Prevalence of Common Mental Disorders and Related Factors among Adolescents in Age Between 18 To 19 in Musanze District, Rwanda: A Cross-Sectional Study

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Abstract: **Background: Mental illness is an emerging public health concern in Rwanda. In response, the Ministry of Health developed a National Mental Health Strategic Plan to address common mental disorders. However, there remains limited evidence particularly from small urban areas such as Musanze Districtto guide mental health policy and strengthen service delivery. This study aimed to assess the prevalence of common mental disorders and identify associated psychosocial, clinical, and socio-economic factors among adolescents aged 18–19 years in Musanze District, Rwanda.**

Methods: A cross-sectional quantitative study was conducted among 384 adolescents aged 18–19 years, with complete responses obtained from 345 participants across 15 sectors of Musanze District. Participants were selected using a convenience sampling approach. Data were collected using a structured, self-administered questionnaire to capture socio-demographic, psychosocial, and clinical characteristics, while the Mini International Neuropsychiatric Interview (MINI) Version 5.0.0 DSM-IV was used to assess the presence of common mental disorders. Data were analyzed using SPSS software. Descriptive statistics summarized participant characteristics, and multivariable binary logistic regression was performed to identify factors associated with common mental disorders at a 95% confidence interval, with statistical significance set at $p < 0.05$.

Results: The prevalence of common mental disorders among adolescents was 24.4%. Factors significantly associated with common mental disorders included being female, having a family history of mental illness, poor social support, a history of non-physical sexual abuse, and a history of physical sexual abuse ($p < 0.05$ for all).

Conclusion: The prevalence of common mental disorders among adolescents in Musanze District is considerably high. These findings underscore the urgent need for targeted community-based and institutional interventions to address identified risk factors and strengthen adolescent mental health services in Rwanda.

Keywords: **Common mental disorders; Adolescents; Prevalence; Psychosocial factors; Mental health; Musanze District; Rwanda.**

1. INTRODUCTION

Common mental disorders (CMDs) including depression, anxiety, and somatoform disorders are among the most prevalent mental health conditions globally. They are characterized by symptoms such as insomnia, fatigue, irritability, poor concentration, and somatic complaints (Prince, 2017). Although less severe than psychotic disorders, CMDs present a significant public health concern due to their high prevalence and profound effects on wellbeing, productivity, and quality of life (World Health Organization [WHO], 2020; Lazarus & Freeman, 2019).

Globally, approximately one in seven adolescents (14%) aged 10–19 years experiences a mental health condition, yet most cases remain undetected and untreated (UNICEF, 2020). Adolescence is a critical developmental stage marked by rapid physical, emotional, and social changes that can heighten vulnerability to mental health problems. Adverse experiences such as poverty, family conflict, violence, and abuse further increase this risk. In 2019, an estimated 970 million people worldwide were living with a mental disorder, with anxiety and depressive disorders being the most common. The COVID-19 pandemic has further exacerbated this burden, leading to a 26% increase in anxiety disorders and a 28% increase in major depressive disorders (WHO, 2022).

Empirical studies show gender disparities in the prevalence of CMDs, with females consistently reporting higher rates than males. For example, a cross-sectional study in Brazil found that the prevalence of CMDs was 23.3% among girls and 11.1% among boys (Ribeiro et al., 2020). Similarly, studies from India, China, and Ethiopia have shown that poor social support and a history of sexual abuse are strongly associated with CMDs (Chen, 2020; Pengpid & Peltzer, 2020).

In sub-Saharan Africa, evidence on adolescent mental health remains limited but indicates a significant public health burden. A systematic review by Jorns-Presentati et al. (2020) revealed that one in seven children and adolescents in the region experiences psychological challenges, and approximately one in ten meets diagnostic criteria for a mental disorder. Adolescents constitute nearly 23% of the sub-Saharan African population, underscoring the magnitude of the issue. Additional studies from Ethiopia, Kenya, and Tanzania have demonstrated associations between CMDs and family history of mental illness, alcohol use, trauma, and lack of social support (Dessie & Ebrahim, 2020; Duko & Bedaso, 2019).

In Rwanda, the legacy of the 1994 Genocide against the Tutsi has had enduring psychological effects. Early studies found alarmingly high rates of post-traumatic stress disorder (PTSD) and other mental health problems among Rwandan adolescents (Neugebauer et al., 2009; Schaal & Elbert, 2006). Despite the implementation of the Rwanda Mental Health Strategic Plan and the 2018 Rwanda Mental Health Survey (RMHS), there remains a paucity of data on adolescent mental health, particularly in smaller urban settings such as Musanze District.

Given the ongoing challenges of post-genocide trauma, poverty, and limited access to mental health services, it is essential to understand the magnitude and determinants of CMDs among Rwandan adolescents. This study therefore aimed to determine the prevalence of common mental disorders and identify associated psychosocial, clinical, and socio-demographic factors among adolescents aged 18–19 years in Musanze District, Rwanda.

2. METHODS

A community- and institution-based cross-sectional study with a quantitative approach was conducted in Musanze District from July to September 2025 to assess the prevalence and factors associated with common mental disorders among adolescents aged 18–19 years. The target population included all adolescents in the 15 sectors, and a sample of 384 participants was determined using Yamane's formula with a 5% margin of error1. Participants were selected through convenience sampling, with inclusion criteria of age 18–19, ability to communicate in English or Kinyarwanda, and willingness to provide consent.

Data were collected using a structured questionnaire comprising socio-demographic information, mental health assessment via the Mini International Neuropsychiatric Interview (M.I.N.I.) Version 5.0.0 DSM-IV3, and questions on associated factors. Secondary data were obtained through documentary review4. Questionnaires were self-administered under supervision at participants' households, and instruments were translated into Kinyarwanda and piloted among 10 adolescents to ensure clarity, validity, and reliability.

Data were entered into Excel and analyzed using SPSS v23. Descriptive statistics summarized participant characteristics and prevalence of mental disorders. Associations between socio-demographic factors and mental disorders were assessed using Chi-square tests, and significant variables were further examined through multivariate logistic regression at 95% confidence intervals.

3. RESULTS

Demographic Characteristics of Respondents

Table 1 presents the sociodemographic characteristics of the 345 respondents who participated in the study. The majority, 195 (56.8%), were females, while 150 (43.2%) were males, indicating that the study achieved a balanced gender representation and did not suffer from gender bias. Most respondents, 215 (62.3%), were 19 years old, whereas 130 (37.7%) were 18 years old. Given this narrow age range, the computation of a mean (± SD) age was not necessary.

With respect to education level, more than half of the participants, 179 (51.8%), had completed secondary education, 103 (29.8%) were university students, 34 (9.8%) had no formal education, and 28 (8.1%) had attended vocational training institutions. Regarding family structure, 234 (68.0%) of adolescents reported living with one parent, followed by 71 (20.5%) who lived with both parents, while the remainder lived with guardians, alone, or with other adolescents.

In terms of place of residence, 220 (63.7%) of respondents resided in rural areas of Musanze District, whereas 125 (36.3%) were from urban areas. Concerning family history of mental illness, 18.5% of respondents reported having a family member with mental illness, while 81.5% did not.

Table 1: Demographic distribution of study participants in Musanze District (n =345).

Variables	Categories	Frequency (n =345)	Percent(%)
Sex	Female	195	56.80
	Male	150	43.2
Age of respondents	18 Years	130	37.7
	19 years	215	62.3
	No education	34	9.8
	Vocational trainings	28	8.1
Educational level	Primary	0	0.0
	Secondary	179	51.8
	University	103	29.8
	With parents	71	20.5
	With one parent	234	68
Living conditions of respondents	With guardians	10	2.9
	Alone	5	1.4
	Others	15	4.3
	Public	261	75.6
School type	Mixed	41	11.8
	Private	20	5.7
	Home schools	24	6.9
Place of origin	Rural area	220	63.7
	Urban area	125	36.3
Living in Family with mental illness	Yes	64	18.5
	No	281	81.5

The prevalence of common mental disorders among adolescents aged between 18 to 19 in Musanze district

Among the 345 study participants, an average of 299 (86.6%) said no while only an average of 46(13.4%) affirmed to all asked questions to test the adolescents faced the Major depressive episode as one of CMD as agreed and ensured by Mini International Neuropsychiatric Interview English Version 5.0.0 DSM-IV (WHO, 2006). This implies that only 23.4% of adolescents in Musanze District have faced Major depressive episode. Meanwhile, 24 (6.9) adolescents have Dysthymia as common Mental Disorder (CMD). However, 31.1%, 4.9% and 1.2% faced by Panic Disorder, suicidality and (Hypo) Manic Episode respectively. Furthermore, 47.8% adolescents in Musanze District experienced agoraphobia, 41.8% said yes that the faced the characteristics of social phobia person while 1.2% suffered from Obsessive-Compulsive Disorder and 22.9% reported on were Posttraumatic Stress Disorder challenge. Among study participants 39.1% reported to be alcohol adducted and (Table 1).
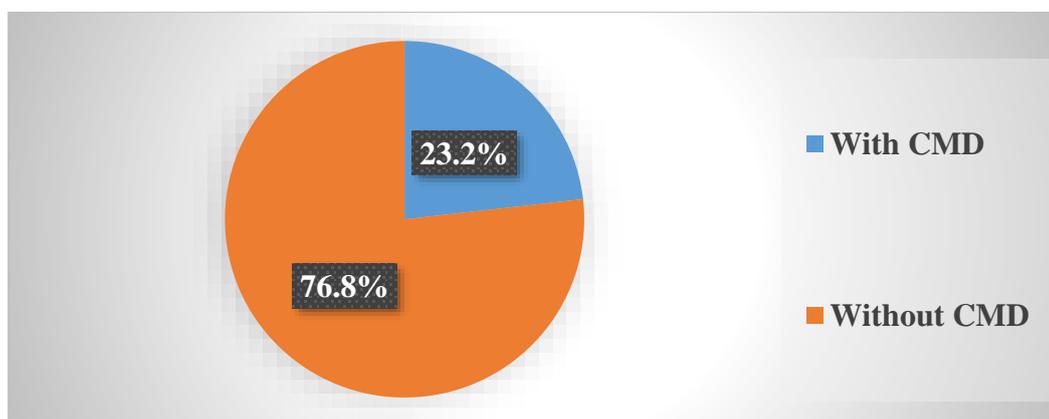

Figure 1: The prevalence of common mental disorders (CMDs) among study participants

Psychosocial and clinical factors related to common mental disorders among adolescents in age range between 18 and 19 in Musanze

Table 2 show that among the 345 participants, only 12.5% reported having strong social support, 29.3% reported moderate social support, and the majority (58.2%) indicated poor or low social support. Regarding substance use, 33 (9.6%) of the respondents reported lifetime cigarette use, while 51 (14.8%) had occasionally smoked in their lifetime; 36.5% reported rare smoking, and 39.1% had never smoked. The proportion of current users being close to lifetime users suggests that once adolescents begin using substances, they often face challenges in quitting, which may lead to sustained or habitual use.

With respect to experiences of abuse, 68 (19.7%) of respondents reported having experienced physical sexual abuse, whereas 232 (67.2%) had not. Non-physical abuse was reported by 86 (24.9%) of participants, while 225 (65.3%) reported no such experience. In addition, 47 (13.6%) of respondents had a family history of mental illness, compared with 278 (80.6%) who did not. Regarding chronic medical conditions, 29 (8.4%) of respondents reported having a known chronic illness, 311 (90.2%) reported none, and 5 (1.4%) were unsure of their status.

Table 2: Psychosocial and clinical factors related to common mental disorders

Variables	Category	Frequency	Prevalence
Social family support	Low	201	58.2
	Moderate	101	29.3
	Strong	43	12.5
Cigarette smoking	Never	135	39.1
	Rarely	126	36.5
	Sometimes	51	14.8
	Always	33	9.6
Physical sexual abuse history	Not sure	45	13.1
	Yes	68	19.7
	No	232	67.2
Non-physical sexual abuse history	Not sure	34	9.8
	Yes	86	24.9
	No	225	65.3
Known family history of mental illness	Not sure	11	3.2
	Yes	47	13.6
	No	278	80.6
Known chronic medical illness	Not sure	5	1.4
	Yes	29	8.4
	No	311	90.2

Social-economic factors related to common mental disorders among adolescents in Musanze district

Table 3 indicate that among the 345 study participants, the majority, 234 (68.0%), were living in single-parent households, while 71 (20.5%) lived with both parents. In addition, 30 (8.7%) adolescents reported living with relatives, and 10 (2.9%) were residing with guardians.

Regarding financial support, nearly half of the participants, 162 (46.9%), reported receiving moderate financial support. This was followed by 91 (26.4%) who were insufficiently supported, and 68 (19.7%) who reported receiving no financial support from others. Only a small proportion of respondents reported adequate support: 10 (2.9%) were adequately supported, and 14 (4.0%) were completely supported by others.

In terms of physical functioning, 180 (52.1%) of respondents reported average ability to carry out daily activities, while 124 (35.9%) had poor ability to get around, and 40 (11.6%) were able to move and perform daily tasks normally. Only one participant (0.3%) reported being fully healthy and capable of performing daily activities without difficulty.

Table 3: Social-economic factors related to common mental disorders among adolescents in Musanze district

Variables	Category	Frequency	Prevalence
Living arrangement	Single parent	234	68
	Both parents	71	20.5
	Relatives	30	8.7
	Guardians	10	2.9
How adolescents are financial support.	Not at all	68	19.7
	Not much	91	26.4
	Moderately	162	46.9
	A great deal	10	2.9
	Completely	14	4.0
Ability to get around for daily activities.	Poor	124	35.9
	Neither poor nor good	180	52.1
	Good	40	11.6
	Very good	1	0.3

Factors associated with common mental disorders among adolescents in age range between 18 -19 in Musanze District, 2025.

the results showed that being female, living arrangements, educational level, financial support, family history of mental illness, known chronic medical illness, poor social support, physical and non-physical sexual abuse, ability to get around were associated with CMDs (Common Mental Disorders) with a p value of mental illness, and physical and non-physical sexual abuse were significantly associated with CMDs (p<0.05). In the case of sex, the odds of developing CMDs among females were 1.95 times more likely, as compared with male participants (AOR=1.95; 95%CI: 1.27 to 2.99).

Adolescents who have a family history of mental illness were 2.23 times more likely to develop CMDs as compared with those who have no family history of mental illness (AOR=2.23; 95%CI: 1.15 to 4.35). The likelihood of developing CMDs was 3.14 times higher among adolescents who had poor social support than adolescents with strong social support (AOR=3.14; 95%CI: 1.51 to 6.54). The odds of developing CMDs were 2.09 times more likely among those who report a history of non-physical sexual abuse than those not reporting a history of nonphysical sexual abuse (AOR=2.09; 95%CI: 1.21 to 3.62), and 2.43 times more likely among those who report a history of physical sexual abuse than those not reporting a history of physical sexual abuse (AOR=2.43; 95%CI: 1.29 to 4.59).

Table 4: Factors associated with common mental disorders among adolescents in age range between 18 -19 in Musanze District, 2025.

Variables	Category	CMD		COR with 95%CI	AOR with 95%CI	P -value
		Yes	No			
Sex	Female	46	150	1.95 (1.92 to 2.87)	1.95 (1.27 to 2.99)	0.003**
	Male	34	115	1	1	
Educational level	No education	8	26	1	1	
	Vocational	6	22	1.28 (0.78 to 2.08)	1.03 (0.60 to 1.77)	0.816
	Secondary	42	137	1.17 (0.69 to 1.99)	0.99 (0.55 to 1.79)	0.578
	University	24	79	2.06 (1.23 to 3.45)	1.63 (0.92 to 2.89)	0.092
Financial support	Not at all	16	52	1	1	
	Not much	38	124	12.2(1.1 to 38.1)	9.91(1.81-2.99)	0.000**
	Moderately	21	70	3.71 (0.0 to 21.7)	3.19 (1.1 to 18.9)	0.001**
	A great deal	2	8	1	1	
	Completely	3	11	1	1	
Family history of mental illness	Yes	11	36	3.19 (1.80 to 5.65)	2.23 (1.15 to 4.35)	0.007*
	No	65	213	1	1	
Chronic medical illness	Yes	7	22	4.58 (2.02 to 10.42)	1.68 (1.06 to 2.64)	0.299
	No	72	239	1	1	

Living arrangement	Both parents	57	189	1	1	
	Single parent	10	34	1.73 (1.05 to 29)	1.71 (0.98 to 3.01)	0.0601
	Relatives	8	25	1.65 (0.94 to 2.97)	1.59 (0.84 to 2.98)	0.174
	Guardians	5	17	1	1	
Social support	Low	47	154	3.36 (0.40 to 0.83)	3.16 (1.53 to 6.56)	0.009**
	Moderate	23	78	1.85 (0.93 to 3.68)	1.72 (0.80 to 3.66)	0.259
	Strong	10	33	1	1	
Ability to get around for daily activities.	Poor	67	213	1.48 (0.89 to 2.39)	1.35 (0.77 to 2.29)	0.339
	Neither poor nor Good	19	62	1.49 (0.89 to 2.55)	1.63 (0.89 to 2.89)	0.111
	Good	29	95	1	1	
Non-physical sexual abuse	Yes	20	66	3.09 (1.99 to 4.78)	2.09 (1.23 to 3.65)	0.009**
	No	52	173	1	1	
Physical sexual abuse	Yes	16	52	3.95 (2.35 to 6.67)	2.46 (1.29 to 4.59)	0.008**
	No	54	178	1	1	

4. DISCUSSIONS

Common mental disorder is a public health problem that cause impact to the individuals, their family and communities in both developed and developing countries (World Health Organization, 2024). The global burden of disease report indicates that CMD accounts around 9.8% of global burden disease (Lopez, 2016). But the prevalence and associated factors of common mental disorders are varying among different population. This study showed that using Mini International Neuropsychiatric Interview English Version 5.0.0 DSM-IV; the prevalence of common mental disorder among the adolescents in age range between 18-19 in Musanze District was 24.4 % (95% CI: 19.29% to 32.3%. The current finding was in line with the community-based study conducted in Nigeria among 1,105 respondents using the 12-Item General Health Questionnaire (GHQ-12), 31.9% (27). This is also in line with the studies conducted in similar settings in Ethiopia among high school students (30.8%) (Jebena, et al, 2016) and Mekelle (34.9%) (Gebremedhin, et al, 2020) as well as Rwanda (20.49%) (n=3915) (Kayiteshonga, et al, 2022). The possible reason that this finding was in line with the previous Ethiopian and Rwandan studies might be due to the similarities of psychosocial factors like social support and sexual abuse. Living arrangement and, adolescent' financial support as one of social economic factors associated with prevalence of CMDs. The particularly high number of females than males was a factor significantly associated with CMD in the current and previous studies.

This finding was lower as compared with the former studies that were done in Saudi Arabia (54%) (Saquib and Saquib, 2023). Malaysia (47%) (Lin, 2013) and Indonesia (64.7%) (Kaligis and Wiguna, 2024). Numerous factors could account for this variation, as shown by the sociodemographic data; for example, the proportion of female participants was significantly higher than that of male adolescents. The other sociodemographic characteristic as a determinant factor in the Malaysian study was cigarette smoking and Ethnicity as well as religion, which was not associated with the current study. The tool that was used to measure CMDs is different from the current study. For instance, the tool used in Malaysia was the General Health Questionnaire while in Indonesia SRQ-20 was used which are not the same in current study because this study used Mini International Neuropsychiatric Interview English Version 5.0.0 DSM-IV.

In another way, this finding was higher as compared with former studies that were conducted in India (20%), South Africa (15.8%) and Egypt (21.3%). The discrepancy might be due to various reasons like sociodemographic differences as shown in the study conducted in Indian adolescents from urban residences, which were significantly associated. It was a protective factor in the current study and there was an equal number of females and males, but females dominate in the current study. The inclusion of a family history of mental illness in this study, which was not present in the South African study, may be another factor contributing to this study's higher ranking (Melese and Bayu, 2020).

The other possible reason for this discrepancy might be the effect of factors including psychological factors, especially the presence of a history of sexual abuse, living arrangement which were not a determinant factor in the Egyptian study but the factor that raised the prevalence of CMD in this finding (Pengpid and Peltzer, 2020). Even though there were similar study designs used, the different tools used to assess those studies could elevate the prevalence of CMDs.

Regarding factors significantly associated with CMDs, one of the factors that statistically significantly associated with CMDs was being female than being male. This result is consistent with other research conducted in Mekelle (Gebremedhin, 2023) Morocco (Pengpid, 2020) and South Africa (Pengpid, 2020) This association might be due to a low-stress tolerance and a high burden of household work in females found as compared with males. The other reason could be that during puberty, physical changes, including menstruation, begin and other hormonal changes may increase risk of CMD.

In this females and those with lower level of education had increased prevalence of mental disorders. Tis is consistent with the 2010 Global Burden of Disease study (Whiteford, 2022), where women also had a greater burden of mental disorders than men; this finding is consistent across both high income and LMICs (Whiteford, 2022). Secondly, low educational attainment has previously been shown to be associated with increased prevalence of mental disorders (Allen, et al, 2024).

Another associated factor with CMDs was poor social support, which was supported by other studies conducted in Morocco, California and Ethiopia. The possible reason could be the feeling of loneliness or having no close friends who easily understand and share the day-to-day life stress that might result in the occurrence of CMDs. Finally, factors might be the real causes of common mental disorders even though it is not possible to identify the temporal relationship between them since we approach a cross-sectional study design (Steel and Marnane, 2023).

The history of both physical sexual abuse and nonphysical sexual abuse was also significantly associated with CMDs. This finding was in line with other research undertaken in Mekelle, India and Jimma. The history of nonphysical sexual abuse was explained by the harassment that someone misbehaves that creates a sense of anxiety but it is not disclosed to other people due to perceived sociocultural impacts (Kessler, 2017).

 The numbers of physical sexual abuse are relatively less than non-physical sexual abuse because abusers fear the law since it is a serious and sensitive issue. This finding might be because childhood exposure to sexual abuse has a long-term psychological impact that can lead to CMDs in the future life of an individual (Kebede, 2020).

The presence of a family history of mental illness was reported to be associated with CMDs as evidenced by other studies carried out in Kombolcha (Yimam and Azale, 2015). and University of Gondar, as well as what is found in this study. The possible reason might be the effect of genetic predisposition and the brain structure abnormality in the family members (Dachew and Azale, 2023).

The other reason could be the effect of stress due to caring for the mentally ill individual or family members and living conditions that can result in CMDs. The presence of a family history of mental illness might also decrease the interaction of the caregiver with other people because of the effect of stigma and being busy caring for and supporting the family members that further increase the risk of having CMD since poor social support is also a determinant factor that could be the postulated reason.

5. CONCLUSION AND RECOMMENDATIONS

The study found that the prevalence of common mental disorders among adolescents aged 18–19 years in Musanze District was 24.4%. Factors significantly associated with these disorders included being female, having poor social support, low household income, a family history of mental illness, and experiences of physical or non-physical abuse. These findings underscore the need for adolescent-friendly mental health interventions that promote early identification, counseling, and psychosocial support. Expanding access to quality mental healthcare in schools, communities, and primary health settings, alongside strengthening collaboration between the health and education sectors, is essential to improve prevention, detection, and treatment of mental disorders among adolescents.

Future research should include a wider age range and cover additional districts to enhance generalizability. Comparative and longitudinal studies are recommended to better understand causal relationships and long-term outcomes. Using standardized screening instruments such as the GHQ-12 or SRQ-20 would also enable consistency and comparability across studies. Such evidence will guide policymakers and practitioners in designing targeted interventions to promote adolescent mental health in Rwanda.

Declarations

Ethics approval and consent to participate

Mount Kenya University granted ethical approval for this research. Authorization letter to collect the data for this analysis was obtained from Musanze District, Rwanda with ref: 0166/OJ/24.03. All participants provided signed informed consent.

This study adhered to the ethical guidelines and regulations outlined in the 1964 Declaration of Helsinki and its subsequent amendments or comparable ethical standards for participant recruitment and informed consent procedures in all interviews conducted.

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