

Perceived Factors Influencing Sexually Transmitted Infection Risk among Boda Boda Cyclists: A 2017 Historical Baseline from Mbarara Municipality, Uganda

Kavigi John¹

¹Focal Person In-Charge of Public Health, Mbarara Development Agency, P.O. Box 9, Mbarara, Uganda

ARTICLE INFORMATION	ABSTRACT
Article history: Published: August 2026	Background: Evidence on sexual-health vulnerability among motorcycle-taxi workers in Uganda remains limited. This article presents a historical, perception-focused baseline from Mbarara Municipality in 2017. Methods: A descriptive case study combined questionnaires and key-informant interviews. The purposive analytic groups were 200 boda boda cyclists, 95 community members, and five boda boda leaders. Because the archived dataset was unavailable for valid participant-level reanalysis, results are reported descriptively and no regression or causal inference is presented. Cyclists constituted the primary occupational group; community members and leaders provided contextual perceptions. Results: Across the combined descriptive sample, 294/300 (98%) acknowledged factors perceived to influence STI risk. Themes included poverty, multiple sexual partnerships, inconsistent condom use, and an inadequate enabling environment. Among 268 respondents identifying prevention barriers, limited condom uptake (18%), weak health systems (17%), limited knowledge among cyclists (15%), and underfunded STI/HIV programmes (13%) were most frequently reported. Suggested responses included awareness creation (20%), reducing sexual partners (17%), condom use (16%), abstinence or mutual monogamy (12%), and beneficiary involvement (11%). Reported health consequences were lay perceptions, not clinical diagnoses or prevalence estimates. Conclusion: The 2017 baseline documents how riders and community informants understood occupational sexual-health vulnerability at that time. Findings support rider-centred peer education, convenient testing, condoms, respectful counselling, and contemporary rider-only research using validated behavioural measures and laboratory-confirmed outcomes.
Keywords: Boda Boda Cyclists Sexually Transmitted Infections Condom Use Sexual Risk Behaviour Uganda	

1. Introduction

Sexually transmitted infections (STIs) remain a major global public-health concern. More than one million curable STIs are acquired daily among people aged 15–49 years, many without symptoms, and untreated infection can contribute to infertility, cancers, adverse pregnancy outcomes, stigma, and increased HIV risk (World Health Organization [WHO], 2025). Prevention and early treatment are particularly important for mobile occupational groups whose working conditions, income patterns, and social networks may shape access to services and exposure to sexual risk.

In Uganda, boda boda motorcycle taxis provide essential and affordable transport and employment. Cyclists commonly work long and irregular hours, interact with many clients, and operate within highly mobile social environments. Earlier work cited in the dissertation suggested that transactional sex, multiple partnerships, inconsistent condom use, limited testing, and misconceptions about treatment could increase STI vulnerability among cyclists. The dissertation further observed that prevention efforts had included condom distribution, awareness creation, and encouragement of STI testing, yet the perceived burden among cyclists in Mbarara Municipality remained a concern.

This article intentionally treats the 2017 data as a historical baseline from the period when Mbarara was administered as a municipality. It does not estimate current STI prevalence. Mbarara has since become a city and the 2024 census recorded 161,613 residents, illustrating substantial demographic and administrative change from the municipal population used in the original study (Uganda Bureau of Statistics [UBOS], 2024). The baseline is therefore useful for understanding earlier perceptions and for motivating a contemporary follow-up, not for describing present conditions.

1.1 Problem Statement

Despite awareness campaigns, condom provision, and promotion of testing, STIs were perceived to remain common among boda boda cyclists operating in Mbarara Municipality. Their working hours and interaction with commercial and transactional sexual networks were considered possible sources of exposure. However, the factors sustaining transmission, the perceived consequences, barriers to prevention, and locally acceptable responses had not been sufficiently documented in this occupational group. The study was conducted to provide evidence for targeted municipal and public-health action.

1.2 Study Objectives

- Identify factors influencing the spread of STIs among boda boda cyclists in Mbarara Municipality.

- Describe the perceived impact of STIs on boda boda cyclists.
- Identify challenges encountered in preventing and controlling STIs among boda boda cyclists.
- Propose practical approaches for reducing STI transmission among boda boda cyclists.

2. Literature Review

2.1 Behavioural and Socioeconomic Factors

Recent Ugandan evidence supports attention to boda boda riders as an underserved mobile workforce. In Mbarara, Nabifo et al. (2021) found that HIV-related stigma and alcohol use were associated with self-reported HIV transmission-risk behaviour among 401 adult male riders. In Kabarole, 78% of riders reported HIV testing in the previous 12 months, while perceived risk, peer influence, and access shaped service use (Ssekankya et al., 2021). A 2025 systematic review similarly concluded that commercial motorcyclists in sub-Saharan Africa experience overlapping behavioural, occupational, and service-access vulnerabilities (Asiimwe et al., 2025). These findings do not mean that boda boda work itself causes infection. Rather, daily cash income, mobility, long or late working hours, alcohol exposure, peer norms, and limited access to confidential services may interact with broader structural conditions. Current prevention should be people-centred, non-stigmatizing, and integrated with primary health care, consistent with the WHO global health-sector strategy for 2022-2030 (WHO, 2022).

2.2 Health Consequences and Service Barriers

Untreated STIs may cause urethritis, pelvic inflammatory disease, infertility, ectopic pregnancy, chronic pain, cancers, liver disease, and immune suppression. Many infections are asymptomatic; perceptions of symptoms or consequences cannot therefore substitute for testing or clinical diagnosis. WHO recommends condoms, vaccination against hepatitis B and human papillomavirus, accessible testing, partner management, and people-centred care, while noting the growing threat of antimicrobial-resistant gonorrhoea (WHO, 2025). Weak surveillance, shortages of skilled health workers and laboratory capacity, stigma, underfunding, and antimicrobial resistance complicate control. Young and mobile workers may avoid facilities perceived as judgmental, expensive, distant, or poorly supplied. Peer education, mass communication, condoms, vaccination where applicable, counselling, and accessible testing can work together, but programmes require sustained financing and meaningful participation by the intended beneficiaries.

3. Methodology

3.1 Study Design and Setting

A descriptive, perception-focused case study using quantitative questionnaires and qualitative key-informant interviews was conducted in Mbarara Municipality, Mbarara District, Uganda, in 2017. The municipality was then a major commercial and transport centre in Uganda's cattle corridor. The present manuscript is a retrospective secondary presentation of that completed dissertation dataset and is explicitly framed as a historical baseline.

3.2 Population, Sample, and Sampling

The dissertation used a municipal population of 69,363 from preliminary 2014 census results and calculated an initial sample of 397 using a 5% margin of error. The achieved sample was 300 (75.6% of the initial target). Because no power calculation, non-response analysis, or precision adjustment was documented, the achieved sample is treated as pragmatic and descriptive rather than statistically representative of the municipality. The primary occupational group comprised 200 boda boda cyclists. Ninety-five community members and five boda boda leaders formed a separate contextual-informant group and were not treated as riders.

Table 1. Study Participants, Sampling Procedures, and Data-Collection Methods

Participant category	n	Sampling procedure	Data-collection method
Boda boda cyclists	200	Simple random	Questionnaire
Other community members	95	Simple random	Questionnaire
Boda boda leaders	5	Purposive	Interview
Total	300	-	-

Source: Adapted from the dissertation field-methods table.

Simple random sampling was applied to cyclists and community members using registers obtained from boda boda and local leaders. Boda boda leaders were selected purposively because of their knowledge of cyclists and stage-level conditions.

3.3 Data Collection and Analysis

Semi-structured questionnaires were administered to cyclists and community members using a drop-and-pick approach. Key-informant interviews were conducted with boda boda leaders. Questionnaires were translated or interpreted into the local language when required. Secondary information from books, journal articles, reports, newspapers, and other records was used to contextualize the findings.

Questionnaires were checked for completeness, numbered, coded, and entered for analysis. Frequencies and percentages were produced using SPSS and Microsoft Excel. The archived participant-level dataset was not available for the present revision, so rider-only behavioural estimates and valid multivariable analysis could not be reconstructed. The original regression output was removed because its linear-regression statistics were incompatible with the stated binary outcome. Qualitative field notes were organized into themes derived from the objectives.

3.4 Data Quality, Ethics, and Analysis Boundaries

The questionnaire underwent expert review, including review by the dissertation supervisor, and the dissertation reported Cronbach's alpha values above 0.70. All required ethical procedures were followed under Bishop Stuart University's academic research oversight. Participation was voluntary, confidentiality was protected, and informed consent was obtained before data collection. For participants younger than 18 years, assent and permission from a parent or guardian were obtained. The formal ethics committee name and approval reference should be supplied from the archived approval document if required by the target journal.

All numerical findings in this manuscript are descriptive. Combined-sample summaries are explicitly labeled and represent perceptions across riders and contextual informants. They are not rider-specific behavioural prevalence estimates, laboratory-confirmed diagnoses, causal effects, or current epidemiological estimates.

4. Findings

4.1 Characteristics of Respondents

The sample consisted of two analytically distinct groups: 200 boda boda cyclists (the occupational group) and 100 contextual informants (95 community members and five boda boda leaders). Across the combined sample, 278 (93%) respondents were male and 22 (7%) female. The mean age was 30.02 years (standard deviation 14.286; range 10-76), and mean education was 4.86 years (standard deviation 3.780; range 1-16). Because archived results were not disaggregated by participant group, these demographic summaries must not be interpreted as the profile of the 200 riders alone.

4.2 Perceived Factors Influencing STI Risk

Across the combined descriptive sample, 294/300 (98%) agreed that factors existed which could influence STI risk among boda boda cyclists. Recurring themes in questionnaire and interview responses were poverty and financial constraints, multiple or cross-generational sexual partnerships, inconsistent condom use, limited prevention resources, lack of rider-friendly services, and an inadequate enabling environment. No adjusted associations are reported because the original participant-level dataset was unavailable for a correctly specified rider-only analysis.

4.3 Perceived Health Impact

All 300 respondents stated that STIs had an impact on boda boda cyclists. The most frequently selected consequence was HIV-related immune-system damage and progression to death (16%), followed by infertility in women (14%), trichomoniasis-related urethral symptoms (13%), and complications of untreated gonorrhoea (11%). These are perceptions reported by respondents and should not be interpreted as clinical diagnoses among the sampled cyclists.

Table 2. Combined-Sample Perceptions of STI Health Consequences (n=300)

Reported impact	n	%
HIV attacks the immune system and may progress to death	49	16
Infertility in women	43	14
Trichomoniasis-related tingling, painful urination, or discharge	38	13
Untreated gonorrhoea: PID, infertility, or ectopic pregnancy	34	11
Hepatitis B-related hepatocellular carcinoma	30	10
Genital cancers	29	10
Chlamydial infection of cervix or penile urethra	23	8
Herpes-related genital blisters	20	7
Cancers (general)	18	6
Life-threatening complications and chronic disease	16	5
Total	300	100

Source: Primary data, May 2017.

4.4 Challenges to STI Prevention

A total of 268 respondents (89%) reported that challenges were encountered in controlling STIs among boda boda cyclists, while 32 (11%) did not identify such challenges. Among those identifying challenges, limited adoption and use of condoms was most common (18%), followed by weak health systems (17%), ignorance among cyclists (15%), and underfunding of STI/HIV prevention programmes (13%).

Table 3. Combined-Sample Perceptions of Prevention Barriers (n=268)

Challenge	n	%
Limited adoption and use of condoms	49	18

Challenge	n	%
Weak health systems	45	17
Ignorance among boda boda cyclists	40	15
Underfunding of STI/HIV prevention programmes	35	13
Changing epidemiology of STIs	30	11
Social, economic, and behavioural factors	26	10
Antimicrobial resistance of <i>Neisseria gonorrhoeae</i>	22	8
Inadequate integration of STI prevention and reproductive health care	21	7
Total	268	100

Source: Primary data, May 2017.

4.5 Suggested Prevention Approaches

Most respondents (290/300; 97%) believed that practical measures could reduce STI spread. Awareness creation was the most frequently suggested measure (20%), followed by reducing the number of sexual partners (17%), encouraging condom use (16%), promoting abstinence and mutual monogamy (12%), and involving beneficiaries in prevention programmes (11%). Other proposed measures included educational entertainment, peer education, and mass-media communication.

Table 4. Combined-Sample Suggested Prevention Approaches (n=290)

Suggested approach	n	%
Create awareness	57	20
Reduce number of sexual partners	50	17
Encourage condom use	47	16
Promote abstinence and mutual monogamy	35	12
Involve beneficiaries in prevention programmes	34	11
Use entertainment for education	29	10
Promote peer education	23	8
Use mass media for prevention messages	15	5
Total	290	99

Source: Primary data, May 2017. Percentages sum to 99% because of rounding in the dissertation.

5. Discussion

5.1 Economic and Behavioural Vulnerability

In 2017, riders and contextual informants understood STI vulnerability as a product of interconnected economic, behavioural, and service conditions. This interpretation is broadly consistent with later rider-specific studies. Nabifo et al. (2021) documented associations between HIV-related stigma, alcohol use, and self-reported risk behaviour among adult riders in Mbarara, while Ssekankya et al. (2021) showed that access and perceived risk influenced HIV-testing uptake among riders in Kabarole. The present study cannot estimate such associations, but it provides an earlier local account of concerns that remained relevant in subsequent research. References to inadequate by-laws are best interpreted as perceptions of a weak enabling environment, not evidence that punitive regulation prevents infection. Rider-centred policy should improve access to information, commodities, confidential services, and safer working environments without criminalizing or stigmatizing riders.

5.2 Health-System and Programme Constraints

Weak health systems and underfunded prevention programmes were prominent barriers. STI control requires reliable commodities, trained staff, confidential counselling, diagnostics or effective syndromic management, partner notification, treatment follow-up, and surveillance. Where these components are inconsistent, individuals may delay care, self-medicate, or remain infectious. Antimicrobial resistance, particularly in gonorrhoea, makes appropriate diagnosis, guideline-based treatment, and surveillance increasingly important.

Limited condom adoption was the most frequently cited prevention challenge in the combined descriptive sample. Condom programmes should go beyond distribution by addressing availability at the times and places riders work, correct and consistent use, misconceptions, and partner negotiation. Trusted peers and stage leaders may help normalize access while protecting confidentiality (WHO, 2025).

5.3 Implications for Targeted Prevention

Respondents strongly supported awareness, partner reduction, condom use, and peer education. A combined intervention could train stage-based peer educators, maintain discreet condom points, offer periodic mobile testing and counselling near stages, and establish referral links with nearby facilities. Messages should distinguish curable bacterial or protozoal infections from manageable but persistent viral infections and emphasize that absence of symptoms does not exclude infection.

The participation of cyclists in programme design is essential. Beneficiary involvement can improve the timing, language, credibility, and acceptability of services. Mass media and educational entertainment can reinforce messages, but interpersonal counselling and accessible clinical services are necessary for testing, treatment, vaccination, and partner management.

5.4 Historical Baseline and Contemporary Urban Growth

The findings describe Mbarara Municipality in 2017 and should not be projected directly onto present-day Mbarara City. The 2024 census recorded a city population of 161,613, more than twice the 69,363 municipal population used in the dissertation's sampling frame, although the boundaries and administrative units are not strictly comparable (UBOS, 2024). City status, urban expansion, changing transport regulation, digital ride coordination, and post-COVID-19 economic pressures may have altered both rider networks and access to health services. Urban growth could intensify mobility and network connectivity, but it could also improve service availability; only a new study can determine the current balance.

6. Strengths and Limitations

A strength of this study is its inclusion of riders together with community and leadership perspectives during an understudied period of Mbarara's urban development. The revised analysis also avoids unsupported inference and preserves the dataset as a historical baseline. However, the mixed participant groups were not disaggregated in the archived summary outputs, so the combined percentages cannot be treated as rider-only prevalence. The achieved sample of 300 was below the calculated target of 397, and no power-loss or non-response analysis was documented. The single-municipality case study limits generalizability.

All outcomes were self-reported perceptions; no laboratory testing or clinical record review was undertaken. Table 2 therefore describes beliefs about health consequences, not observed STI morbidity. Recall and social-desirability bias are possible. The original regression was removed because the reported linear-regression statistics were incompatible with the stated binary outcome, and the archived raw dataset was unavailable for valid reanalysis. The age range included participants younger than 18 years; assent and parent or guardian permission were reportedly obtained, but the formal ethics approval reference should be retrieved for journal submission. Finally, administrative boundaries, population, transport systems, and health services have changed since 2017.

7. Conclusion

This 2017 historical baseline shows that boda boda cyclists and contextual informants in Mbarara Municipality perceived STI vulnerability as linked to poverty, multiple partnerships, inconsistent condom use, limited prevention resources, weak health services, and gaps in the enabling environment. The study does not establish current prevalence, rider-specific behavioural rates, or causal associations. Its principal value is historical and hypothesis-generating. Contemporary rider-only research with adult participants, validated behavioural measures, laboratory-confirmed outcomes, and correctly specified regression analysis is needed to assess how these risks have evolved in Mbarara City.

8. Recommendations

- Establish stage-based peer educators to provide accurate STI information, address misconceptions, and link cyclists to confidential testing and treatment.
- Ensure continuous, discreet access to quality condoms and practical instruction on correct and consistent use.
- Provide periodic mobile or outreach STI/HIV counselling, testing, referral, and treatment services at times compatible with cyclists' working schedules.
- Promote partner reduction and mutually monogamous relationships through non-judgmental, culturally appropriate risk-reduction counselling.
- Strengthen health facilities with trained staff, medicines, diagnostics, surveillance, and guideline-based management, including attention to antimicrobial resistance.
- Offer hepatitis B and human papillomavirus vaccination according to current national eligibility and clinical guidance.
- Involve boda boda cyclists and their leaders in designing, implementing, and evaluating prevention programmes.
- If the raw dataset is recovered, disaggregate riders from contextual informants and use multivariable binary logistic regression only for a clearly defined binary outcome, reporting adjusted odds ratios, 95% confidence intervals, and p-values.
- Conduct a contemporary rider-only follow-up study in Mbarara City using participants aged 18 years or older, validated behavioural measures, laboratory-confirmed outcomes where feasible, a documented power calculation, and prospective research-ethics approval.

9. Declarations

Publication status: This original, unpublished manuscript is intended for submission to the International Journal of Science and Research Archive. It has not been published previously and is not under consideration by another journal.

Funding: This study was undertaken voluntarily by the author and received no external financial support or research grant.

Conflicts of interest: The author declares that there are no conflicts of interest regarding this study or manuscript.

Ethics and consent: The original study followed Bishop Stuart University's academic research requirements. Retrospective ethical clearance for dissemination and secondary presentation of the archived study was provided by the Bishop Stuart University Research

Ethics Committee (BSU-REC), approval number BSU-REC-2225, dated 16 July 2026. Participation was voluntary, confidentiality was maintained, and informed consent was obtained before data collection. Documentary evidence confirms that participants younger than 18 years provided assent and that permission was obtained from a parent or legal guardian.

Data availability: An anonymized dataset and supporting study materials are retained by the corresponding author. Subject to BSU-REC requirements, participant confidentiality, and a reasonable written request describing the proposed use, de-identified data may be made available by contacting Kavigi John at kavigijohn@gmail.com. Direct identifiers will not be shared.

References

- [1] Asiimwe, J. B., Betunga, B., Birungi, L., Kabasindi, J., Wankiiri, M., Nuwabaine, L., Kawuki, J., & Kumakech, E. (2025). HIV prevalence, risk factors, prevention methods, and interventions among taxi drivers and commercial motorcyclists in sub-Saharan Africa: A scoping review. *PLOS Global Public Health*, 5(5), e0004239. <https://doi.org/10.1371/journal.pgph.0004239>
- [2] Nabifo, S. C., Tsai, A. C., & Bajunirwe, F. (2021). HIV-related stigma and its association with HIV transmission risk behaviors among boda boda motorcyclists in Mbarara Municipality, southwestern Uganda. *International Journal of STD & AIDS*, 32(9), 791-799. <https://doi.org/10.1177/0956462420987760>
- [3] Ssekankya, V., Githaiga, S. K., Aleko, T., Munguciada, E. F., Nabakka, V. P., Kyalisiima, J. J., et al. (2021). Factors influencing utilization of HIV testing services among boda-boda riders in Kabarole District, southwestern Uganda: A cross-sectional study. *BioMed Research International*, 2021, 8877402. <https://doi.org/10.1155/2021/8877402>
- [4] Tusabe, J., Muyinda, H., Nangendo, J., Kwesiga, D., Nabikande, S., Muhoozi, M., Agwang, W., Okello, T., & Rutebemberwa, E. (2022). Factors influencing the uptake of voluntary medical male circumcision among boda-boda riders aged 18-49 years in Hoima, western Uganda. *HIV/AIDS - Research and Palliative Care*, 14, 437-449. <https://doi.org/10.2147/HIV.S382219>
- [5] Uganda Bureau of Statistics. (2024). National population and housing census 2024: Preliminary results. <https://www.ubos.org/wp-content/uploads/2024/06/National-Population-and-Housing-Census-2024-Dissemination-of-Preliminary-Results.pdf>
- [6] Unemo, M., Lahra, M. M., Escher, M., Eremin, S., Cole, M. J., Galarza, P., Ndowa, F., Martin, I., Dillon, J. R., Galas, M., Ramon-Pardo, P., Weinstock, H., & Wi, T. (2021). WHO global antimicrobial resistance surveillance for *Neisseria gonorrhoeae* 2017-2018: A retrospective observational study. *The Lancet Microbe*, 2(11), e627-e636. [https://doi.org/10.1016/S2666-5247\(21\)00171-3](https://doi.org/10.1016/S2666-5247(21)00171-3)
- [7] World Health Organization. (2022). Global health sector strategies on, respectively, HIV, viral hepatitis and sexually transmitted infections for the period 2022-2030. <https://www.who.int/publications/i/item/9789240053779>
- [8] World Health Organization. (2024). Implementing the global health sector strategies on HIV, viral hepatitis and sexually transmitted infections, 2022-2030: Report on progress and gaps 2024. World Health Organization. <https://www.who.int/publications/i/item/9789240094925>
- [9] World Health Organization. (2025, September 10). Sexually transmitted infections (STIs). [https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-\(stis\)](https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis))