

Anxiety and Depression Among Residents of the Professors' Estate, University of Kinshasa, Democratic Republic of the Congo: A Cross-Sectional Study

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Abstract

Background

Anxiety and depressive disorders are leading causes of morbidity and disability worldwide, with a marked increase since the COVID-19 pandemic. In sub-Saharan Africa, these issues are amplified by unfavorable socio-economic conditions, limited access to mental health services, and strong stigma surrounding psychological disorders. In the Democratic Republic of the Congo (DRC), studies on mental health in the university setting remain limited. This study aimed to estimate the prevalence of anxiety and depressive disorders and identify associated factors among residents of the "Plateau des Professeurs" of the University of Kinshasa.

Methods

A cross-sectional analytical study was conducted at the "Plateau des Professeurs" estate of the University of Kinshasa, DRC, from December 2025 to January 2026. An exhaustive sampling method was used, including all eligible households. Anxiety and depressive disorders were measured using the Hopkins Symptom Checklist-25 (HSCL-25), with a threshold of ≥ 1.75 defining a probable case. Bivariate and multivariate logistic regression analyses were performed to identify factors independently associated with anxio-depressive disorders.

Results

A total of 201 residents were included. The mean age was over 65 years for 49.3% of participants, and 74.1% were male. The prevalence of anxiety was 29.4% (95% CI: 23.4–36.1), depression 15.9% (95% CI: 11.5–21.7), and concomitant anxio-depressive disorders 19.9% (95% CI: 14.9–26.0). In multivariate analysis, administrative staff had a significantly higher risk of anxio-depressive disorders (adjusted OR 6.79, 95% CI: 2.29–20.15; $p = 0.001$) compared with academic staff, as did scientific staff (adjusted OR 5.13, 95% CI: 1.92–13.73; $p = 0.001$). Lack of supervisor support was also independently associated with anxio-depressive disorders (adjusted OR 2.81, 95% CI: 1.17–6.74; $p = 0.021$).

Conclusions

Nearly one in five residents of the University of Kinshasa Professors' Estate met criteria for probable anxio-depressive disorder. Administrative and scientific staff were disproportionately affected, and lack of supervisor support tripled the risk. These findings support the implementation of targeted mental health interventions and leadership training programs within the university setting in the DRC.

Background

Anxiety and depressive disorders are today among the leading causes of morbidity and disability worldwide, affecting more than one billion people and representing a substantial burden for health systems and national economies [1,2]. Recent estimates put the global prevalence of anxiety and depression at approximately 4.4% and 4.0% respectively, with a marked increase since the COVID-19 pandemic [1,2].

In the professional sphere, particularly in cognitively demanding environments such as universities, workers are exposed to multiple stressors including workload, performance pressure, job insecurity, and a lack of institutional recognition. These factors contribute to increased chronic stress and a higher risk of anxiety and depressive disorders [3,4]. Several studies conducted in Europe, Africa, and Asia report a prevalence of anxious and depressive symptoms among university staff ranging between 20% and 40% [5–7].

In sub-Saharan Africa, these issues are amplified by unfavorable socio-economic conditions, limited access to mental health services, and strong stigma surrounding psychological disorders. Available data show that academic and administrative university staff are particularly vulnerable owing to job precarity, a lack of institutional resources, and heavy workloads [8,9].

In the Democratic Republic of the Congo (DRC), studies on mental health in the university setting remain limited. However, a context marked by economic constraints, inadequate infrastructure, and fragile institutional organization exposes university staff to elevated psychosocial risks. In Kinshasa, the country's capital, these factors are compounded by rapid urbanization, the cost of living, and difficult working conditions [10].

Despite these challenges, little empirical data exist on anxiety and depressive disorders among university staff in the DRC, particularly in specific residential settings such as the "Plateau des Professeurs" of the University of Kinshasa. This study aims to fill this gap by estimating the prevalence of anxiety and depressive disorders and identifying associated factors within this population.

Methods

Study design and setting

This was a cross-sectional analytical study conducted at the Plateau des Professeurs estate of the University of Kinshasa (UNIKIN), Democratic Republic of the Congo, from December 2025 to January 2026.

Study population

The study population consisted of adults residing at Plateau des Professeurs, including academic staff (professors), scientific staff (assistants and heads of academic works), administrative staff, and their

spouses.

Inclusion and exclusion criteria

Inclusion criteria were: (i) being a resident of Plateau des Professeurs; (ii) being a University of Kinshasa staff member or their spouse; (iii) being aged 18 years or older; and (iv) having freely consented to participate. Exclusion criteria were: (i) presence of severe cognitive impairment limiting comprehension and (ii) refusal to participate.

Sampling and sample size

An exhaustive (census-type) sampling method was used. All households of eligible residents present during the data collection period were included.

Study variables

The dependent variable was anxio-depressive disorder (ADD), measured using the Hopkins Symptom Checklist-25 (HSCL-25) scale, with a threshold of ≥ 1.75 defining a probable case [11].

Independent variables included: (i) sociodemographic variables (age, sex, marital status, religion, household size); (ii) occupational variables (professional category, grade, seniority); (iii) work-related variables (workload, working hours, secondary activities); and (iv) psychosocial variables (support from colleagues, support from supervisors, moral support).

Data collection

Data were collected through direct interviews using a standardized questionnaire administered via the SurveyCTO application on Android smartphones. Interviewers, drawn from the Field Epidemiology Training Program (FETP) Mental Health track, were trained beforehand and supervised throughout the data collection period to ensure data quality. A pretest of the questionnaire was conducted before the study formally began.

Data analysis

Collected data were first checked to identify missing values, inconsistencies, and possible data-entry errors before being exported and analyzed using Stata version 18 (StataCorp LLC, College Station, TX, USA). A descriptive analysis was first performed to describe the characteristics of the study population. Qualitative variables were presented as absolute frequencies and proportions, while quantitative variables were summarized using means and standard deviations, or medians and interquartile ranges when the distribution was not normal.

Bivariate analysis was then performed to assess the association between the various independent variables and the presence of anxio-depressive disorders. The strength of these associations was estimated using crude Odds Ratios (OR) with their 95% confidence intervals (95% CI). Finally, a multivariate logistic regression analysis was performed to identify factors independently associated with anxio-depressive disorders. All variables with a p-value below 0.20 in the bivariate analysis were entered into the multivariate model. Final results were expressed as adjusted odds ratios (aOR) with their 95% confidence intervals. The statistical significance threshold was set at a p-value below 0.05.

Ethical considerations

The study received approval from the Ethics Committee of the Kinshasa School of Public Health. Informed consent was obtained from all participants. Data were collected anonymously and confidentially, and subjects with elevated scores were referred to mental health services.

Results

Sociodemographic characteristics

A total of 201 residents of the Plateau des Professeurs were interviewed. Table 1 presents their sociodemographic characteristics.

Table 1
Sociodemographic characteristics of residents of the
Professors' Estate, University of Kinshasa, DRC, December
2025–January 2026 (n = 201)

Variable	n	%	95% CI
Age group (years)			
18–35	5	2.5	1.0–5.9
36–50	47	23.4	18.0–29.8
51–65	50	24.9	19.3–31.3
>65	99	49.3	42.3–56.2
Sex			
Male	149	74.1	67.6–79.7
Female	52	25.9	20.2–32.4
Marital status			
Single	8	4.0	2.0–7.8
Married	163	81.1	75.0–85.9
Divorced/separated	4	2.0	0.7–5.2
Widow/widower	26	12.9	8.9–18.4
University staff			
Yes	186	92.5	87.0–95.5
No	15	7.5	4.5–12.0
Occupational category (n = 186)			
Administrative	32	17.2	12.4–23.4
Academic	110	59.1	51.9–66.0
Scientific	44	23.7	18.1–30.3
Seniority at UNIKIN (n = 186)			
1–5 years	9	4.5	2.3–8.4
6–10 years	21	10.4	6.9–15.5
>10 years	171	85.1	79.4–89.4
Religion			
No religion	8	4.0	2.0–7.8

Variable	n	%	95% CI
Catholic	124	61.7	54.7–68.2
Protestant	33	16.4	11.9–22.2
Revival churches	27	13.4	9.3–18.9
Other	9	4.5	2.3–8.4

The study population was predominantly composed of older individuals, with 49.3% (95% CI: 42.3–56.2) aged over 65 years. The intermediate age brackets (36–50 and 51–65 years) were roughly equivalent in size, while young adults aged 18 to 35 represented only 2.5% of the sample. Men accounted for 74.1% of the population. Most residents were married (81.1%; 95% CI: 75.0–85.9), and 12.9% were widowed.

Of the 93% who were UNIKIN staff members, academic staff formed the majority (59.1%; 95% CI: 51.9–66.0). The study population had substantial professional seniority, with 85.1% (95% CI: 79.4–89.4) having more than ten years of seniority at UNIKIN. The Catholic faith was the most widely practiced religion, accounting for 61.7% of the population (95% CI: 54.7–68.2).

Prevalence of anxiety and depressive disorders

Table 2 presents the prevalence of anxiety, depression, and concomitant anxio-depressive disorders among the study population. Nearly one-third of residents presented anxious symptoms, at 29.4% (95% CI: 23.4–36.1). Depression was present in 32 residents, corresponding to 15.9% (95% CI: 11.5–21.7). The prevalence of concomitant anxio-depressive disorders was 19.9% (95% CI: 14.9–26.0).

Table 2
Prevalence of anxiety, depression, and anxio-depressive disorders among residents of the Professors' Estate, University of Kinshasa, DRC, December 2025–January 2026 (n = 201)

Variable	n	%	95% CI
Anxiety			
Yes	59	29.4	23.4–36.1
No	142	70.6	63.9–76.6
Depression			
Yes	32	15.9	11.5–21.7
No	169	84.1	78.3–88.5
Anxio-depressive disorder			
Yes	40	19.9	14.9–26.0
No	161	80.1	74.0–85.1

Work-related characteristics

Table 3 presents the work-related characteristics of the study participants. The analysis revealed a mixed profile marked by a heavy professional workload alongside a high level of social support within the institution. Among residents, 50.2% (95% CI: 43.3–57.2) reported a heavy workload. In addition, the majority (58.2%; 95% CI: 51.2–64.9) worked outside UNIKIN as well. Regarding daily working hours, 70.6% of residents worked 8 hours or less per day.

Table 3
Work-related characteristics of residents of the Professors'
Estate, University of Kinshasa, DRC, December 2025–
January 2026 (n = 201)

Variable	n	%	95% CI
Heavy workload			
Yes	101	50.2	43.3–57.2
No	100	49.8	42.8–56.7
Other duties outside UNIKIN			
Yes	117	58.2	51.2–64.9
No	84	41.8	35.1–48.8
Daily working hours			
≤8 hours	142	70.6	63.9–76.6
>8 hours	59	29.4	23.4–36.1
Rest (sufficient)			
Yes	111	55.2	48.3–62.0
No	90	44.8	38.0–51.7
Colleague support			
Yes	156	77.6	71.3–83.3
No	45	22.4	17.1–28.7
Supervisor support			
Yes	146	72.6	66.0–78.4
No	55	27.4	21.6–34.0
Moral/emotional support			
Yes	122	60.7	53.7–67.2
No	79	39.3	32.8–46.3

Recovery time appeared limited: 55.2% (95% CI: 48.3–62.0) of residents reported insufficient rest. Despite these difficulties, 77.6% (95% CI: 71.3–83.3) of residents reported receiving support from their peers, and 72.6% (95% CI: 66.0–78.4) reported support from hierarchical superiors. Overall, 60.7% (95% CI: 53.7–67.2) of residents reported receiving moral support.

Factors associated with anxio-depressive disorders

Table 4 presents the results of the bivariate and multivariate analyses of factors associated with anxiety-depressive disorders.

Table 4

Factors associated with anxio-depressive disorders among residents of the Professors' Estate,
University of Kinshasa, DRC, December 2025–January 2026 (n = 201)

Variable	Total	ADD n (%)	Crude OR	p	95% CI	Adjusted OR	p	95% CI
Age group								
≤50 years	52	13 (32.5)	1.00 (ref)	—	—	—	—	—
>50 years	149	27 (67.5)	0.66	0.287	0.31–1.41	—	—	—
Sex								
Male	149	27 (67.5)	0.66	0.287	0.31–1.41	—	—	—
Female	52	13 (32.5)	1.00 (ref)	—	—	—	—	—
Occupational category								
Administrative	32	12 (35.3)	6.73	< 0.001	2.51–18.09	6.79	0.001	2.29–20.15
Academic	110	9 (26.5)	1.00 (ref)	—	—	1.00 (ref)	—	—
Scientific	44	13 (38.2)	4.71	0.001	1.84–12.05	5.13	0.001	1.92–13.73
Seniority								
≤10 years	30	7 (17.5)	0.79	0.610	0.31–1.99	—	—	—
>10 years	171	33 (82.5)	1.00 (ref)	—	—	—	—	—
Work overload								
Yes	101	24 (60.0)	1.64	0.170	0.81–3.31	1.17	0.709	0.51–2.73
No	100	16 (40.0)	1.00 (ref)	—	—	1.00 (ref)	—	—
Other occupational duties								
ADD = anxio-depressive disorder; OR = odds ratio; CI = confidence interval. Variables with p < 0.20 in bivariate analysis were included in the multivariate model. — = not applicable.								

Variable	Total	ADD n (%)	Crude OR	p	95% CI	Adjusted OR	p	95% CI
Yes	117	18 (45.0)	0.51	0.061	0.26–1.03	0.68	0.400	0.28–1.66
No	84	22 (55.0)	1.00 (ref)	—	—	1.00 (ref)	—	—
Colleague support								
Yes	156	31 (77.5)	0.99	0.985	0.43–2.27	—	—	—
No	45	9 (22.5)	1.00 (ref)	—	—	—	—	—
Supervisor support								
Yes	146	23 (57.5)	1.00 (ref)	—	—	1.00 (ref)	—	—
No	55	17 (42.5)	2.39	0.018	1.16–4.94	2.81	0.021	1.17–6.74
Moral support								
Yes	122	21 (52.5)	0.66	0.237	0.33–1.32	—	—	—
No	79	19 (47.5)	1.00 (ref)	—	—	—	—	—
Working hours								
≤8 hours	142	28 (70.0)	1.00 (ref)	—	—	—	—	—
>8 hours	59	12 (30.0)	1.04	0.920	0.49–2.22	—	—	—
ADD = anxio-depressive disorder; OR = odds ratio; CI = confidence interval. Variables with $p < 0.20$ in bivariate analysis were included in the multivariate model. — = not applicable.								

Sociodemographic characteristics. Individuals over 50 years of age had a non-significantly reduced risk of anxio-depressive disorders (crude OR 0.66, 95% CI: 0.31–1.41; $p = 0.287$) compared with those aged 50 or younger. Sex was not significantly associated with the outcome (crude OR 0.66, 95% CI: 0.31–1.41; $p = 0.287$ for men versus women).

Occupational category was strongly associated with anxio-depressive disorders. Administrative staff had a markedly higher risk, with a crude OR of 6.73 (95% CI: 2.51–18.09; $p < 0.001$); this association persisted in the multivariate analysis, with an adjusted OR of 6.79 (95% CI: 2.29–20.15; $p = 0.001$).

Similarly, scientific staff had a crude OR of 4.71 (95% CI: 1.84–12.05; $p = 0.001$), which remained significant in the multivariate analysis with an adjusted OR of 5.13 (95% CI: 1.92–13.73; $p = 0.001$). Seniority was not associated with anxio-depressive disorders.

Occupational characteristics. Anxio-depressive disorders were not associated with work overload, either in the bivariate analysis (crude OR = 1.64, 95% CI: 0.81–3.31; $p = 0.170$) or in the multivariate analysis (adjusted OR = 1.17, 95% CI: 0.51–2.73; $p = 0.709$). Other occupational duties were only weakly associated in the bivariate analysis (crude OR = 0.51; 95% CI: 0.26–1.03; $p = 0.061$) and became non-significant in the multivariate analysis (adjusted OR = 0.68; 95% CI: 0.28–1.66; $p = 0.400$).

Psychosocial factors. Colleague support was not associated with anxio-depressive disorders (crude OR = 0.99; 95% CI: 0.43–2.27; $p = 0.985$). In contrast, a lack of supervisor support was strongly associated with anxio-depressive disorders. Residents without such support had a crude OR of 2.39 (95% CI: 1.16–4.94; $p = 0.018$), confirmed in the multivariate analysis with an adjusted OR of 2.81 (95% CI: 1.17–6.74; $p = 0.021$). Moral support was not significantly associated with the outcome (crude OR = 0.66; 95% CI: 0.33–1.32; $p = 0.237$).

Discussion

The population studied at the UNIKIN Professors' Estate is characterized by a particularly distinct sociodemographic profile: older men (49.3% aged over sixty-five), married, of Catholic faith, with more than ten years of university seniority (85.1%), and a predominance of academic staff (59.1%). This profile corresponds to the older-age category, which is recognized in the international literature as carrying an elevated risk of mental health disorders.

The prevalence of concomitant anxio-depressive disorders (19.9%) observed at the professors' estate exceeds the rates documented in African general populations and approaches those observed in academic populations experiencing distress. Abraham and colleagues (2025) reported that 49% of faculty at a South African university experienced severe psychological distress and that 27% presented significant burnout, proportions higher than those observed in international studies, where roughly one-third of academics show elevated levels of distress [6]. This high prevalence fits within the theoretical framework of the Job Demands-Resources (JD-R) model, which posits that excessive occupational demands combined with inadequate organizational resources increase the risk of stress and burnout [12].

The frequency of anxiety (29.4%) exceeds that of depression (15.9%), consistent with findings reported in the literature. The 2024 RKI Panel survey conducted in Germany found that 14.3% of adults exhibited anxious symptoms, with a higher prevalence among women and among young adults aged eighteen to twenty-nine (32.4%) [13]. In the Congolese context, anxiety may be particularly pronounced owing to uncertainties linked to the security environment, delays in salary payment, and instability of pension arrangements.

Our finding that occupational category is the strongest predictor of anxio-depressive disorders—with administrative and scientific staff at six-fold and five-fold higher risk, respectively, compared with academic staff—has important implications for mental health policy within the University of Kinshasa. Administrative staff may face particular stressors related to bureaucratic workload, limited decision-making autonomy, and exposure to institutional dysfunction, while scientific staff (assistants and heads of academic work) may experience high teaching loads, limited career advancement prospects, and job insecurity [14]. These findings are consistent with the broader literature on occupational mental health in low-resource settings, where non-academic university staff are often overlooked in wellness programs [15].

The independent association between lack of supervisor support and anxio-depressive disorders (adjusted OR 2.81) underscores the critical role of leadership and management practices in protecting mental health within academic institutions. This finding aligns with the JD-R model, which identifies supportive leadership as a key job resource that can buffer the negative effects of high job demands [12]. In the DRC context, where institutional resources are scarce and hierarchical structures are often rigid, the quality of supervisory relationships may be one of the few modifiable factors available to protect staff mental health.

Several limitations of this study should be acknowledged. First, the HSCL-25 is a screening instrument rather than a diagnostic tool [11]. It identifies individuals at increased risk of anxiety and depressive disorders but cannot establish a clinical diagnosis and should therefore be complemented by a comprehensive clinical assessment. In addition, the HSCL-25 is sensitive to cultural differences, which may influence the interpretation and reporting of psychological symptoms. Second, the exhaustive sampling within a single residential estate limits the generalizability of findings to the broader University of Kinshasa workforce or to other universities in the DRC. Third, several potentially important factors—including the security environment, delays in salary payments, and uncertainty regarding retirement benefits—were not assessed in this study and may represent additional risk factors for anxiety and depressive disorders. Finally, the cross-sectional design precludes causal inferences; longitudinal studies are needed to establish temporal relationships between occupational factors and mental health outcomes.

Conclusions

The findings of the present study warrant particular attention. The high prevalence of anxiety and depressive symptoms among participants suggests the presence of substantial psychological distress. Indeed, nearly one in five residents (19.9%; 95% CI: 14.9–26.0) met the criteria for probable anxio-depressive disorder according to the HSCL-25 scale. Such psychological distress may adversely affect quality of life, cognitive functioning, and ultimately the professional performance of affected individuals.

Multivariable analysis revealed a strong association between occupational category and the prevalence of anxio-depressive disorders. Administrative and scientific staff were the most affected groups. These

findings suggest that the risk of anxio-depressive disorders is particularly pronounced among these occupational categories, regardless of the level of peer support available. Furthermore, a lack of support from immediate supervisors was associated with a threefold increase in the risk of probable anxio-depressive disorders.

These findings support the implementation of mental health interventions for residents living on the University of Kinshasa campus. Although such services should be available to all university staff, they should not be implemented uniformly. Instead, priority should be given to administrative and scientific staff, who appear to be disproportionately affected. Given that supervisory support emerged as an independent predictor of anxio-depressive disorders, interventions aimed at strengthening leadership, supervision, and personnel management practices among senior staff may also contribute to reducing the burden of mental health problems within the University of Kinshasa workforce. Future studies should include University of Kinshasa employees who do not reside on campus to determine whether the risk factors identified in this study are generalizable to the broader university workforce or are specific to this residential community.

Abbreviations

ADD Anxio-depressive disorder

aOR Adjusted odds ratio

CI Confidence interval

DRC Democratic Republic of the Congo

FETP Field Epidemiology Training Program

HSCL-25 Hopkins Symptom Checklist-25

JD-R Job Demands-Resources

MNH Maternal and newborn health

OR Odds ratio

UNIKIN University of Kinshasa

Declarations

Ethics approval and consent to participate

The study received approval from the Ethics Committee of the Kinshasa School of Public Health. Informed consent was obtained from all participants. All methods were carried out in accordance with

relevant guidelines and regulations.

Consent for publication

Not applicable. No individual person's data, images, or videos are included in this manuscript.

Availability of data and materials

The dataset(s) supporting the conclusions of this article are available from the corresponding author upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

[To be completed by authors: specify individual contributions using CRediT taxonomy, e.g., Conceptualization, Methodology, Data curation, Formal analysis, Writing – original draft, Writing – review & editing, Supervision, etc.]

KNMJ: Conceptualization, methodology, data curation, formal analysis, writing original draft, writing review, and editing

KBJ: Conceptualization, methodology, data curation, formal analysis, writing a draft, editing

UNB: Methodology, writing review and editing, Formal analysis

LOR: Conceptualization, methodology, data curation, writing review

MMT: Methodology, writing review

MKD: Conceptualization, methodology, writing review, supervision

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