CO–OCCURRENCE OF COMMUNICABLE DISEASES AMONG PEOPLE WITH MENTAL HEALTH DISORDER: EVIDENCE FROM THE 2019 SOUTH AFRICAN GENERAL HOUSEHOLD SURVEY

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ABSTRACT

Introduction: South Africa faces high burden of communicable diseases, particularly human immunodeficiency virus (HIV) and tuberculosis (TB), alongside a growing prevalence of mental health disorders. However, evidence on communicable diseases among individuals with mental health disorders remains sparse. This study assessed the prevalence and determinants of communicable diseases among South Africans with self-reported mental health disorders. **Methods**: A secondary analysis of the 2019 General Household Survey was conducted among 410 individuals with self-reported mental health disorders by a qualified healthcare professional. Descriptive statistics summarized disease prevalence, while bivariate and multivariable ordinal logistic regression analyses identified associated factors. Variables with $p<0.25$ in bivariate analyses were considered for multivariable modelling, and statistical significance was set at $p<0.05$. All analyses accounted for the complex survey design and were performed using STATA version 16.1. **Results**: The mean age of participants was 40.55 ±0.90 years. The prevalence of communicable diseases was 13.03%, with 11.87% reporting a single infection and 1.16% reporting two or more infections. Influenza was the most prevalent condition (9.94%), followed by HIV (2.96%), TB (1.17%), and sexually transmitted diseases (0.27%). Higher odds of communicable diseases were observed among cohabiting [OR: 3.61; 95%CI: 1.51, 8.64; p-value = .004] and divorced individuals [OR=6.56; 95%CI: 1.77, 24.28; p-value = .005]. Residents of the Free State [OR: 5.63; 95% CI: 1.13, 28.06; p-value = .035] and Gauteng [OR: 4.44; 95%CI: 1.18, 16.72; p-value= .028] also had increased odds. **Conclusion**: Communicable diseases were common among individuals with mental health disorders. Integrating prevention, screening, and treatment within mental health services may reduce disease burden and improve health outcomes.

Keywords: Communicable diseases, HIV, TB, Mental health disorders

INTRODUCTION

Communicable diseases (CDs) remain a persistent and inequitable burden among individuals living with mental health disorders, yet their epidemiological patterns vary markedly across geographic and health-system contexts. In this study, CDs are operationally defined as the self-reported presence of influenza, sexually transmitted disease (STD), HIV, tuberculosis (TB), or two or more diseases. Evidence from high-income settings suggests relatively lower prevalence rates of HIV among mental health service users, with Heslin et al. (2023) reporting a prevalence of 2.47% in the United Kingdom and Jallow et al. (2017) documenting an exceptionally low prevalence of 0.16% in Greater Stockholm. In contrast to findings from other settings, where substantially higher prevalence has been reported. For example, in the United States, pooled estimates indicate that approximately 6% of individuals with serious mental illness are living with HIV, while a systematic review by Ayano et al. (2018) reported prevalence rates as high as 7.9% among people with severe mental illness. Such disparities highlight the contextual and structural determinants shaping communicable disease risk and surveillance among psychiatric populations, while also pointing to the methodological influence of sample size, representativeness, and health system integration in prevalence estimation.

TB, similarly, continues to exert a disproportionate toll on individuals with mental health disorders, particularly in low- and middle-income countries. Qader et al. (2019) reported a TB prevalence of 3.57% among mentally ill patients in Afghanistan, while Temesgen et al. (2021) observed an even more alarming prevalence of 10.8% among individuals with chronic psychotic disorders in Ethiopia, with over 43% screening positive for TB symptoms. These elevated rates not only reflect biological vulnerability but also expose systemic health-care inequalities in early detection, continuity of care, and infection control. South Africa is the epicentre of communicable diseases in Africa, with about 16.3% of the population living with human immunodeficiency virus (HIV), and an average of 427 cases of Tuberculosis (TB) per 100,000 people (Conan et al., 2022; Kunjane et al., 2022). In South Africa, the burden of communicable diseases among psychiatric populations is further intensified by a strained public health system characterized by workforce shortages, professional burnout, budgetary constraints, and inadequate infrastructure (Mahomed & Adeleke, 2025; Malematja et al., 2025; Muswa, 2022; Nash et al., 2024). Without targeted intervention, these systemic pressures risk exacerbating avoidable morbidity and mortality among an already marginalized population. STDs on the other hand remain a significant global public health concern, with more than one million curable infections acquired daily worldwide, while South Africa continues to experience a substantial STD burden despite ongoing prevention and treatment efforts (WHO, 2025; Frank et al., 2023; Kufa et al., 2025). Among individuals with mental health disorders, STD prevalence appears particularly elevated, with a study in Gauteng reporting a self-reported prevalence of 77.3% and a meta-analysis indicating a pooled prevalence of risky sexual behaviour of 43.4% across Africa (Mokgatle, 2021; Kelebie et al., 2025). Moreover, influenza also poses a considerable global health burden, accounting for

approximately one billion seasonal cases annually (WHO, 2025). In South Africa, influenza surveillance has reported seasonal outbreaks across all provinces, with an overall detection rate of approximately 13%, and severe outcomes occurring more frequently among individuals with chronic conditions, including mental health disorders (Wolter et al., 2025).

Understanding the determinants of communicable diseases within mental health populations reveals complex and sometimes contradictory gender patterns of vulnerability. Several studies provide evidence that gender is a significant predictor of communicable disease, with women exhibiting higher odds of communicable diseases than their male counterparts (Qader et al., 2019; Roomaney et al., 2022). However, this pattern diverges from other studies reporting higher burdens among men or no significant gender differences (Akokuwebe et al., 2024; Elliot et al., 2014; Oyageshio et al., 2024; Seloma et al., 2023). In the South African healthcare context, this gendered effect reflects a double-edged epidemiological reality. Women, particularly adolescent girls and young women, face heightened biological susceptibility to HIV infection, compounded by gender-power imbalances, transactional relationships, and limited negotiating power for condom use (Humphries et al., 2019; Kaiser et al., 2011; Reed et al., 2024; Rucinski et al., 2024; Stoner et al., 2019). Moreover, entrenched sociocultural norms further restrict older women's financial and decision-making autonomy, especially in rural settings, thus constraining access to preventive and diagnostic services (Musuka et al., 2025). Beyond gender differences, marital status and geographic location further stratify communicable disease risk among individuals with mental health disorders. Compared to single individuals, those who were married, widowed, divorced, or cohabiting demonstrated higher odds of communicable diseases (Akokuwebe et al., 2024; Lloyd-Sherlock et al., 2015; Olubayo et al., 2025; Qader et al., 2019). Provinces such as KwaZulu-Natal and the Northern Cape remain epicentres of South Africa's HIV and TB epidemics, respectively. KwaZulu-Natal continues to report some of the highest HIV prevalence globally, particularly among women aged 25 - 49 years (HSRC, 2024; Kharsany et al., 2018), while TB remains disproportionately concentrated in rural and non-urban areas of the Northern Cape (Elliott et al., 2014; Oyageshio et al., 2024).

In South Africa, where HIV and TB coexist with a high burden of mental health disorders, empirical evidence on communicable diseases among psychiatric populations remains fragmented, small-scale, and methodologically limited. Existing studies in the setting have predominantly relied on facility-based surveys, localized cohorts, or cross-sectional designs with modest sample sizes, constraining their statistical power and limiting inference across provinces and population subgroups. Despite South Africa's extensive public health infrastructure and the availability of large routine administrative datasets, few studies have leveraged these data to systematically quantify communicable disease burden among individuals receiving mental health care. This absence represents a critical missed opportunity in a country facing intersecting epidemics that demand population-level surveillance and integrated responses. This study attempts to quantify the prevalence of communicable diseases across provinces and population subgroups using data from the 2019 general household survey. The findings of the study could aid healthcare practitioners,

policymakers and local governments in effectively identifying integrated, patient-centred models of care that simultaneously address mental health disorders and communicable diseases within a unified service platform. Moreover, the findings could further aid healthcare departments to strengthen the healthcare system and prevent widening inequities in access, delayed diagnosis, and increased mortality among psychiatric populations.

METHODS

Study design

A secondary data analysis was conducted using information from all male and female aged 15 years and above who participated in the General Household Survey (GHS) 2019. The study covered all nine provinces of South Africa. The GHS is an annual survey administered by Statistics South Africa to monitor living conditions and the socio-economic circumstances of households nationwide. It provides high-quality national data on development indicators, service delivery (including water, electricity, and housing), education, health, and agriculture, which are essential for informing government policy, planning, and decision-making. The survey was conducted across the 9 provinces of South Africa.

Participants

All males and females who had complete information on mental health disorder and on communicable disease status and relevant sociodemographic characteristics, including age, marital status, education, type of residence, and province, were included in the analysis. Participants with missing data on communicable diseases or mental health disorders were excluded. Using the GHS sampling frame, all eligible males and females from the 2019 datasets were selected to ensure adequate statistical power and sampling precision. A total of 410 participants were included in the final study sample.

Data Collection

The GHS data were collected through Computer-Assisted Personal Interviews (CAPI) conducted by trained field workers. We extracted information on age, marital status, education, type of residence, province, and communicable disease status for males and females aged 15 years and above from the Data First repository, a public platform that provides high-quality datasets (Stats SA, 2019). Four (4) common communicable diseases (Influenza, STD, HIV and TB) were reviewed. Each condition was coded on a binary scale (0 = no condition, 1 = presence of the condition). Communicable disease patterns were then classified into three groups: 0 = no communicable disease, 1 = single communicable disease, and 2 = Multimorbidity.

Data analysis

Data were analyzed using Stata version 16.1. The STATA survey set (‘svy’) of commands was used to account for the complex survey design. This ensured that the data were cleaned and representative of the

target population, in this case, those aged 15 years and above. Prevalence of communicable disease among people living with a mental health disorder was calculated using frequencies and proportions. Pearson's chi-square tests were used to assess the association between communicable disease occurrence and selected sociodemographic variables. Ordinal logistic regression was employed because the dependent variable (communicable disease prevalence) comprised ordered categories. This model estimates the relationship between predictor variables and the cumulative probability of being in higher versus lower outcome categories while preserving the ordinal structure of the data. The proportional-odds assumption was maintained, indicating that the effect of each predictor was consistent across outcome thresholds. A significance level of $p < .25$ was used in the univariate ordinal regression to identify candidate variables for model inclusion, whereas $p < .05$ was considered statistically significant for the chi-square tests of independence and the multivariable ordinal logistic regression.

Ethical considerations

We used secondary data from the 2019 General Household Survey. The data collected by Statistics South Africa complied with all necessary ethical considerations. The collection of data by Statistics South Africa is guided by the fundamental principles of statistics (see more details at https://www.statssa.gov.za/?page_id=361). Additionally, relevant ethical guidelines in accordance with the Declaration of Helsinki were adopted. Further information about the usage and ethical standards of the 2019 GHS data is available at https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/852/.

RESULTS

A total of 410 participants were included in the study, of whom 154 (37.6%) were female, and 256 (62.4%) were male. The mean age was 31.5 ± 18.5 years. Participants aged ≥ 50 years constituted the largest age group, 108 (26.3%). Moreover, secondary education was the most common educational attainment level in this study, 196 (47.9%). Most participants identified as African/Black 286 (69.8%), and over three-quarters were single, while 54 (13.2%) were married. Geographically, the highest proportions of participants were from KwaZulu-Natal (86; 21.0%), followed by the Eastern Cape (67; 16.3%) and Gauteng (67; 16.3%). Table 1 presents the demographic and geographical characteristics of the study participants.

Table 1: Summary of participants' sociodemographic and geographical profiles (n = 410)

Variables	n (%)
Gender	
Female	154 (37.51)
Male	256 (62.49)
Age	
≤ 18	81 (19.66)

19 – 29	99 (24.04)
30 – 39	80 (19.49)
40 – 49	43 (10.56)
≥ 50	108 (26.25)
Education	
No schooling	79 (19.19)
Primary	101 (24.53)
Secondary	196 (47.87)
Tertiary	34 (8.40)
Ethnicity	
African/Black	286 (69.83)
Coloured	55 (13.38)
Indian/Asian	19 (4.54)
White	50 (12.25)
Marital status	
Single	310 (75.60)
Cohabiting	18 (4.40)
Divorced	7 (1.75)
Married	54 (13.07)
Widow	21 (5.18)
Province	
Eastern Cape	67 (16.46)
Free State	20 (4.94)
Gauteng	67 (16.42)
KwaZulu-Natal	86 (20.97)
Limpopo	46 (11.25)
Mpumalanga	31 (7.52)
North West	31 (7.52)
Northern Cape	12 (2.95)
Western Cape	49(11.99)

Prevalence of communicable disease among people living with mental health disorders

The overall prevalence of communicable diseases was 13.03%, with 11.87% of participants reporting a single communicable disease (influenza, STD, HIV, or TB) and 1.16% reporting two or more. The prevalence of influenza, STD, HIV, and TB was 9.94%, 0.27%, 3.0%, and 1.17%, respectively, including individuals with multiple communicable diseases. Table 2 presents the associations between sociodemographic and geographic characteristics and communicable disease burden among individuals living with mental health disorders. Significant associations were observed for sex, age, marital status, and province ($p < 0.05$). Females had a slightly higher proportion of communicable disease than males (0.89% vs. 0.31%), whereas males had a marginally higher proportion of single communicable disease occurrence (6.08% vs. 5.79%). Participants aged ≥ 50 years accounted for the largest proportion of both single communicable disease cases (4.04%) and multimorbidity (0.89%). Regarding marital status, married participants exhibited the highest proportion of communicable disease, while single participants accounted for the highest proportion of single communicable disease cases. Geographically, Gauteng contributed the largest proportion of both single communicable disease cases (3.52%) and multimorbidity (0.62%).

Table 2: Correlational analysis of factors associated with communicable diseases among people living with mental disorder (n = 410)

Variables	Communicable disease			
	None	Single	Multimorbidity	p-value
Gender				
Female	127 (30.87)	24 (5.79)	3 (.85)	.018*
Male	230 (56.10)	25 (6.08)	1 (.31)	
Age				
≤ 18	76 (18.48)	5 (1.18)		.005*
19 – 29	88 (21.41)	10 (2.48)		
30 – 39	74 (17.96)	6 (1.41)	1 (.15)	
40 - 49	32 (7.81)	11 (2.75)	1 (.12)	
≥ 50	87 (21.31)	17 (4.04)	4 (.89)	
Education				
No schooling	71 (17.25)	7 (1.63)	(.31)	.456
Primary	84 (20.59)	16 (3.98)	(.15)	
Secondary	173 (42.09)	21 (5.08)	(.70)	
Tertiary	29 (7.04)	6 (1.36)	0 (.00)	
Ethnicity				
African/Black	253 (61.71)	28 (6.95)	5 (1.16)	.141
Coloured	51 (12.42)	4 (.96)		
Indian/Asian	15 (3.75)	3 (.79)		
White	37 (9.09)	13 (3.16)		
Marital status				
Cohabiting	14 (3.49)	4 (.92)		.004*
Divorced	5 (1.11)	3 (.64)		
Married	42 (10.13)	10 (2.32)	3 (.62)	
Single	278 (67.92)	30 (7.26)	2 (.42)	
Widow	18 (4.31)	3 (.74)	1 (.12)	
Province				
Western Cape	48 (11.60)	2 (.38)		.002*
Eastern Cape	59 (14.28)	9 (2.18)		
Free State	15 (3.57)	6 (1.37)		
Gauteng	50 (12.28)	14 (3.52)	3 (.62)	
KwaZulu-Natal	75 (18.33)	10 (2.36)	1 (.27)	
Limpopo	45 (10.87)	2 (.38)		
Mpumalanga	28 (6.79)	2 (.59)	1 (.15)	
North West	28 (6.74)	3 (.77)		
Northern Cape	10 (2.51)	1 (.32)	1 (.12)	

*Significance p-value < 0.05

Bivariate and multivariable ordinal logistic regression were conducted to identify sociodemographic and geographic factors associated with communicable disease (Table 3). In the unadjusted analysis, sex, race, marital status, and province were significantly associated with communicable disease. Compared with females, males had lower odds of communicable disease. The odds of having a communicable disease increased with age, with older participants demonstrating a greater likelihood of having communicable diseases than younger participants. Regarding ethnicity, white participants had the highest prevalence of having a communicable disease among the racial groups included in the study. Relative to single participants, those who were married, cohabiting, or divorced had approximately two- to fivefold higher odds of having communicable diseases. Similarly, participants residing in the Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Northwest, and Northern Cape showed higher odds of having communicable diseases compared with those residing in the Western Cape; however, the association for the Eastern Cape was not statistically significant ($p > 0.05$). In the adjusted analysis, marital status and province remained significantly associated with communicable disease. Divorced participants had the highest odds of having communicable diseases compared with single participants [OR: 6.56; 95%CI: (1.77, 24.28); p-value = .005], followed by cohabiting [OR: 3.61; 95%CI: (1.51, 8.64); p-value = .004] and married [OR: 2.29; 95%CI: (.85, 6.20); p-value = .101] participants. Participants residing in Free State [OR: 5.63; 95%CI: (1.13, 28.06); p-value = .035] and Gauteng [OR: 4.44; 95%CI: (1.18, 16.72); p-value = .028]. Interestingly, all other provinces had increased odds of having communicable diseases compared to those residing in the Western Cape; however, these associations were also not statistically significant ($p > 0.05$).

Table 3: Univariate and multivariate ordinal logistic regression analysis of factors affecting communicable disease burden among people living with mental illness (n = 410)

Variables	Communicable disease			
	Bivariate		Multivariate	
	OR (95%CI)	p-value	OR (95%CI)	p-value
Gender				
Female	1		1	
Male	.52 (.30, .92)	.026*	.96 (.56, 1.64)	.875
Age				
≥ 50	1		1	
≤ 18	1.44 (.53, 3.93)	.475	2.76 (.87, 8.74)	.084
19 – 29	.27 (.09, .83)	.022*	.39 (.11, 1.38)	.145
30 – 39	.52 (.28, .97)	.041*	.89 (.36, 2.16)	.793
40 - 49	.36 (.17, .78)	.010*	.45 (.18, 1.15)	.096
Education				
No schooling	1		1	
Primary	.59 (.21, 1.74)	.345		
Secondary	.73 (.37, 1.43)	.355		
Tertiary	1.00 (.47, 2.13)	.992		

Ethnicity				
African/Black	1		1	
Coloured	.58 (.26, 1.29)	.183*	.39 (.13, 1.19)	.097
Indian/Asian	1.57 (.25, 9.70)	.628	1.61 (.21, 12.43)	.646
White	2.54 (.99, 6.50)	.052	.98 (.35, 2.75)	.964
Marital status				
Single	1		1	
Cohabiting	2.74 (1.06, 4.88)	.035*	3.61 (1.51, 8.64)	.004*
Divorced	4.79 (1.45, 15.80)	.010*	6.56 (1.77, 24.28)	.005*
Married	2.66 (1.54, 4.59)	.001*	2.29 (.85, 6.20)	.101
Widowed	1.79 (.50, 6.35)	.365	1.57 (.31, 8.00)	.587
Province				
Western Cape	1		1	
Eastern Cape	4.56 (1.30, 15.94)	.018*	2.30 (.64, 8.26)	.200
Free State	11.17 (2.66, 46.86)	.001*	5.63 (1.13, 28.06)	.035*
Gauteng	10.37 (2.85, 37.76)	< .001	4.44 (1.18, 16.72)	.028*
KwaZulu-Natal	4.36 (1.13, 16.92)	.033*	1.79 (.42, 7.60)	.425
Limpopo	1.05 (.21, 5.17)	.951	.40 (.06, 2.48)	.323
Mpumalanga	3.31 (.77, 14.12)	.106*	1.55 (.31, 7.68)	.588
North West	3.43 (.77, 15.39)	.106*	1.37 (.27, 6.94)	.705
Northern Cape	5.47 (1.11, 26.89)	.037	3.80 (.63, 22.97)	.145

OR: Odds ratio; 95%CI: 95% confidence interval; *significance level p-value < 0.25; significance p-value < 0.05

DISCUSSION

This study aimed to investigate the prevalence and determinants of communicable disease among people living with mental health disorders. The overall prevalence of communicable diseases was 13.03%, comprising 11.87% with a single infection (either influenza, STD, HIV or TB alone) and 1.16% with at least one communicable disease. The prevalence of influenza, STD, HIV and TB was 9.94, .27%, 2.96% and 1.17%, respectively, including individuals with at least one communicable disease. Heslin et al. (2023) reported a lower prevalence of HIV among those using mental health services at 2.47% in the United Kingdom. Interestingly, Jallow et al. (2017) reported the lowest prevalence of HIV at 0.16% in Greater Stockholm, highlighting the disparities in the prevalence of HIV by geographic location. The disproportionately high prevalence observed in this study may, in part, reflect the limitations imposed by the small sample size, in contrast to previous studies that relied on considerably larger and more representative samples. In contrast to our current findings, several studies reported a higher prevalence. In the United States of America, the pooled prevalence among people with serious mental illness was 6%. A systematic review by Ayano et al. (2018) further revealed an elevated prevalence of 7.9% among

individuals with severe mental illness. Heslin et al. (2025) reported that 68.2% of the patients' mental health files had HIV status documented. Regarding TB, Qader et al. (2019) reported a higher prevalence of 3.57% among mentally ill patients in Afghanistan. These increasingly high prevalences reflect the burden of communicable disease on the health system, particularly in South Africa, where the healthcare sector experiences serious healthcare professional unemployment, burnout, budget cuts and a shortage of equipment and proper facilities, among others (Muswa, 2022; Nash et al., 2024; Mahomed & Adeleke, 2025; Malematja et al., 2025). This should be given serious attention to prevent the already increasing mortality due to communicable diseases.

STDs, on the other hand, remain a major global public health challenge, with the World Health Organization (WHO) estimating that more than one million curable STDs are acquired every day worldwide among individuals aged 15 - 49 years (WHO, 2025). South Africa has consistently reported high prevalence rates of STDs, particularly among young adults, women, and key populations at increased risk of infection. Surveillance data have shown substantial STD incidence across provinces, highlighting the ongoing transmission of both bacterial and viral STDs despite the availability of prevention and treatment programmes (Frank et al., 2023; Kufa et al., 2025). Despite the generally high burden of STDs in South Africa, important geographical and population-level variations still exist. Another study by Mokgatle (2021) reported a remarkably high self-reported prevalence of STDs of 77.3% among mental health care users in Tshwane, Gauteng, highlighting the substantial burden of communicable diseases in this vulnerable population. Furthermore, a systematic review and meta-analysis of African studies reported a pooled prevalence of 43.4% for risky sexual behaviour among individuals with severe mental illness, with the highest prevalence observed in studies from South Africa and Kenya (55.9%), suggesting that behaviours associated with STD transmission remain common among people with severe mental illness (Kelebie et al., 2025). Influenza, on the other hand, represents a substantial global health burden, with the WHO estimating approximately one billion cases of seasonal influenza annually (WHO, 2025). In South Africa, influenza surveillance has consistently documented seasonal outbreaks across all provinces, although prevalence varies by season, geography, age group, and underlying health status. Earlier surveillance data reported an overall influenza detection rate of approximately 13% among individuals tested through national sentinel surveillance programmes, with increased activity occurring during the winter months (Wolter et al., 2025). While most influenza infections are mild and self-limiting, severe disease is more common among older adults, young children, and individuals with chronic medical conditions, including mental health disorders.

Determinants of communicable diseases among individuals living with mental health disorders

The adjusted model revealed that marital status and province were the only significant determinants of communicable diseases; particularly, women who were divorced or cohabiting had higher odds of having communicable diseases. Consistent with our study findings, several studies corroborate the association between widowhood and an increased likelihood of communicable diseases (Qader et al., 2019; Akokuwebe et al., 2024; Olubayo et al., 2025). This is because widows face social and economic conditions

that could increase their vulnerability to communicable disease development (Lloyd-Sherlock et al., 2015; Tshaka et al., 2023; Jiao et al., 2025;). Although being married was not significant ($p > .05$), the higher odds among married participants warrant further investigation, and Qader et al. (2019) concur with the current finding that married participants are at greater risk of communicable diseases than single participants. On the other hand, the findings of Akokuwebe et al. (2024) further show diverging results concerning being single, that is, being single was associated with higher odds of HIV compared to those who were married. Also, Fox et al. (2021) further show that participants who were single were more likely to test positive for STDs compared to those who were married. The reason for the finding could be attributed to the fact that marital status plays a significant role in the non-use of condoms among married adults (Anglewicz et al., 2013; Dube et al., 2017; Cele et al., 2021), due to fertility issues and societal norms and familial expectations, among others.

Regarding provinces, the Free State and Gauteng were the only significant determinants of communicable disease in the adjusted model. Consistent with our study findings, prior studies have documented substantial transmission of STDs and influenza in these regions. According to Frank et al. (2023), STDs remain a significant public health concern across South Africa, with provincial variations in incidence reported in Gauteng, Free State, and other provinces. Moreover, influenza surveillance conducted by the National Institute for Communicable Diseases (NICD) has consistently demonstrated widespread influenza activity across all nine provinces in South Africa, including Gauteng and Free State, with seasonal peaks contributing substantially to the burden of communicable diseases (Wolter et al., 2025). The continued circulation of both STIs and influenza in these provinces may partly explain the elevated prevalence of communicable diseases observed among individuals living with mental health disorders in the present study. Moreover, provinces such as Eastern Cape, Northern Cape and KwaZulu Natal (KZN) reported elevated odds of communicable diseases, though the finding were not statistically significant (p-value > 0.05) in the adjusted model, the effects of communicable diseases in these provinces are well documented in literature. Several studies reported the high prevalence of HIV in the KZN region. According to Kharsany et al. (2018), the prevalence of HIV in KZN is 36.3%, and women were the most disproportionately affected due to low condom usage, among others. The Human Science Research Council (HSRC) published a report in 2024 citing that KZN had the second-largest prevalence of HIV in South Africa (HSRC, 2024). The report further shows that the age group 25–49 years and females are most affected. Worth noting is that Conan et al. (2022) reported the highest proportion of HIV-positive participants virally suppressed at 83.8%, showing that the government's efforts through antiretroviral treatment are effective in curbing the HIV prevalence. Although TB, like HIV, is a national crisis, several other authors report the high prevalence of TB in the Northern Cape area (Elliott et al., 2014; Oyageshio et al., 2024). The high prevalence was associated with male gender and residing in non-urban areas, further highlighting the uneven access to healthcare services in our setting. Additionally, the Eastern Cape reported a higher prevalence of STDs (Frank et al., 2023; Shaetonhodi et al., 2025). Also, Roberts et al. (2021) further report that the Eastern

Cape is among the provinces in South Africa with the highest prevalence of TB. Regarding results concerning being single, that is, being single was associated with higher odds of HIV compared to those who were married. The reason for the finding could be attributed to the fact that marital status plays a significant role in the non-use of condoms among married adults (Anglewicz et al., 2013; Dube et al., 2017; Cele et al., 2021), due to fertility issues, societal norms and familial expectations, among others.

Provinces such as Northern Cape and KwaZulu-Natal (KZN) had the highest odds of communicable diseases, though the findings were not statistically significant (p-value > 0.05); the effects of communicable diseases in these provinces are well documented in literature. Several had reported the high prevalence of HIV in the KZN region. According to Kharsany et al. (2018), the prevalence of HIV in KZN is 36.3%, and women were the most disproportionately affected due to low condom usage, among others. The Human Science Research Council (HSRC) published a report in 2024 citing that KZN had the second-largest prevalence of HIV in South Africa (HSRC, 2024). The report further shows that the age group 25–49 years and females are most affected. Worth noting is that Conan et al. (2022) reported the highest proportion of HIV-positive participants virally suppressed at 83.8%, showing that the government's efforts through antiretroviral treatment are effective in curbing the HIV prevalence. Although TB, like HIV, is a national crisis, several other authors report the high prevalence of TB in the Northern Cape area (Elliott et al., 2014; Oyageshio et al., 2024). The high prevalence was associated with male gender and residing in non-urban areas, further highlighting the uneven access to healthcare services in our setting.

Limitations

This study has several limitations that should be taken into consideration when interpreting the findings. Firstly, cross-sectional design prevents establishing causal relationships between sociodemographic and geographical factors and communicable disease burden. Secondly, the analysis relied on secondary survey data, which may be subject to reporting and recall bias, particularly for self-reported conditions such as HIV, TB, STD and influenza. Also, underreporting of mental health disorders and some communicable diseases, including STIs and HIV, due to stigma and social desirability bias, potentially resulting in underestimation of disease prevalence. Furthermore, the findings may not be generalizable to institutionalized individuals or populations outside South Africa, as the study was based on a specific population of individuals living with mental health disorders captured in the survey. Despite these limitations, the study provides valuable nationally representative evidence on the burden and determinants of communicable diseases among people living with mental health disorders in South Africa.

CONCLUSION

The present study highlights the substantial burden of communicable diseases, including both single disease occurrence and multimorbidity, among people living with mental health disorders in South Africa. Significant disparities were observed across marital status and geographic location, with divorced and cohabiting individuals and residents of the Free State and Gauteng exhibiting a greater burden of communicable diseases. These findings support existing evidence on the interrelationship between mental health and communicable disease vulnerability, highlighting the importance of adopting integrated frameworks to understand health outcomes among vulnerable populations. Moreover, the findings emphasize the need to strengthen the integration of communicable disease screening, prevention, and treatment services within mental healthcare programmes, while prioritizing high-risk population groups and underserved geographical areas. Tailored interventions that address both mental and physical health needs may help reduce the communicable disease burden and improve overall health outcomes. Future research could employ longitudinal designs to establish causal relationships between mental health disorders and communicable disease burden. Such evidence will be critical for informing targeted, evidence-based public health interventions and policies.

Conflicts of Interest

The authors declare no conflicts of interest.

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