

Prevalence of Conduct Disorder Symptoms among Adolescents Living in Selected Urban Informal Settlements in Nairobi, Kenya

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ABSTRACT

Conduct disorder (CD) is a behavioural disorder characterized by a persistent pattern of behaviours that violate the rights of others and age-appropriate social norms. Although evidence on adolescent mental health in Kenya is increasing, much of the available evidence on conduct disorder has been generated from school, institutional, rehabilitation, or correctional populations. Limited evidence is available on conduct-disorder symptoms among adolescents living within community settings in urban informal settlements. This study therefore estimated the prevalence of conduct-disorder symptoms among adolescents affiliated with youth organizations in two selected urban informal settlements in Nairobi, Kenya. A cross-sectional analysis of baseline screening data from a larger mixed-methods quasi-experimental study was undertaken in February 2026. The study was conducted among adolescents aged 12–19 years affiliated with two youth organizations located in Kariobangi North and Mathare North, Nairobi. The accessible population comprised 147 adolescents, all of whom were screened for conduct-disorder symptoms. Conduct-disorder symptoms were assessed using the Conduct and Oppositional Defiant Disorder Scale (CODDS). For this study, a score of 4.5 or higher on the conduct-disorder items was considered indicative of a positive conduct-disorder screen. Prevalence was estimated as the proportion of adolescents meeting the screening threshold, with 95% confidence intervals. Pearson's chi-square test was used to compare prevalence between the two study sites, while an independent-samples t-test was used to compare mean conduct-disorder scores. Among the 147 adolescents screened, 75 met the study criterion for conduct-disorder symptoms, corresponding to a prevalence of 51.0% (95% CI: 42.7–59.3%). Prevalence was 54.4% (95% CI: 41.9–66.4%) among adolescents in the control site and 48.1% (95% CI: 36.8–59.6%) among those in the intervention site. The difference between sites was not statistically significant (Pearson's χ^2 test, $p = .550$). The overall mean conduct-disorder score was 8.01 (95% CI: 6.8–9.2), compared with 8.18 (95% CI: 6.4–10.0) in the control group and 7.86 (95% CI: 6.2–9.5) in the intervention group. The difference in mean scores was not statistically significant ($p = .795$). A substantial proportion of adolescents screened within the two participating youth organizations met the study criterion for conduct-disorder symptoms. The prevalence observed was higher than estimates reported in general adolescent populations but broadly comparable with estimates from some higher-risk Kenyan populations. The findings highlight the importance of context-specific assessment of conduct-disorder symptoms among adolescents living in urban informal settlements.

KEYWORDS

Conduct disorder, adolescents, prevalence, informal settlements, Nairobi, Kenya, CODDS, adolescent mental health

I. INTRODUCTION

Adolescence is a critical developmental period characterized by substantial psychological, social, and behavioural changes. Behavioural disorders emerging during this period can affect educational attainment, family relationships, peer functioning, and subsequent psychosocial development (WHO, 2024). Conduct disorder is characterized by a persistent pattern of behaviour involving aggression toward people or animals, destruction of property, deceitfulness or theft, and serious violations of rules and social norms (American Psychiatric Association, 2023). Conduct disorder represents an important adolescent mental-health concern internationally. Estimates vary considerably according to population, diagnostic criteria, measurement instruments, age range, and study setting. Global estimates range from approximately 3% to 10%, with a pooled estimate of approximately 3% reported in a synthesis by Ayano et al. (2024). Such variation illustrates the importance of interpreting prevalence estimates within their specific epidemiological and methodological contexts.

The burden of emotional and behavioural difficulties is also considerable in Sub-Saharan Africa. Siqueira et al. (2022), reported substantial emotional and behavioural difficulties among adolescents in the region. However, conduct-disorder-specific epidemiological evidence remains comparatively limited. Lack of African representation in some large global syntheses is an important evidence gap. Evidence from Kenya suggests considerable variation in conduct-disorder prevalence across populations. Erskine et al. (2023) reported a prevalence of 2.8% among Kenyan adolescents in a national survey. In contrast, Gitonga (2017) reported prevalence estimates above 30% among adolescents in Nairobi secondary schools, while Kimathi (2022) reported a prevalence of 59.8% among adolescents in charitable institutions in Nairobi. Mbiriri (2021) reported a prevalence of 55.1% among adolescents in Borstal institutions in Nairobi. Studies differ in sampling frame, population characteristics, age composition, diagnostic criteria, instruments, and setting. Adolescents recruited from institutional or correctional settings may also represent populations with behavioural or psychosocial characteristics that differ from adolescents living within families and communities. There is a contextual gap in conduct-disorder symptoms among community-dwelling adolescents in urban informal settlements.

Urban informal settlements present a particularly relevant context for adolescent mental-health research. Adolescents living in resource-constrained communities may encounter overlapping social and environmental challenges, including poverty, family instability, and exposure to violence, educational disadvantage, and limited access to specialized mental-health services. These contextual circumstances do not imply that informal-settlement residence causes conduct disorder; rather, they provide an important setting in which adolescent behavioural health can be investigated.

In Nairobi, the existing evidence has predominantly focused on schools, charitable institutions, rehabilitation facilities, and correctional populations. There's limited evidence concerning adolescents living within families and community environments in urban informal settlements. Generating context-specific prevalence estimates is important for understanding the extent to which conduct-disorder symptoms are present among adolescents who may not otherwise encounter specialized mental-health or correctional services. The present study addressed this gap by estimating the prevalence of conduct-disorder symptoms among adolescents affiliated with two youth organizations within Nairobi. The specific objective was to establish the prevalence of conduct disorder among adolescents residing in two selected youth organizations within Nairobi.

II. METHODS

A. *Study design and setting*

A cross-sectional analysis of baseline screening data from a larger mixed-methods quasi-experimental study investigating conduct disorder and the effectiveness of Multisystem Therapy among adolescents in two selected urban informal settlements in Nairobi, Kenya. Baseline screening was conducted in February 2026. The study sites were Kariobangi North and Mathare North, located within Nairobi's Eastland's area. The two sites were selected because they serve adolescents living in resource-constrained urban communities and provided an appropriate community-based setting for examining conduct-disorder symptoms.

B. *Participants and sampling*

The accessible study population consisted of 147 adolescents aged 12–19 years affiliated with the two participating youth organizations. All 147 adolescents available within the sampling frame were assessed at baseline for conduct-disorder symptoms. Of the 147 adolescents screened, 75 met the study eligibility criterion and subsequently entered the quasi-experimental component. Participants were recruited through the participating youth organizations. The study population represented adolescents affiliated with these organizations only.

C. *Measurement of conduct disorder symptoms*

Conduct-disorder symptoms were assessed using the Conduct and Oppositional Defiant Disorder Scale (CODDS). CODDS is a measure that assesses conduct disorder symptoms in adolescents in accordance with the DSM-5 criteria. This subscale includes 15 items (items 10–24) that specifically measure conduct disorder, each scored on a 3-point Likert scale: 0 = Never, 1 = Sometimes, and 2 = Often. A cut-off of 4.5 and above indicates the presence of conduct disorder symptoms. Higher scores indicate more severe conduct-related behavioural issues such as physical aggressiveness, property destruction, deceitfulness, and substantial rule violations.

In terms of psychometric performance, the CD subscale has demonstrated high internal consistency. The internal reliability for Conduct Disorder, as reported by Raine et al. (2022), was 0.84. According to this study, the total Cronbach's alpha reliability for Conduct Disorder was 0.85. The study used a threshold of 4.5 or higher on the conduct-disorder component to identify participants meeting the study criterion for a positive conduct-disorder screen. Before the main study, the research instruments were pre-tested among 13 participants. The pre-test was undertaken to assess the suitability of the data-collection procedures and instruments in the study context.

D. *Data collection*

CODDS was administered to adolescents within the eligible age range, and scores were assessed against the study threshold. For the current manuscript, only the baseline screening data required to estimate prevalence were analysed.

E. Statistical analysis

Data were entered and analysed using Studio. Descriptive statistics were used to summarize the distribution of conduct-disorder screening results and CODDS scores.

Prevalence was calculated as:

$$\text{Prevalence} = \frac{\text{Number screening positive}}{\text{Total number screened}} \times 100$$

A 95% confidence interval was calculated around the overall prevalence estimate. Pearson's chi-square test was used to examine whether the proportion screening positive differed between the two study sites. An independent-samples t-test was used to compare mean conduct-disorder scores between sites. Statistical significance was assessed at $p < .05$.

F. Ethical considerations

Ethical approval for the study was obtained from the Daystar University Institutional Scientific and Ethics Review Committee (DU/ISERC), and research authorization was obtained from the National Commission for Science, Technology and Innovation (NACOSTI). Permission to access participants was obtained from the leadership of the participating youth organizations.

Written informed consent was obtained from participants aged 18 years and above, while assent and parental or guardian consent were obtained for participants below the age of majority, as applicable. Confidentiality was maintained through coded data and secure storage. Participants were informed of their right to withdraw from the study at any time.

III. RESULTS

A. Study population

A total of 147 adolescents from the two participating youth organizations were screened for conduct-disorder symptoms at baseline. Of these, 68 were from the Kariobangi site and 79 were from the Mathare site. Seventy-five adolescents met the study criterion for a positive conduct-disorder screen and were subsequently enrolled in the intervention study. Importantly, the denominator for the prevalence analysis was 147, because prevalence was intended to describe the occurrence of conduct-disorder symptoms among the entire accessible screening population rather than among only those selected for the intervention.

B. Prevalence of conduct-disorder symptoms

Of the 147 adolescents screened, 75 screened positive for conduct disorder symptoms, resulting in an overall prevalence of 51.0% (95% CI: 42.7–59.3%). The site-specific findings are presented in Table 1.

Table 1. Prevalence of conduct-disorder symptoms among adolescents screened at the two study sites

Study site	Total screened, n	Positive screen, n (%)	95% CI	p-value
Control	68	37 (54.4)	41.9–66.4	
Intervention	79	38 (48.1)	36.8–59.6	
Overall	147	75 (51.0)	42.7–59.3	.550

Note. Pearson's chi-square test was used to compare the distribution of positive screens between study sites. The prevalence was higher in the control site (54.4%) than in the intervention site (48.1%), but this difference was not statistically significant ($p = .550$). Therefore, the data did not provide evidence of a statistically significant difference in the prevalence of positive conduct-disorder screens between the two participating sites.

C. Conduct-disorder symptom scores

The overall mean conduct-disorder score was 8.01 (95% CI: 6.8–9.2). The corresponding mean was 8.18 (95% CI: 6.4–10.0) in the control site and 7.86 (95% CI: 6.2–9.5) in the intervention site. The difference in mean scores between the two sites was not statistically significant ($p = .795$).

Table 2. Mean conduct-disorder scores by study site

Study site	n	Mean CD score	95% CI	p-value
Control	68	8.18	6.4–10.0	
Intervention	79	7.86	6.2–9.5	
Overall	147	8.01	6.8–9.2	.795

Note. Independent-samples t-test.

IV. DISCUSSION

This study found that 51.0% of the 147 adolescents screened met the study criterion for conduct-disorder symptoms. The prevalence estimate is notable because the participants were recruited through community-based youth organizations rather than exclusively from correctional institutions, rehabilitation facilities, or other institutional settings. The finding contributes to the relatively limited evidence concerning conduct-disorder symptoms among adolescents living in urban informal settlements in Kenya. Much of the existing Kenyan evidence has focused on populations with institutional or psychosocial vulnerabilities. For example, Kimathi (2022) reported a prevalence of 59.8% among 174 adolescents in charitable institutions in Nairobi, while Mbiriri (2021) reported a prevalence of 55.1% among 78 adolescents in Borstal institutions.

The prevalence observed in the current study was within the range reported in some Kenyan high-risk populations, although it was lower than the estimates from the charitable and correctional settings described above. Such comparisons require caution because the

populations and measurement approaches differed. Adolescents recruited from correctional or institutional settings may differ systematically from adolescents participating in community youth organizations. The dissertation itself notes that differences in population characteristics, recruitment setting, age composition, instruments, and exposure to offending or institutional environments may contribute to variation in prevalence estimates. The present finding also differs from lower prevalence estimates reported in general adolescent populations. Erskine et al. (2023) reported a conduct-disorder prevalence of 2.8% among Kenyan adolescents in a national survey, and Gitonga (2017) reported prevalence exceeding 30% among adolescents in Nairobi secondary schools. The wide variation across these estimates reinforces the importance of considering population and measurement context when interpreting prevalence. A national adolescent survey, a school-based sample, a community youth-organization population, and a correctional or institutional population represent different sampling frames and may capture different levels of behavioural vulnerability. Differences in diagnostic criteria and assessment instruments can further influence prevalence estimates.

The absence of a statistically significant difference between the sites is also relevant. Although the observed prevalence was 54.4% in the control site and 48.1% in the intervention site, the difference was not statistically significant ($p = .550$). Similarly, the mean conduct-disorder scores did not differ significantly between the two sites ($p = .795$). These findings suggest that, within the accessible populations studied, conduct-disorder symptoms were present at broadly comparable levels across the two participating sites. The study provides useful community-level evidence from a population that has received comparatively little attention in Kenyan conduct-disorder research. From a clinical and public-health perspective, the findings support the value of early identification and appropriate assessment of conduct-disorder symptoms among adolescents in community settings. Screening within youth-serving organizations may provide an opportunity to identify behavioural difficulties before they result in severe educational, family, interpersonal, or legal consequences. However, screening should be followed by appropriate clinical assessment rather than treating a positive screening result as a definitive diagnosis.

A. *Strengths and limitations*

1. *Strengths*

A major strength of this study was the inclusion of the entire accessible baseline population of 147 adolescents for the prevalence analysis. This avoided restricting the prevalence denominator to the 75 adolescents subsequently selected for the intervention component. The study also addresses a population that has received comparatively limited attention in Kenyan conduct-disorder research: adolescents affiliated with community youth organizations and living in selected urban informal settlements. The use of a standardized conduct-disorder screening instrument and reporting of confidence intervals provides a quantitative estimate of the burden observed within the study population.

2. *Limitations*

First, participants were recruited through two youth organizations in selected areas of Nairobi. The study did not use probability sampling of adolescents living in Nairobi's informal settlements. The prevalence estimate cannot consequently be generalized to all adolescents

living in informal settlements in Nairobi or Kenya. Second, conduct disorder was assessed using CODDS rather than a comprehensive diagnostic interview. The reported prevalence should therefore be interpreted as the proportion meeting the study's screening criterion rather than as a definitive DSM-5-TR diagnostic prevalence.

V. CONCLUSION

This study identified a 51.0% prevalence of conduct-disorder symptoms (95% CI: 42.7–59.3%) among 147 adolescents screened through two youth organizations in selected urban informal settlements in Nairobi. The prevalence was 54.4% in Kariobangi and 48.1% in Mathare, with no statistically significant difference between the sites. The finding adds community-based evidence to the Kenyan literature on adolescent conduct-disorder symptoms, which has historically included substantial evidence from school, institutional, rehabilitation, and correctional populations. The results indicate that conduct-disorder symptoms are also present among adolescents participating in community youth organizations in urban informal settlements.

VI. DECLARATIONS

Ethics approval and consent to participate

Ethical approval was obtained from the Daystar University Institutional Scientific and Ethics Review Committee (DU/ISERC), and authorization was obtained from the National Commission for Science, Technology and Innovation (NACOSTI). Permission to access participants was obtained from the participating youth organizations. Written informed consent and/or adolescent assent with parental or guardian consent was obtained according to participant age and applicable ethical requirements.

A. Consent for publication

Not applicable.

B. Competing interests

The author declares no competing interests.

C. Funding

Not applicable.

D. Authors' contributions

Judith Osok (JO): As the corresponding author, the author coordinated the research process, manuscript preparation, revisions, and communication with the journal.

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