Original Research Article

Factors associated with the prevalence of psychiatric illnesses in patients seen at the Kamenge neuropsychiatric center

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ABSTRACT

Background: The prevalence of mental illness is increasing worldwide. In low-income countries, health care systems are not able to meet mental health needs. The objective of this study was to identify factors associated with psychiatric illness at the Kamenge neuropsychiatric center.

Methods: A cross-sectional analytical study was conducted at the neuropsychiatric center on patients aged 10 years or older who were seen in medical consultations.

Results: The prevalence of psychiatric illness was 63.1% (57.44-68.59); the median age was 30 years (23-39); the sex ratio (M/F) was 1.5. In multivariate analysis, factors associated with psychiatric illness were male gender [adjusted OR= 2.33 (1.23-4.40)], illicit drug use [adjusted OR=7.85 (2.09-29.46)], family history of psychiatric illness [adjusted OR=5.83 (1.8-16, 65)], childhood maltreatment [adjusted OR=5.48 (1.8-16.65)], loss of a dear person [adjusted OR=4.01 (1.54-10.45)], family conflict [adjusted OR=2.67 (1.0-7.09)] as risk factors and urban area [adjusted OR=0.114 (0.05-0.23)] as a protective factor.

Conclusions: This study identified factors associated with the prevalence of psychiatric illnesses. The results of this study are useful to guide prevention and promotion strategies in mental health.

Keywords: Factors, Kamenge neuropsychiatric center, Psychiatric illnesses

INTRODUCTION

Mental health is "a state of well-being that enables people to fulfil their potential, cope with life's challenges, work successfully and productively, and be able to contribute to the community".[1]

Psychiatric illnesses refer to conditions where the symptoms are in the mental functions of the individual and manifest themselves in the personality or the way we interact with the environment.[2]

In 2019, one in eight persons worldwide had a mental disorder and one in five in conflict zones (WHO).[3]

Health systems are still not adequately addressing the needs of people with mental disorders and face a severe lack of resources. Across the world, there is a huge gap between treatment provision and treatment needs.

For example, 71% of people with psychosis worldwide do not receive mental health services. While 70% of people with psychosis are reportedly treated in high-income countries, only 12% receive mental health care in low-income countries.[4]

In Burundi, according to a baseline mental health survey, the population with acute psychosis accounts for 4%, depressive disorders are present in 4.6%, mania is present in 12.3% and schizophrenia in 4.5% of cases.[6]

The mental health survey conducted in 18 international general population sites in Europe, the Maghreb, the Pacific Islands, the Indian Ocean and the Caribbean

Islands found that predictive factors for psychiatric illnesses varied by region or site.[7]

No study has yet been conducted in Burundi to identify factors associated with psychiatric illness.

The aim of this study was to identify the factors influencing the onset of psychiatric illnesses in order to consider prevention measures

It was conducted at the Kamenge neuropsychiatric centre in Bujumbura, the economic capital of Burundi.

METHODS

The Kamenge neuropsychiatric centre is a national reference centre for the treatment of mental illness. It is located in the North Health District of Bujumbura City.

In the reception/file department, patients were classified as somatic and psychiatric patients and referred to doctors for consultations. Somatic patients are patients with other reasons for consultation than psychiatric symptoms

Type and population of study

This was an analytical cross-sectional study. The study population consists of patients aged 10 years or older received in the reception/recording department from 26 April 2021 to 26 June 2021. The sample size was determined using the Schwartz formula with a risk of error of 5% and a confidence level of 95%. The calculated sample size was 288 patients.

Patients were enrolled in the study according to their dates of consultation at the Kamenge neuropsychiatric centre.

Patients aged 10 years or older who were seen in the reception/recording department during the data collection period were included in the study.

Data collection

The data collection tool was the questionnaire. It was administered face-to-face by the interviewer to the patients or their relatives as questions were asked. The questions were asked in Kirundi for those who did not understand French.

Study variables

The dependent variable was the presence or absence of impaired mental function.

The explanatory variables were organized into three main groups, namely (i) variables relating to individual characteristics, variables relating to socio-environmental characteristics, and (ii) variables relating to genetic characteristics.

Individual characteristics included socio-demographic and behavioural characteristics of the respondent; socio-environmental characteristics concerned the context of family life; and finally genetic factors which concerned family history of mental illness

Data collection started after the management of the Kamenge neuropsychiatric centre had given permission for the study to be conducted. Informed consent was obtained from the respondents.

Information was collected on anonymous forms and the data collected was kept confidential.

Data analysis

Data entry was carried out in SPSS software. The database was exported to the strata 15 software for the various statistical analyses.

The chi square test was used to judge the significance of the statistical association between the dependent variables and the explanatory variables and the strength of the association was determined by calculating the crude odds ratio. All variables with a $p \leq 0.05$ in the bivariate analysis were included in the multivariate logistic regression model to adjust the variables between them.

The adjusted odds ratios with their 95% confidence intervals were calculated and interpreted.

The discriminatory power of the final model was determined by calculating the area under the curve and the goodness of fit by the Hosmer-Lemeshow test.

RESULTS

Characteristics of the respondents

During the period from 26 April to 26 June 2021, 288 patients aged 10 years or more were seen at the Kamenge neuropsychiatric centre for medical consultation; 182 patients were classified as psychiatric patients, i.e. 63.1%, and 106 were classified as somatic patients

The median age was 30 years; the majority of the patients were male, representing 60.1%; secondary education was predominant, representing 36.5%.

Regarding marital status, single people were in the majority at 50.7%. Patients with no occupation accounted for 43.7%; the monthly income was less than US$ 9.09 for 58.8% of respondents.

Patients with health insurance represented 39.9%. As for addictive substances, 10.1% used illicit drugs, 52.4% were regular alcohol users and 25.7% smoked tobacco. Family conflicts were found in 14.6%; 16.7% said they had lost a dear person and 13.5% had suffered abuse

during childhood; 21.18% had a family history of mental illness.

Table 1 presents the characteristics of the surveyed population.

Table I: Characteristics of respondents.

Variables	%
Age in years, median (Q1-Q 3)	30 years (23-39)
Sex (n=288)	
Female	39.9
Male	60.1
Level of education (n=288)	
None	17.7
Primary	27.8
Secondary	36.5
University	18.1
Marital status (n=288)	
Single	50.7
Divorced	4.9
Married	36.5
Widow	8
Place of residence (288)	
Urban	64.2
Rural	35.8
Profession (n=288)	
Trader	9.4
Artisan	11.8
Farmer	24.3
Official	10.8
Without	43.7
Monthly income (n=288)	
<9.09 US$	58.8
9.09-30.3 US$	27.4
30.3-75.75 US$	10.4
>75.75 US$	3.8
Religion (n=288)	
Catholic	40.6
Muslim	9
Protestant	24.3
Other	26
Illicit drug use	10.1
Regular alcohol consumption	52.4
Tobacco use	25.7
Having health insurance	39.9
Loss of a dear person	83.3
Family history of mental health	21.2
Family conflicts	14.6
Childhood maltreatment	13.5

Logistic models

Tables 2 and 3 show the results of the univariate logistic model between the existence of a psychiatric illness and

the individual or socio-environmental characteristics of the respondents.

Table 2: Individual characteristics.

Variables	N (%)	OR (95% CI)	P value
Age (n=288)			
10-24 (83)	66.3	1	
25-36 (123)	63.1	0.88 (0.49-1.58)	0.68
≥37 (82)	59.7	0.75 (0.40-1.42)	
Sex (n=288)			
Female (115)	62 (53.9)	1	
Male (173)	120 (69.4)	1.93 (1.18-3.15)	0.007
Level of education (n=288)			
None (51)	41 (80.4)	1	
Primary (80)	52 (65)	0.45 (0.061-0.19)	0;0000
Secondary (105)	72 (68.6)	0.53 (0.23-1.18)	
University (52)	17 (32.7)	0.11 (0.04-0.291)	
Place of residence (n=288)			
Rural (105)	91 (86.7)	1	
Urban (183)	91 (49.7)	0.15 (0.08-0.28)	0.0000
Marital status (n=288)			
Single (146)	95 (65.1)	1	
Divorced (14)	11 (78.6)	1.96 (0.52-7.36)	
Married (105)	57 (54.3)	0.63 (0.38-1.06)	0.02
Widow (23)	19 (82.6)	2.54 (0.82-7.89)	
Profession (n=288)			
Trades (27)	17 (63)	1	
Artisan (34)	16 (47.1)	0.52 (0.18-1.46)	
Farmer (70)	58 (82.9)	2.84 (1.04-7.71)	0.001
Official (31)	15 (48.4)	0.55 (0.19-1.57)	
Without (126)	76 (60.3)	0.89 (0.37-2.11)	
Religion (288)			
Catholic (117)	77 (65.8)	1	
Muslim (26)	16 (61.5)	0.831 (0.55-1.25)	0.37
Protestant (29)	4 (64.3)	0.935 (0.805-1.08)	
Others (75)	44 (58.7)	0.737 (0.37-1.454)	
Having health insurance (n=288)			
No (173)	112 (64.7)	1	
Yes (115)	70 (60.9)	0.84 (0.52-1.37)	0.5
Monthly income (n=288) US$			
30.3-75.75 (30)	17 (56.7)	1	
< 9.09 (168)	117 (69.6)	1.75 (0.79-3.8)	<0.001
9.09-30.3 (79)	48 (60.8)	1.18 (0.5-2.70)	
>75.75 (11)	0	1	
Illicit drug use (n=288)			
No (259)	156 (60.2)	1	
Yes (29)	26 (89.7)	5.72 (1.68-19.39)	0.002
Regular alcohol consumption (n=288)			
No (137)	78 (58.9)	1	
Yes (151)	104 (68.9)	1.67 (1.03-2.71)	0.036
Family history of mental illness (n=288)			
No (227)	128 (56.4)	1	
Yes (61)	54 (88.5)	5.96 (2.6-13.68)	<0.001
Tobacco use (n=288)			
No (214)	125 (58.4)	1	
Yes (74)	57 (77)	2.38 (1.30-4.37)	0.004

Table 3: Socio-environmental characteristics.

Variables	N (%)	OR (CI 95%)	P value
Childhood maltreatment (n=288)			
No (249)	148 (59.4)	1	0.001
Yes (39)	34 (87.2)	4,64 (1.75-12.26)	
Loss of a dear person (n=288)			
No (240)	141 (58.7)	1	<0.001
Yes (48)	41 (85.4)	4,11 (1.77-9.54)	
Family conflicts (n=288)			
Yes (42)	34 (80.9)	1	0.01
No (246)	148 (60.2)	2,81 (1.25-6.33)	

Table 4 shows the results of the saturated model.

Table 4: Saturated logistic model.

Variables	OR adjusted (95%)	P value
Sex		
Fémale	1	0.009
Male	2.33 (1.23-4.40)	
Illicit drug use		
Yes	7.85 (2.09-29.46)	0.002
No	1	
Family history of mental illness		
Yes	5.83 (2.3-14.76)	<0.001
No	1	
Childhood maltreatment		
Yes	5.48 (1.8-16.65)	0.003
No	1	
Loss of a dear person		
Yes	4.01 (1.54-10.45)	0.004
No	1	
Family conflicts		
Yes	2.67 (1.0-7.09)	0.048
No	1	
Place of residence		
Urban	0.114 (0.05-0.23)	<0.001
Rural	1	

The individual factors statistically associated with psychiatric illnesses are sex (p=0.007), level of education (p<0.001), place of residence (p<0.001), marital status (p=0.02), profession (p=0.001), and use of addictive substances [illicit drugs (p=0.002), tobacco (p=0.004), alcohol (p=0.036)].

Socio-environmental factors identified as associated with mental illness were family conflict (p=0.01), childhood abuse (p=0.001), loss of a dear person (p<0.001).

Family history of mental illness was also associated with psychiatric illness (p<0.001).

In multivariate analysis, male gender [OR=2.33 (1.23-4.4)] adjusted for other variables, illicit drug use [OR=7.85 (2.09-29.4)], family history of mental illness [OR=5.83 (2.3-14.7)], childhood maltreatment [OR=5, 48(1.8-16.6)], loss of a dear person [OR=4.01 (1.54-

10.4)], family conflict [OR=2.67 (1.0-7.09)] increase the risk of developing mental illness.

Adequacy of the model

The discriminating power between the presence or absence of a psychiatric illness is illustrated by the area under the curve which showed excellent discrimination (AUC=0.85).
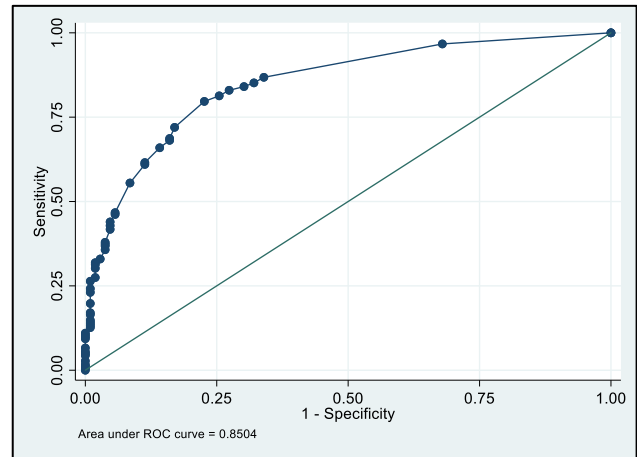

Figure 1: Adequacy of the model.

The results of the Hosmer-Lemeshow test showed that the model was well fitted (p=0.9852).

DISCUSSION

Psychiatric illnesses remain a public health concern in Burundi, as in other low-income countries. Their prevalence continues to rise and the need for treatment is far from being met.

The World Health Organization, through the mental health action plan 2013-2020, currently extended to the year 2030, has defined 4 objectives to improve mental health i) to achieve more effective leadership and governance in the field of mental health; ii) to provide comprehensive, integrated and responsive mental health and social care services in a community setting; iii) implement promotion and prevention strategies; iv) and strengthening information systems, gathering more evidence and developing research.

The objectives of our study were to identify factors associated with the prevalence of psychiatric illnesses at Kamenge neuropsychiatric centre.

In this study, psychiatric diseases were not classified according to the different forms of clinical manifestations. This aspect of the study could be developed in future studies.

Our study included 288 patients seen in medical consultations at Kamenge neuropsychiatric centre and the

prevalence of mental illness was 63.2% (57.3-68.8). This high prevalence of psychiatric illness is explained by the location of the study; the neuropsychiatric centre is a specialized centre for mental health care in addition to other ambulant patients without mental illness who are received there for medical consultations.

The factors that were identified as being statistically associated with psychiatric illnesses were sex, income, education, residence, marital status, profession, substance use (drugs, tobacco, alcohol), loss of a dear person, childhood abuse, family conflict, family history of mental illness; each factor taken in isolation.

In fact, we observed a higher prevalence of psychiatric illness in patients who were male, patients who had a low level of education (none, primary and secondary), patients who had a low monthly income (less than 30.3 US$), lived in rural areas, farmers, divorced or widowed.

The predominance of males has also been found in studies carried out in health care facilities in Morocco by Raoui et al and Coulibaly et al in Mali and Karfo and colleagues in Burkina Faso.[8-11] Ouédraogo in Burkina Faso and Chabaud in an international study have shown a female predominance among the mentally ill.[6,12]

In a baseline survey on mental health in Burundi, the distribution of mental illnesses according to gender is disparate.

Depression is more frequent among women (5.3%) than men (3.8%); mania is more frequent among men (13.5%) than women (3.8%); acute psychosis is also more frequent among men (5.3%) than women (4.3%) while schizophrenia is more frequent among women (5.2%) than men (3.8%).[5]

It is critical to conclude from these results whether one or the other sex is predominant in psychiatric diseases.

A high prevalence of psychiatric illnesses has also been found in individuals with a low level of education, low income, widowhood or divorce, notably in the study by Raoui and colleagues.[8]

Karfo in Burkina Faso found that the majority of psychiatric patients had experienced psychosocial stress and were of low educational level or had a history of psychiatric illness in their family.[11]

The Quebec mental health survey showed a higher prevalence of illicit drug use in subjects with a mental disorder.[13]

Factors increasing the risk of developing psychiatric illnesses are gender, rural location, childhood abuse, loss of a loved one, family conflict and family history of mental illness.

Ouédraogo also found that rural area [2.73 (1.98-3.78)] is a factor increasing the risk of psychiatric illness and male gender [0.67 (0.56-0.81)] as a factor reducing the risk of mental illness.[12]

Chabaud and colleagues also identified female gender as a factor increasing the risk of psychiatric illness [1.294 (1.105-1.516)] whether in Europe, the Maghreb, the Caribbean or the Indian Ocean.[6]

The role of gender in the onset of mental illness seems variable and debatable

In contrast, substance use, psychosocial stressors and family history of mental illness are observed in both low- and high-income countries.

The rural environment has been identified as a factor in the onset of mental illness in Burundi in our study and in Burkina Faso. Indeed, the population living in rural areas has a lower income than in urban areas, and access to mental health care, both economically and socially, is precarious.

CONCLUSION

This study conducted in a psychiatric care center identified factors associated with the prevalence of psychiatric illnesses.

Psychosocial stress factors, illicit drug use and rural environment were identified as risk factors for psychiatric illnesses at the Kamenge neuropsychiatric center.

These results are of great importance for the implementation of prevention and promotion strategies in mental health.

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