Original Research

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# Assessing the determinants of mental health services utilization among adolescents aged 18–24 years in Kicukiro district, Rwanda, 2025

Marie Angele Gasangwa[1,2,*], Janvier Rukundo[1], Louange Bienvenu Byiringiro[1], Yves Gashugi[3,4]

[1]*Rwanda, Food & Drugs Authority, Kigali, Rwanda*
[2]*Mount Kenya University, Kigali, Rwanda*
[3]*Rwanda Psychological Society, Kigali, Rwanda*
[4]*University of Global Health Equity, Burera, Butaro, Rwanda*

***Corresponding author:**
Marie Angele Gasangwa

Mount Kenya University, Kigali, Rwanda

Email: arfico2012@gmail.com)

**Received:** January 15, 2026
**Accepted:** March 17, 2026
**Published**: March 31, 2026

**Cite this article as:** Gasangwa et al. Assessing the determinants of mental health services utilization among adolescents aged 18–24 years in Kicukiro district, Rwanda, 2025. *Rw. Public Health Bul. 2026. 7 (1): 7-19.* https://dx.doi.org/10.4314/rphb.v7i1.1

## ABSTRACT

**INTRODUCTION:** Mental health disorders are a growing public health concern, particularly among adolescents aged 18–24 years. This study aimed to assess the determinants of mental health service utilization among adolescents aged 18–24 years in Kicukiro District, Rwanda, focusing on socio-demographic characteristics, knowledge, attitudes, and access to services.

**METHODS:** A quantitative analytical cross-sectional design of 384 adolescents was conducted in schools, youth centers, and community settings. Data were collected via structured questionnaires covering socio-demographics, mental health knowledge, attitudes, and service utilization. Descriptive statistics, chi-square tests, and multivariable logistic regression analyses were conducted using SPSS 25 to identify factors associated with service use.

**RESULTS:** Overall, 35.4% of adolescents reported having accessed mental health services, with depression (87.5%), anxiety (66.2%), and stress (55.9%) as the main reasons. Awareness of services was high (83.6%), but knowledge of specific access points, particularly digital platforms, was limited. Utilization was significantly associated with age, gender, and attitudes toward mental health. Adolescents aged 21–23 years were 3.8 times more likely to use services compared to those ≤20 years (AOR = 3.753; 95% CI: 1.861–7.570), while females had higher utilization than males (AOR = 5.810; 95% CI: 3.249–10.389). Positive attitudes strongly predicted service uptake.

**CONCLUSION:** Despite high awareness, the majority of adolescents in Kicukiro District do not access mental health services. Interventions should target attitude change, stigma reduction, and improved accessibility through community, school, and digital platforms to enhance adolescent mental health service utilization in Rwanda.

## INTRODUCTION

Mental health disorders represent a significant and growing global public health concern, contributing substantially to morbidity, disability, and premature mortality. Recent global estimates indicate that nearly one in eight individuals lives with a mental disorder, with depression and anxiety being the

**Potential Conflicts of Interest:** No potential conflicts of interest disclosed by all authors. **Academic Integrity:** All authors confirm their substantial academic contributions to development of this manuscript as defined by the International Committee of Medical Journal Editors. **Originality:** All authors confirm this manuscript as an original piece of work, and confirm that has not been published elsewhere. **Review:** All authors allow this manuscript to be peer-reviewed by independent reviewers in a double-blind review process.  **Publisher:** Rwanda Health Communication Centre, KG 302st., Kigali-Rwanda. Print ISSN: 2663 - 4651; Online ISSN: 2663 - 4653. **Website:** https://rbc.gov.rw/publichealthbulletin/

most prevalent conditions among youth and young adults [1]. Suicide remains the fourth leading cause of death among individuals aged 15–29 years, highlighting the developmental vulnerability of older adolescents and emerging adults [1]. The age group of 18–24 years is a critical transitional period marked by identity exploration, increasing autonomy, academic and occupational pressures, and major social adjustments, all of which heighten susceptibility to mental health challenges [2].

The burden of mental health disorders is particularly pronounced in low- and middle-income countries (LMICs), where service availability and accessibility remain limited. Countries in Sub-Saharan Africa (SSA) allocate less than 1% of their national health budgets to mental health, and most report fewer than two mental health professionals per 100,000 population [3]. As a result, more than 75% of young people experiencing mental health problems in SSA do not receive professional care [4]. Barriers such as stigma, misinformation, low mental health literacy, economic constraints, and cultural preferences for traditional and religious healing practices continue to hinder help-seeking among adolescents [5]. Regional data from Kenya, Uganda, and Tanzania consistently show high prevalence of depression, anxiety, and psychological distress among adolescents, yet service utilization rates remain low due to stigma, limited awareness, and perceived lack of youth-friendly services [6–8].

Rwanda has made significant progress in strengthening its mental health care system through policy, community-based programming, and integration of mental health services within primary health care. The Rwanda Mental Health Strategic Plan (2020–2024) emphasizes decentralization, task-shifting, and youth mental health promotion, while national surveys indicate that approximately 20% of the population experiences mental health challenges including post-traumatic stress disorder, depression, and anxiety [9, 10]. Despite these efforts, the utilization of mental health services among adolescents remains low. Evidence shows that fewer than 13% of individuals with mental health needs seek professional support, and adolescents and young adults are the least likely to access available services [10, 11]. Factors such as stigma, financial limitations, service availability, and limited awareness continue to shape attitudes and behaviours surrounding mental health service use. Rapid urbanization, youth unemployment, substance use, academic pressures, and interpersonal violence contribute to heightened psychosocial stress among adolescents. Recent reports indicate that mental health conditions affect an estimated 36.7% of residents in the district, with a substantial burden among young people [12]. Although several community-based initiatives, such as the "Baho Neza" project, have sought to expand mental health awareness, reduce stigma, and improve access to care, utilization among adolescents remains disproportionately low, partly due to financial barriers, limited information about services, and perceived stigma [13]. These trends suggest the presence of systemic and community-level barriers that influence adolescents' willingness and ability to seek professional mental health support.

Recent studies across LMICs underscore the importance of understanding determinants of mental health service utilization, particularly among older adolescents, who often fall between child-focused and adult-focused mental health services [14, 15]. Factors influencing utilization include individual perceptions of need, mental health literacy, family support, economic factors, cultural beliefs, availability of youth-friendly services, confidentiality concerns, and trust in health providers [5, 8, 15, 16]. However, empirical evidence examining these determinants among adolescents aged 18–24 in Rwanda remains limited, despite increasing policy attention to youth mental health.

Given the high burden of mental health problems and the low level of service use in Kicukiro District, there is a critical need for localized evidence to understand the factors that shape mental health service utilization among adolescents aged 18–24 years. Identifying these determinants will provide essential insights for designing targeted interventions, strengthening district-level mental health programming, and informing national strategies aimed at improving adolescent mental health outcomes in Rwanda.

## METHODS

### Study Design

This study employed a quantitative analytical cross-sectional design to assess the determinants

of mental health services utilization among adolescents and young adults aged 18–24 years. The design enabled the measurement of exposure variables and service utilization outcomes simultaneously within the study population, making it appropriate for identifying associations between individual, social, and health system factors and mental health service use.

**Study Setting**

The study was conducted in Kicukiro District, one of the three administrative districts of Kigali City, Rwanda. Kicukiro District is a rapidly urbanizing area characterized by mixed residential, commercial, and industrial zones, and a high concentration of adolescents and young adults. Data collection was conducted between July 5, 2025, to August 12, 2025, in selected schools, youth centers, community settings, and health facilities within the district.

**Study Population**

The study population consisted of adolescents and young adults aged 18–24 years who were residing in Kicukiro District at the time of data collection. This age group represents a critical developmental period during which many mental health conditions emerge, and service utilization decisions are formed. Participants were recruited from secondary schools, youth centers, community spaces, and health facilities to ensure diversity in socio-economic status, education level, and gender.

**Inclusion and Exclusion Criteria**

Participants were eligible if they were aged 18–24 years at the time of data collection, residents of Kicukiro District, Kigali City, present at selected schools, youth centers, community settings, or health facilities, able to comprehend and respond to the questionnaire in Kinyarwanda, English, or French, and provided written informed consent

Participants were excluded if they had severe mental or physical conditions that impaired their ability to participate, were not residents of Kicukiro District, unable to communicate in the study languages, and declined or withdrew consent during the study

**Sampling Technique and Sample Size**

A multistage sampling strategy was employed. First, sectors within Kicukiro District were considered as primary strata. At the second stage, cells were selected systematically as primary sampling units. At the third stage, schools, youth centers, and community settings within selected cells were identified purposively based on availability. Finally, eligible participants within each site were selected using systematic random sampling, ensuring proportional representation across locations and gender. At this final stage, systematic random sampling was applied within each selected site. The total number of eligible adolescents at each location was first determined, and a sampling interval (k) was calculated by dividing this number by the allocated sample size. A random starting point between 1 and k was then selected, after which every kth eligible participant was approached for inclusion. If a selected individual was ineligible or declined participation, the next eligible individual was invited to maintain the sampling sequence. This procedure ensured systematic participant selection while reducing selection bias.

**Sample Size Determination**

The sample size was calculated using Cochran's formula for estimating proportions, assuming a 95% confidence level, a margin of error of 5%, and an estimated prevalence of mental health service utilization of 50% due to the absence of precise district-level estimates.

$n=(Z^2\ p(1-p))/e^2$

Where:

n = required sample size
Z = 1.96 (95% confidence level)
p = 0.5
e = 0.05

The minimum sample size was 384 participants. To account for potential non-response and incomplete questionnaires, a 10% adjustment was applied, resulting in a target sample size of 425 participants. We confirm that this adjustment was appropriate, as the final number of completed questionnaires was 384, reflecting an approximate 9.6% non-response rate, consistent with the planned adjustment.

The sample was proportionally distributed across selected cells and data collection sites, with measures taken to ensure equal representation of males and females, minimizing gender-related response bias.

**Data Collection Tools**

Data were collected using a structured questionnaire developed specifically for this study, informed by validated tools and previous studies on adolescent mental health service utilization. The questionnaire consisted of four sections: (1) socio-demographic characteristics (age, sex, education, employment, living arrangement); (2) knowledge of mental health and mental health services; (3) attitudes toward mental health services, including stigma, confidentiality, and perceived effectiveness; and (4) utilization of mental health services, including history of service use and perceived barriers

The questionnaire was pretested prior to data collection to ensure clarity, relevance, and cultural appropriateness.

**Variables**

***Outcome Variable:*** The primary outcome variable was mental health services utilization, assessed by self-report of whether participants had ever accessed professional mental health services. Responses were dichotomized as: Yes (utilized services), and No (did not utilize services).

***Independent Variables***: Independent variables for this study included socio-demographic factors such as age, sex, education level, and employment status. In addition, participants' knowledge of mental health services and attitudes toward seeking and utilizing these services were considered. Other variables included perceived stigma, accessibility and affordability of mental health services, and social and family support factors, all of which were examined as potential determinants of mental health service utilization among adolescents and young adults.

**Scoring and Cut-Off Justification**

Knowledge was assessed using a composite score ranging from 14 to 28, as reflected in the categorized results (Low: 14–18; Moderate: 19–24; High: 25–28). Higher scores indicated greater knowledge of mental health services. Attitude toward mental health services was measured using a composite score ranging from 5 to 16, categorized as Negative (5–8), Neutral (9–12), and Positive (13–16), with higher scores indicating more favorable attitudes toward service utilization. The categorization was based on proportional distribution of the total possible scores. For knowledge, scores were divided into three levels (low, moderate, high) using equal interval grouping across the observed score range to ensure meaningful differentiation of knowledge levels. For attitude, the score range (5–16) was similarly divided into three ordinal categories representing negative, neutral, and positive orientations. This approach is consistent with standard practices in Knowledge–Attitude–Practice (KAP) studies, where composite scores are grouped into interpretable categories to facilitate comparison and regression modeling.

The use of categorized levels rather than a single 60% dichotomous cut-off allowed for more nuanced analysis of gradients in knowledge and attitude. The distribution of participants across these categories (as shown in Table 4) demonstrates sufficient variability, supporting their suitability for inferential analysis.

**Data Collection Procedure**

Data collection was conducted by trained research assistants. Enumerators received training on ethical research conduct, confidentiality, informed consent, and sensitivity when discussing mental health topics. Questionnaires were administered in private settings to ensure participant comfort and confidentiality. Participation was voluntary, and respondents were free to withdraw at any time without consequences.

**Bias Control**

Several strategies were employed to minimize bias. Gender-balanced recruitment was ensured, proportional sampling was applied across cells, and systematic random sampling reduced selection bias. Standardized training of data collectors and pretesting of tools minimized information bias.

**Statistical Analysis**

Data were entered and analyzed using SPSS 25. Descriptive statistics were computed using frequencies, percentages, means, and standard deviations. At the bivariate level, chi-square tests were used to assess associations between independent variables and mental health service utilization. Variables with a p-value $<0.05$ were entered into a multivariable logistic regression model to estimate adjusted odds ratios (AORs) and 95% confidence intervals. Statistical significance was set at $p < 0.05$.

**Ethical Considerations**

Ethical approval was obtained from the University

of Rwanda, College of Medicine and Health Sciences Institutional Review Board, and authorization to conduct the study was granted by Kigali City authorities. Only adolescents aged 18–24 years were included in the study, ensuring that participants were legally able to provide consent themselves. Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity were strictly maintained, and all data were securely stored in compliance with Rwanda's Data Protection Law (Law No. 058/2021).

During data collection, participants who displayed distress or reported mental health concerns were provided with information and referral to appropriate mental health services, ensuring ethical support and safeguarding for all respondents.

## RESULTS

### Demographic and Socioeconomic Profile of Study Participants

Table 1 presents the socio-demographic characteristics of the 384 adolescents aged 18–24 years who participated in the study. The majority of participants were aged 21–23 years (47.9%), with younger (≤20 years, 27.3%) and older (24 years, 24.8%) adolescents also represented, reflecting a relatively balanced age distribution. Females comprised the larger proportion of the sample (61.5%), compared to 38.5% males, suggesting higher participation or availability among female adolescents in health-related research. Most respondents had attained tertiary or college education (65.9%), followed by secondary education (27.1%), with only a small proportion having completed primary education (7.0%).

Regarding occupation and residency, more than half of the participants were students (55.5%), with smaller proportions employed (33.1%) or unemployed (11.5%). Over half of the adolescents (54.2%) had lived in Kicukiro District for seven years or more, while the remaining participants had shorter durations of residence. Overall, the study population was predominantly female, relatively well-educated, and long-term residents, factors that are likely to influence mental health awareness, attitudes, and service utilization

**Table 1:** *Demographic and Socioeconomic Profile of Study Participants (N=384)*

| Variable | Category | Frequency | Percent (%) |
|---|---|---|---|
| Age | 18-20 years | 105 | 27.3 |
| | 21–23 years | 184 | 47.9 |
| | 24 years | 95 | 24.8 |
| | **Total** | **384** | **100.0** |
| Gender | Male | 148 | 38.5 |
| | Female | 236 | 61.5 |
| | **Total** | **384** | **100.0** |
| Education Level | Primary | 27 | 7.0 |
| | Secondary | 104 | 27.1 |
| | Tertiary/College | 253 | 65.9 |
| | **Total** | **384** | **100.0** |
| Occupation | Student | 213 | 55.5 |
| | Employed | 127 | 33.1 |
| | Unemployed | 44 | 11.5 |
| | **Total** | **384** | **100.0** |
| Duration of Stay in Kicukiro | < 1 year | 49 | 12.7 |
| | 2–3 years | 83 | 21.6 |
| | 4–6 years | 44 | 11.5 |
| | ≥ 7 years | 208 | 54.2 |
| | **Total** | **384** | **100.0** |

patterns among adolescents in this district (see Table 1 for full details).

**Utilization Level of Mental Health Services**

Out of the 384 respondents, 136 (35.4%) reported having accessed mental health services at least once, while 248 (64.6%) indicated that they had never sought any mental health services. These findings indicate that although slightly more than one-third of adolescents have utilized mental health services, the majority, nearly two-thirds, have not.

**Reasons for Seeking Mental Health Services**

Among the 384 adolescents in the study, 136 participants (35.4%) reported having utilized mental health services and indicated their reasons for seeking care. The most commonly cited reason was depression, reported by 119 participants (87.5%), followed by anxiety (n = 90; 66.2%) and stress (n = 76; 55.9%). These results suggest that internalizing mental health conditions, particularly mood- and anxiety-related symptoms, are the primary drivers of service utilization among adolescents in Kicukiro District.

Psychosocial stressors were also significant contributors to help-seeking. Family-related issues were reported by 60 participants (44.1%), self-esteem problems by 54 participants (39.7%), and peer-related challenges by 47 respondents (34.6%). Additionally, 42 participants (30.9%) indicated substance abuse–related concerns, and 43 participants (31.6%) reported other unspecified reasons (Table 2).

**Awareness and Knowledge of Mental Health Services and Access Points**

Table 3 summarizes adolescents' awareness and knowledge of mental health services and access points in Kicukiro District. Overall, general awareness was high, with 321 participants (83.6%) reporting knowledge of mental health services, while 63 (16.4%) indicated no awareness. Counseling services were the most widely recognized (n = 262; 68.2%), followed by individual or group therapy (n = 244; 63.5%), psychiatric services (n = 227; 59.1%), helplines (n = 213; 55.5%), and support groups (n = 204; 53.1%). Fewer participants (n = 177; 46.1%) were aware of other mental health services, indicating variation in familiarity with the range of services available.

In terms of access points, health centers were most commonly identified (n = 309; 80.5%), followed by private clinics (n = 284; 74.0%) and hospitals (n = 275; 71.6%). Community centers (n = 267;

**Table 2:** *Main Reasons for Seeking Mental Health Services Among Adolescents (N = 384)*

| Reason for Seeking Services | Response | Frequency | Percent (%) | Total (N=136) % |
|---|---|---|---|---|
| Anxiety | Yes | 90 | 23.4 | 66.2 |
| | No | 46 | 12.0 | 33.8 |
| Depression | Yes | 119 | 31.0 | 87.5 |
| | No | 17 | 4.4 | 12.5 |
| Stress | Yes | 76 | 19.8 | 55.9 |
| | No | 60 | 15.6 | 44.1 |
| Family issues | Yes | 60 | 15.6 | 44.1 |
| | No | 76 | 19.8 | 55.9 |
| Peer-related issues | Yes | 47 | 12.2 | 34.6 |
| | No | 89 | 23.2 | 65.4 |
| Self-esteem issues | Yes | 54 | 14.1 | 39.7 |
| | No | 82 | 21.4 | 60.3 |
| Substance abuse | Yes | 42 | 10.9 | 30.9 |
| | No | 94 | 24.5 | 69.1 |
| Other (specified) | Yes | 43 | 11.2 | 31.6 |
| | No | 93 | 24.2 | 68.4 |

69.5%) and religious institutions (n = 244; 63.5%) were also frequently mentioned. Awareness of online platforms was lower (n = 163; 42.4%), and 127 participants (33.1%) reported uncertainty about where to access services.

**Association of Participants' Characteristics, Knowledge, and Attitude with Mental Health Service Utilization**

Table 4 shows statistically significant associations were observed between certain socio-demographic factors and mental health service utilization. Older adolescents, particularly those aged 21–23 years and 24 years, were more likely to report using mental health services compared to those aged 20 years or below ($\chi^2 = 14.424$, $p = 0.001$). Gender was also significant, with female participants demonstrating higher service utilization than males ($\chi^2 = 38.813$, $p = 0.001$). Duration of residence in Kicukiro District was another significant factor, as adolescents living in the district for seven years or more were more likely to have accessed services than those with shorter residency ($\chi^2 = 9.348$, $p = 0.025$). In contrast, education level, occupation, and residence status were not significantly associated with service use, suggesting these factors did not independently influence help-seeking behavior (see Table 2 for full details).

**Table 2:** *Awareness and Knowledge of Mental Health Services and Access Points Among Adolescents in Kicukiro District, Rwanda (N=384)*

| Variable | Response | Frequency | Percent (%) |
|---|---|---|---|
| Awareness of mental health services | Yes | 321 | 83.6 |
| | No | 63 | 16.4 |
| Counseling services | Yes | 262 | 68.2 |
| | No | 122 | 31.8 |
| Therapy (Individual or group) | Yes | 244 | 63.5 |
| | No | 140 | 36.5 |
| Psychiatric services | Yes | 227 | 59.1 |
| | No | 157 | 40.9 |
| Helplines | Yes | 213 | 55.5 |
| | No | 171 | 44.5 |
| Support groups | Yes | 204 | 53.1 |
| | No | 180 | 46.9 |
| Other services | Yes | 177 | 46.1 |
| | No | 207 | 53.9 |
| Health centers | Yes | 309 | 80.5 |
| | No | 75 | 19.5 |
| Hospitals | Yes | 275 | 71.6 |
| | No | 109 | 28.4 |
| Private clinics | Yes | 284 | 74.0 |
| | No | 100 | 26.0 |
| Community centers | Yes | 267 | 69.5 |
| | No | 117 | 30.5 |
| Religious institutions | Yes | 244 | 63.5 |
| | No | 140 | 36.5 |
| Online platforms | Yes | 163 | 42.4 |
| | No | 221 | 57.6 |
| I do not know | Yes | 127 | 33.1 |
| | No | 257 | 66.9 |

*Respondents could select multiple options for service types and access points; percentages may not sum to 100%.*

Psychosocial factors showed that knowledge of mental health services was not significantly associated with utilization ($\chi^2 = 3.300$, $p = 0.192$), indicating awareness alone may not drive service use. Attitudes toward mental health services, however, were strongly associated with utilization ($\chi^2 = 44.463$, $p = 0.001$), highlighting that positive perceptions and reduced stigma play a critical role in encouraging help-seeking.

**Logistic Regression Analysis of Socio-Demographic Factors and Attitude Levels Associated with Utilization of Mental Health Services**

Logistic regression analysis identified age, gender, and attitudes toward mental health services as significant predictors of service utilization among adolescents. Adolescents aged 21–23 years were approximately 3.8 times more likely to utilize services compared to those aged ≤20 years (AOR = 3.753; 95% CI: 1.861–7.570; p = 0.001), while those aged ≥24 years were 2.2 times more likely (AOR = 2.235; 95% CI: 1.239–4.032; p = 0.008). Female adolescents were 5.8 times more likely to access mental health services than males (AOR = 5.810; 95% CI: 3.249–10.389; p = 0.001). Duration of residence in Kicukiro District was not statistically significant in the adjusted model, with adolescents residing for less than one year showing lower odds of utilization compared to those residing for ≥7 years (AOR = 0.458; 95% CI: 0.220–0.953; p = 0.108).

Attitude toward mental health services was a particularly strong determinant of utilization.

**Table 4:** *Association of Socio-Demographic Characteristics, Knowledge, and Attitude with Mental Health Service Utilization Among Adolescents in Kicukiro District, Rwanda (N=384)*

| Variable | Category | Yes | No | Chi-Square ($\chi^2$) | p-value |
|---|---|---|---|---|---|
| Age | ≤20 years | 25 | 80 | 14.424 | **0.001** |
| | 21–23 years | 64 | 120 | | |
| | ≥24 years | 47 | 48 | | |
| Gender | Male | 24 | 124 | 38.813 | **0.001** |
| | Female | 112 | 124 | | |
| Education Level | Primary | 10 | 17 | 0.346 | 0.841 |
| | Secondary | 39 | 65 | | |
| | Tertiary/College | 87 | 166 | | |
| Occupation | Student | 73 | 140 | 0.702 | 0.704 |
| | Employed | 45 | 82 | | |
| | Unemployed | 18 | 26 | | |
| Residence in Kicukiro | Yes | 132 | 239 | 0.127 | 0.722 |
| | No | 4 | 9 | | |
| Duration of Stay in Kicukiro | <1 year | 24 | 25 | 9.348 | **0.025** |
| | 2–3 years | 36 | 47 | | |
| | 4–6 years | 14 | 30 | | |
| | ≥7 years | 62 | 146 | | |
| Knowledge Levels | Low (14–18) | 85 | 140 | 3.300 | 0.192 |
| | Moderate (19–24) | 8 | 28 | | |
| | High (25–28) | 43 | 80 | | |
| Attitude Levels | Negative (5–8) | 24 | 52 | 44.463 | **0.001** |
| | Neutral (9–12) | 59 | 170 | | |
| | Positive (13–16) | 53 | 26 | | |

**Chi-square ($\chi^2$) test was used to examine the association between categorical independent variables and mental health service utilization. A p-value <0.05 was considered statistically significant.*

**Table 6:** *Logistic Regression Analysis of Socio-Demographic Factors and Attitude Levels Associated with Utilization of Mental Health Services Among Respondents in Kicukiro District (N=384)*

| Variable | Category | Yes | No | P-value | AOR | 95% C.I. for AOR (Lower) | 95% C.I. for AOR (Upper) |
|---|---|---|---|---|---|---|---|
| **Age** | ≤20 years | 25 | 80 | 0.001 | — | — | — |
| | 21–23 years | 64 | 120 | — | 3.753 | 1.861 | 7.570 |
| | ≥24 years | 47 | 48 | — | 2.235 | 1.239 | 4.032 |
| **Gender** | Female | 112 | 124 | 0.001 | 5.810 | 3.249 | 10.389 |
| | Male | 24 | 124 | — | — | — | — |
| **Duration of Stay in Kicukiro** | <1 year | 24 | 25 | 0.108 | 0.458 | 0.220 | 0.953 |
| | 2–3 years | 36 | 47 | — | 0.602 | 0.326 | 1.112 |
| | 4–6 years | 14 | 30 | — | 1.001 | 0.456 | 2.200 |
| | ≥7 years | 62 | 146 | — | — | — | — |
| **Attitude Levels** | Negative (5–8) | 24 | 52 | 0.001 | 6.393 | 2.968 | 13.768 |
| | Neutral (9–12) | 59 | 170 | — | 8.090 | 4.246 | 15.414 |
| | Positive (13–16) | 53 | 26 | — | — | — | — |
| **Constant** | — | — | — | 0.001 | 0.132 | — | — |

*Reference categories — Age: ≤20 years; Gender: Male; Duration of stay in Kicukiro: ≥7 years; Attitude: Positive (score 13–16)*

Adolescents with negative attitudes were 6.4 times more likely to use services than those with positive attitudes (AOR = 6.393; 95% CI: 2.968–13.768; p = 0.001), and those with neutral attitudes were 8.1 times more likely (AOR = 8.090; 95% CI: 4.246–15.414; p = 0.001). The statistically significant constant term (p = 0.001) indicates that the model fits the data well. Overall, these findings underscore that interventions aiming to improve adolescent mental health service uptake should focus on fostering positive attitudes, supporting younger adolescents, and addressing gender-specific barriers.

## DISCUSSION

The findings of this study provide important insights into the utilization of mental health services among adolescents aged 18–24 years in Kicukiro District, Rwanda, and highlight several key patterns that align with broader evidence from low and middle income countries (LMICs). First, despite relatively high awareness of mental health services (83.6%), only 35.4% of adolescents reported ever utilizing such services. This underscores a persistent treatment gap that is documented widely in LMIC contexts, where formal mental health care utilization remains low even among those with significant need [17, 18].

The demographic profile showed that nearly half of participants were aged 21–23 years and that females comprised the majority of the sample. This is consistent with other LMIC studies demonstrating that older adolescents and females are more likely to use mental health services compared to younger individuals and males [17, 19]. For example, a recent analysis of national adolescent health surveys from Kenya, Indonesia, and Vietnam found significantly greater odds of service use among older adolescents and females [18]. Such patterns may reflect a combination of greater autonomy, increased perceived need, and differential help seeking norms among older youth [17].

However, the overall utilization remains low in comparison with the prevalence of mental health problems, suggesting substantial unmet need.

Global evidence indicates that adolescents in middle-income regions often seek informal help (family, peers, teachers) rather than professional services, with formal service use often below 2% in some middle-income countries [19, 20]. This substantial unmet need indicates that awareness alone does not ensure service uptake.

Consistent with other LMIC studies, internalizing problems such as depression, anxiety, and stress were the leading reasons for using mental health services. These findings resonate with other research indicating that internalizing symptoms drive help seeking when services are accessed, yet many adolescents with such conditions still do not receive formal care [18]. In the NAMHS analysis, emotional problems and behavioral issues were primary drivers of service engagement, but overall access remained limited [17], highlighting a similar pattern to the current findings.

Although the majority of adolescents were aware of available service types and access points (e.g., health centres, private clinics, and hospitals), knowledge was uneven, especially for digital or online platforms. Low mental health literacy has been identified as a key barrier to service utilization in LMIC settings, compounded by stigma and socio-cultural beliefs about mental health and its causes [20]. Studies in Africa and Asia emphasize that limited familiarity with formal services and where to find them contributes to low utilization [20, 21], suggesting that targeted public education is needed to bridge the gap between awareness and actionable knowledge.

Beyond knowledge, the association between attitudes toward mental health and service utilization was particularly strong in this study. Unexpectedly, adolescents with neutral or negative attitudes toward mental health were significantly more likely to utilize services than those with positive attitudes. Several explanations may account for this counterintuitive finding. Reverse causality is one plausible interpretation, given the cross-sectional design. Attitudes may have been shaped after service utilization rather than before it. Adolescents who accessed services may have encountered long waiting times, limited confidentiality, perceived stigma within care settings, or unmet expectations regarding symptom improvement, leading them to develop more critical or negative views of mental health care. In this case, service exposure may have influenced attitudes rather than attitudes determining help-seeking behavior.

Additionally, adolescents experiencing more severe psychological distress may seek care despite holding negative or ambivalent attitudes, as symptom burden may override attitudinal barriers. This suggests that a higher need for care could coexist with unfavorable perceptions of services. The finding may also reflect measurement complexity, whereby adolescents without prior exposure to services report socially desirable or idealized positive attitudes, while those with lived experience express more nuanced or critical perspectives. Nevertheless, attitudinal barriers, including stigma, fear of judgment, and misconceptions, remain well documented in LMICs as significant impediments to adolescent help-seeking [20]. Evidence from African settings highlights stigma, preference for traditional treatments, and limited mental health literacy as key obstacles [22], and qualitative research in Rwanda underscores sociocultural constraints, financial limitations, and fear of stigmatization as barriers to mental health service utilization [23]. Taken together, these findings underscore the need for longitudinal and qualitative research to clarify the temporal relationship between attitudes and service utilization and to better understand adolescents' lived experiences within mental health systems in Rwanda.

Structural challenges also play an important role. Limited availability of trained mental health professionals, scarcity of services, and lack of adolescent-friendly care pathways are widely reported in LMICs, and these systemic issues reinforce low utilization despite significant need [17, 23]. Integration of mental health care into primary health services, task sharing with non-specialists, and expansion of community-based supports have been proposed as ways to address these gaps [24].

The low overall utilization observed in this study reflects broader patterns in LMICs: for example, nationally representative data from Kenya, Indonesia, and Vietnam show that less than one in ten adolescents with a mental disorder accessed care in the previous year [18]. Similarly, research across West Africa documents pervasive shortfalls in adolescent mental health services availability

and utilization, with some districts reporting service provision rates as low as 9%–42% of expected need [20]. These comparisons illustrate that the barriers and patterns identified in Kicukiro District are not unique but part of a systemic issue in LMICs.

The results emphasize the need for multi level interventions to improve adolescent mental health service utilization. Strategies that combine mental health education, community stigma reduction, school based screening, and integration of services into primary health and community settings have shown promise in LMIC contexts [24]. For example, interventions that raise awareness, identify individuals in need, and actively promote help seeking can strengthen the mental health care pathway [24]. Furthermore, digital tools, though currently under recognized by adolescents in this study, represent potential avenues for improving accessibility if accompanied by efforts to increase digital literacy and culturally relevant content.

This study is strengthened by its focus on an urban LMIC population and its comprehensive examination of socio-demographic, attitudinal, and awareness factors influencing adolescent mental health service utilization. However, several limitations should be acknowledged. First, the cross-sectional design limits the ability to draw causal inferences, as exposure and outcome variables were measured simultaneously. Second, the use of self-reported measures introduces the potential for social desirability and recall bias, which may affect the accuracy of responses regarding service use and attitudes. Third, the recruitment of participants primarily from schools, youth centers, and community settings may have introduced selection bias, potentially excluding out-of-school youth who might have different help-seeking behaviors. Finally, the findings are specific to Kicukiro District, and caution should be exercised in generalizing results to adolescents in other districts or rural areas.

Interestingly, knowledge of mental health services was not a significant predictor of utilization in this study. This suggests that awareness alone may be insufficient to drive service use, highlighting the importance of attitudinal factors, perceived stigma, and personal experiences in determining help-seeking behavior. Adolescents may be aware of available services but still refrain from accessing them due to negative perceptions, fear of judgment, or other social and psychological barriers. These findings underscore the need for interventions that not only increase knowledge but also target attitude change, stigma reduction, and supportive environments to enhance mental health service uptake among adolescents.

## CONCLUSION

This study demonstrates that, despite relatively high awareness of mental health services among adolescents in Kicukiro District, the actual use of these services remains markedly limited. The findings indicate that awareness alone is insufficient to translate into help-seeking behavior, as service utilization appears to be more strongly influenced by demographic factors and attitudes toward mental health care. Adolescents experiencing internalizing psychological challenges, such as emotional distress and interpersonal difficulties, were the primary users of available services.

Importantly, attitudes toward mental health emerged as a key driver of service utilization, suggesting that stigma, perceptions of mental health care, and personal beliefs may play a greater role in determining help-seeking behavior than knowledge alone. These results highlight the need to move beyond awareness campaigns and focus on interventions that foster positive attitudes, normalize help-seeking, and address sociocultural barriers to accessing care.

Strengthening adolescent mental health services in Rwanda therefore requires comprehensive, youth-centered strategies that improve accessibility and acceptability of care. Expanding community- and school-based mental health support, integrating services within primary health care systems, and utilizing digital platforms may help reach adolescents more effectively. Promoting mental health literacy while simultaneously addressing stigma and attitudinal barriers will be essential to ensuring that adolescents are able to access timely and appropriate mental health support.

### Authors' contributions

MAG: Conceptualization, study design, supervision, and manuscript review. JR&LBB: Data collection, data analysis, and drafting of the results section. YG: Literature review, methodology development, and writing of the introduction and discussion sections.

All authors read and approved the final manuscript.

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