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Hospital-based distribution of psychiatric disorders among adults in the Psychiatry Department of the Analankininina University Hospital Center, Toamasina, Madagascar

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Abstract

Background: Contemporary hospital-based epidemiological data on adult psychiatric disorders in Madagascar remain scarce.

Aim: To describe the hospital-based distribution of ICD-11 psychiatric diagnoses among adults managed in the Psychiatry Department of the Analankininina University Hospital Center in Toamasina (CHUAT) between 2022 and 2024 and to explore associations with key sociodemographic characteristics.

Methods: We conducted a retrospective cross-sectional analysis of routine clinical records for adults (≥18 years) seen in outpatient consultation and/or hospitalized during the study period. Diagnoses were made during routine clinical assessments by department clinicians using ICD-11 criteria. Descriptive statistics were used to report diagnostic frequencies and patient characteristics; bivariate associations were tested using Chi-square ($p \leq 0.05$).

Results: Among 3,204 adult patient episodes managed in the department, 1,277 records met eligibility criteria for analysis. Women represented 51.21% of the sample. Schizophrenia (27.88%) and depressive disorders (25.84%) were the most frequent diagnoses, followed by substance use and addictive behavior disorders (15.35%), dissociative disorders (13.70%), generalized anxiety disorders (11.20%), and acute psychotic disorders (10.81%). Several diagnoses showed statistically significant bivariate associations with sex, age group, occupational status, and marital status.

Conclusion: In this hospital-based sample from Toamasina, schizophrenia and depressive disorders were the most frequently diagnosed conditions. These findings provide updated service-level information to support planning and organization of psychiatric care in a resource-limited setting.

Keywords: Depressive disorders; Hospital-based study; ICD-11; Madagascar; Psychiatric disorders; Schizophrenia

1. Introduction

In Madagascar, population-based estimates of psychiatric disorders remain limited and heterogeneous; earlier program reports suggested a substantial burden of mental disorders [1]. In hospital settings, patients' sociodemographic characteristics may influence the distribution of psychiatric diagnoses. Social prejudice may also lead to stigmatization of individuals with mental illness, thereby affecting service utilization patterns. In order to adjust national mental health

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policies in Madagascar, it is essential to have an updated overview of psychiatric disorders within each psychiatry department in the country. In this context, the present study was conducted to describe the hospital-based frequency and distribution of psychiatric disorders among adults in the psychiatry department of Toamasina from 2022 to 2024, to identify predominant pathologies, and to explore associations with key sociodemographic factors.

2. Methods

The study was conducted in the Psychiatry Department of the Analankininina University Hospital Center in Toamasina (CHUAT). It was a retrospective cross-sectional, descriptive, and analytical study based on routine clinical records covering the period from January 1, 2022, to December 31, 2024. The study population consisted of adult patients (≥18 years) who were hospitalized and/or seen in outpatient consultation at the psychiatry department of CHUAT during the study period.

Inclusion criteria were: patients aged 18 years and older; patients hospitalized and/or followed in outpatient consultation at the psychiatry department of CHUAT; and patients with a psychiatric diagnosis established according to ICD-11 criteria. Patients younger than 18 years were not included. Records were excluded if key information required for analysis (e.g., age/sex, occupational status or marital status, and/or final ICD-11 diagnosis) was missing or illegible, rendering the record unusable for study variables.

An exhaustive sampling method was used, including all eligible records that met the inclusion criteria during the study period. The sociodemographic variables studied included sex, age, occupational status, and marital status.

The primary outcome was the hospital-based proportion of records with each ICD-11 psychiatric diagnosis in the eligible study sample. Patients were categorized by sex (male or female). Age was analyzed by groups (<20 years, 20–29 years, 30–39 years, and ≥40 years) to reflect pragmatic service-level reporting; this categorization is acknowledged as a limitation due to unequal interval widths at the extremes. Occupational status was used to assess the socioeconomic situation of patients at the time of consultation/admission and included the primary sector (agriculture, fishing, forestry), the secondary sector (processing of raw materials, manufacturing industry, construction), the tertiary sector (commercial, social, administrative, cultural services, health, education, tourism, transport, financial services, communication), and unemployed patients. Marital status was classified as single, married, separated, divorced, cohabiting, or widowed.

Clinical variables were based on psychiatric diagnoses established according to ICD-11 criteria during routine clinical assessment by trained clinicians in the CHUAT Psychiatry Department (psychiatrists and/or supervised physicians), as documented in the medical records. The following diagnoses were considered: acute psychotic disorder, schizophrenia, depressive disorder, bipolar disorder, generalized anxiety disorder, post-traumatic stress disorder, personality disorders, dissociative disorders, substance use and addictive behavior disorders, dementia, and other rare disorders (including autism spectrum disorder).

Statistical analysis aimed to determine the influence of patients' sociodemographic characteristics on the distribution of psychiatric diagnoses. The variables analyzed included age, sex, occupational status, and marital status.

Sociodemographic and clinical data were collected from medical records of hospitalized and outpatient patients from January 2022 onward. The collected information was subsequently transcribed onto standardized survey forms designed to centralize all study parameters.

Data entry and manuscript preparation were performed using Microsoft Word® 2021 for formatting and presentation. Data processing and analysis were carried out using EPI Info™ version 7. A descriptive statistical analysis was performed to characterize the study population and determine the frequency of each pathology. Quantitative variables, particularly age, were described using means and standard deviations.

To assess associations between sociodemographic variables and clinical diagnoses, a bivariate analysis was conducted using EPI Info™ version 7. The Chi-square test was used for qualitative variables. Results were considered statistically significant when the p-value was less than or equal to 0.05. Given the exploratory nature of multiple bivariate comparisons and the absence of multivariable adjustment, findings are interpreted cautiously as associations rather than causal effects.

2.1. Ethical Considerations

The study protocol was reviewed and approved by the Ethics Research Committee of the Analankininina University Hospital Center in Toamasina (CHUAT) in accordance with international ethical standards for research involving human participants (Approval No.: [insert ethical approval number]). The study ensured confidentiality of data, patient anonymity, and respect for informed consent procedures as applicable to retrospective record review.

3. Results

During the study period from January 1, 2022, to December 31, 2024, a total of 3,204 adult patient episodes were managed in the Psychiatry Department of the Analankininina University Hospital Center in Toamasina (including outpatient consultations and hospitalizations).

Among these, 1,277 records met the inclusion criteria and were retained for final analysis after exclusion of records with missing or illegible key variables required for analysis.

Among the included patients, 654 were female (51.21%) and 623 were male (48.79%), yielding a sex ratio of 0.85, indicating a slight female predominance. Patients aged 40 years and older represented the largest proportion of cases, accounting for 37.27% (n = 476), followed by those aged 20–29 years (31.25%, n = 399), 30–39 years (23.57%, n = 301), and patients younger than 20 years (7.91%, n = 101).

Regarding occupational status, 40.88% of patients were unemployed (n = 522). Patients working in the tertiary sector accounted for 39.86% (n = 509), followed by the secondary sector with 14.80% (n = 189) and the primary sector with 4.46% (n = 57). Concerning marital status, married patients represented the largest proportion (38.21%), followed by single patients (29.91%), those living in cohabitation (15.82%), separated patients (9.01%), widowed patients (5.79%), and divorced patients (1.25%).

According to ICD-11 criteria, schizophrenia was the most frequent diagnosis, accounting for 27.88% of cases (n = 356). Depressive disorders ranked second with 25.84% (n = 330). Substance use and addictive behavior disorders represented 15.35% (n = 196), followed by dissociative disorders (13.70%, n = 175), generalized anxiety disorders (11.20%, n = 143), and acute psychotic disorders (10.81%, n = 138). Bipolar disorders accounted for 4.54% (n = 58), dementia for 4.15% (n = 53), post-traumatic stress disorder for 2.66% (n = 34), and other rare disorders (including personality disorders and autism spectrum disorder) for 1.41% (n = 18).

Bivariate analyses of associations between psychiatric diagnoses and sociodemographic variables are presented in Table 1.

Table 1 Associations between psychiatric diagnoses and sociodemographic variables

Diagnosis	Variable	Chi-square (χ^2)	p-value
Autism spectrum disorder (ASD)	Sex	2.10	0.14
	Age	1.60	0.65
	Occupational status	2.89	0.40
	Marital status	4.68	0.45
Acute psychotic disorder	Sex	0.0034	0.95
	Age	18.41	0.0004*
	Occupational status	18.43	0.0004*
	Marital status	14.82	0.01*
Schizophrenia	Sex	17.30	<0.0001*
	Age	30.79	<0.0001*
	Occupational status	59.45	<0.0001*
	Marital status	122.71	<0.0001*

Depressive disorder	Sex	64.90	<0.0001*
	Age	12.77	0.005*
	Occupational status	64.97	<0.0001*
	Marital status	54.03	<0.0001*
Bipolar disorder	Sex	12.77	0.0003*
Generalized anxiety disorder	Sex	12.31	0.0004*
	Age	7.67	0.053
	Occupational status	35.69	<0.0001*
	Marital status	32.15	<0.0001*
Post-traumatic stress disorder	Sex	1.33	0.21
	Age	1.64	0.64
Personality disorders	All variables	-	>0.05
Dissociative disorders	Sex	12.10	0.0005*
	Occupational status	13.30	0.004*
	Marital status	25.93	0.0001*
Substance use disorders	Sex	171.74	<0.0001*
	Occupational status	41.96	<0.0001*
	Marital status	28.62	<0.0001*
Age-related dementia	Age	83.80	<0.0001*
	Occupational status	49.34	<0.0001*
	Marital status	217.27	<0.0001*

* Statistically significant at $p \leq 0.05$

4. Discussion

In this hospital-based sample of adults managed in the Psychiatry Department of CHUAT during 2022–2024, 57.55% of adult patient episodes met eligibility criteria and had a documented ICD-11 psychiatric diagnosis in the records analyzed. This proportion reflects the service burden and diagnostic distribution within a tertiary hospital setting, rather than population hospital-based proportion. Comparisons with other hospital series in Madagascar (e.g., Mahajanga) should therefore be interpreted cautiously, given differences in study periods, case-mix, admission/attendance patterns, and diagnostic procedures [2].

The slight female predominance observed is consistent with several African and international studies, particularly regarding mood and anxiety disorders [3–5]. This difference may be related to biological and hormonal factors, as well as to psychosocial determinants specific to women, including family and professional responsibilities [6].

From a diagnostic perspective, schizophrenia and depressive disorders were the most frequently recorded conditions. Schizophrenia was more frequently diagnosed among men, younger adults, unemployed patients, and single patients in bivariate analyses, consistent with patterns reported in other African hospital-based studies [3,7]. Depressive and anxiety disorders were more frequently observed among women, married patients, and those working in the tertiary sector; these associations may also reflect differential help-seeking behavior, referral patterns, and service accessibility across groups [8,9].

Substance use and addictive behavior disorders were more frequently diagnosed among men, unemployed individuals, and single patients, in line with literature linking socioeconomic vulnerability and substance-related presentations in clinical settings [10–12]. Dementia diagnoses were concentrated in the ≥40 years category in this dataset; however, this

broad age grouping may mix heterogeneous clinical entities and should be interpreted as a service-level description rather than an estimate of age-related risk [12].

4.1. Strengths and limitations

This retrospective cross-sectional analysis of adult patients managed in psychiatry at the Analankininina University Hospital Center in Toamasina over a three-year period (2022–2024), using ICD-11 criteria, describes the hospital-based diagnostic distribution and associated sociodemographic patterns. It represents one of the few recent and structured service-level descriptions in Madagascar, providing local information that can support planning and organization of mental health care services.

5. Conclusion

This study, based on an exhaustive analysis of adult patients managed in psychiatry at the Analankininina University Hospital Center in Toamasina over a three-year period and using ICD-11 criteria, demonstrates a high hospital-based proportion of psychiatric disorders with distinct sociodemographic profiles according to diagnosis. It represents one of the few recent and structured hospital-based descriptions in Madagascar, providing essential local data to guide mental health care strategies planning.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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