early instead of waiting till the disease got to the advanced stage compared to the figures at the pre-intervention phase. This perhaps is due to individual counseling and health education on the complications associated with the advanced stages of these infections, which was part of the community health strategy package. These findings are similar to the study done by Samiksha and others that indicated a substantial increase in the number of women seeking early treatment of RTIs at the onset of symptoms. Health education equips women with knowledge on how to identify symptoms associated with RTIs, and in addition, it informs them on the consequences of these infections if not treated.[13] In addition, health education demystifies the stigma associated with RTIs hence the increase in uptake of RTIs health care service.[14]

The study respondents were eight times more likely to visit health facilities as their main place of care after implementing the community strategy package compared to baseline levels. Moreover, the respondents were nine times more likely to visit the health facility to recover than their perceptions at the pre-intervention stage. This phenomenon can perhaps be attributed to the health education and the referrals carried out

**Table 1**
Socio-demographic characteristics of the study participants at baseline and end-line assessment.

| | Phase | | | | % Diff (95% CI) | z | *p-value* |
|---|---|---|---|---|---|---|---|
| | Pre-intervention | | Post-intervention | | | | |
| **Age (mean ± standard error, SE)** (years) | 20.2 ± 0.40 | | 20.8 ± 0.50 | | −0.59 (−1.86–0.68) | | 0.358 |
| **Age (years) n (%)** | | | | | | | |
| <18 | 18 | 23.4 | 10 | 20.8 | −2.5 (−17.6–12.5) | −0.332 | 0.740 |
| ≥18 | 59 | 76.6 | 38 | 79.2 | 2.5 (−12.5–17.6) | 0.332 | 0.740 |
| **Marital status n (%)** | | | | | | | |
| Not married | 36 | 46.8 | 27 | 56.3 | 9.5 (−8.5–27.5) | 1.033 | 0.302 |
| Married | 41 | 53.2 | 21 | 43.8 | −9.5 (−27.5–8.5) | −1.033 | 0.302 |
| **Level of education n (%)** | | | | | | | |
| Primary/No formal education | 66 | 85.7 | 45 | 93.8 | 8.0 (−3.3–19.4) | 1.386 | 0.166 |
| Secondary/ Tertiary | 11 | 14.3 | 3 | 6.3 | −8.0 (−19.4–3.3) | −1.386 | 0.166 |
| **Occupation n (%)** | | | | | | | |
| Employed | 4 | 5.2 | 7 | 14.6 | 9.4 (−0.8–19.6) | 1.802 | 0.072 |
| Unemployed | 73 | 94.8 | 41 | 85.4 | −9.4 (−19.6–0.8) | −1.802 | 0.072 |
| **Residence n (%)** | | | | | | | |
| On Street | 7 | 9.1 | 9 | 18.8 | 9.7 (−2.4–21.7) | 1.572 | 0.116 |
| Of Street | 70 | 90.9 | 39 | 81.3 | −9.7 (−21.7–2.4) | −1.572 | 0.116 |
| **Duration on the street n (%)** | | | | | | | |
| More than 1 year | 72 | 93.5 | 47 | 97.9 | 4.4 (−3.3–12.1) | 1.122 | 0.262 |
| ≤1year | 5 | 6.5 | 1 | 2.1 | −4.4 (−12.1–3.3) | −1.122 | 0.262 |

during the onsite/home visits to the street females. Similar findings were recorded after home visits and health education interventions on the uptake of maternal and child health care services during a study done in India.[15]

After implementing the community strategy package, the study concluded a tremendous improvement in the respondents' health-seeking behaviour due to the awareness created during the implementation of the intervention. The study also concluded that there was more commitment to seeking treatment early at the onset of the infection after the intervention than in the pre-intervention phase. At the same time, respondents were more likely to visit health facilities as their first point of care after implementing the community strategy package compared to baseline levels.

Our study is not without limitations. Noteworthy is the decrease in the number of participants after the intervention. This decreased the power of the study hence limiting the generalization of the study findings.

## 6. Conclusion

The implementation of the community strategy package revealed a positive outcome as it contributed to increased knowledge and uptake of health care services. The study recommends the adoption of the community strategy as an intervention to increase the uptake of RTIs health services and promotion of the reproductive health of YSFs.

## Ethics approval

Ethical approval was obtained from Mount Kenya University's ethical review committee and National Commission for Science, Technology, and Innovation (NACOSTI). Permission to conduct the study was obtained from institutions/persons in charge of child services and those organizations taking care of street children. The study sought permission to use laboratory facilities from the Uasin Gishu County Hospital management.

## Consent to participate

All study participants were requested to give written informed consent before participation in the study. Those found with RTIs were referred to the hospital for treatment or advised to seek medical attention. In addition, the study liaised with the organizations working with street families to ensure that those found with infection got treatment. Confidentiality was guaranteed by interviewing the respondents privately, and none of their personal information was recorded.

## Consent to publish

All the authors read and approved the manuscript.

**Table 2**
Assessment of the effectiveness of the community strategy package on the health-seeking behaviour of the YSFs.

| Attribute | Phase | | | | % Diff (95 CI) | z | *p*-value |
|---|---|---|---|---|---|---|---|
| | Pre-intervention n(%) | | Post-intervention n(%) | | | | |
| **Heard of RTI** | | | | | | | |
| Yes | 62 | 80.5 | 47 | 97.9 | 17.4 (5.4–29.4) | 2.832 | 0.005 |
| No | 15 | 19.5 | 1 | 2.1 | −17.4 (−29.4–5.4) | −2.832 | 0.005 |
| **Sought treatment** | | | | | | | |
| Yes | 49 | 63.0 | 33 | 68.1 | 5.1 (7.6–5.7) | 0.278 | 0.781 |
| No | 1 | 2.0 | 1 | 2.9 | 0.9 (−5.7–7.6) | 0.278 | 0.781 |
| **Time of seeking treatment** | | | | | | | |
| Same/next day | 36 | 72.0 | 32 | 94.1 | 22.1 (5.0–39.2) | 2.534 | 0.011 |
| More than one day later | 14 | 28.0 | 2 | 5.9 | −22.1 (−39.2–5.0) | −2.534 | 0.011 |
| **Disease stage at the time of Seeking treatment** | | | | | | | |
| In the serious stage of the disease | 39 | 79.6 | 2 | 5.7 | −73.9 (−95.6–52.2) | −6.678 | <0.001 |
| In the early stages and onset of symptoms mild | 10 | 20.4 | 33 | 94.3 | 73.9 (52.2–95.6) | 6.678 | <0.001 |
| **Point of seeking treatment** | | | | | | | |
| Hospital/health facility | 25 | 51.0 | 34 | 97.1 | 46.1 (26.3–66.0) | 4.558 | <0.001 |
| Other | 24 | 49.0 | 1 | 2.9 | −46.1 (−66.0–26.3) | −4.558 | <0.001 |
| **Stage of treatment \| Course of treatment** | | | | | | | |
| To recover | 20 | 40.8 | 33 | 94.3 | 53.5 (32.5–74.4) | 5.007 | <0.001 |
| Relieve the symptoms \| Not complete course of treatment | 29 | 59.2 | 2 | 5.7 | −53.5 (−74.4–32.5) | −5.007 | <0.001 |

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.gocm.2023.01.009.

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