



## Mental health and headaches in university professors

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### Introduction

There is a lot of discussion about the world's quality of life, mental health, disease improvement standards according to the WHO, and so many actions and attitudes in a movement to improve life, in addition to life expectancy.

### Objectives

To determine the mental health status of university medical professors at Unifipa, emphasizing the relation between headache disabling and depression and anxiety's scores.

### Methodology

Cross-sectional cohort in a single intervention, which consisted of responding to a health and quality of life questionnaire, focusing on mental health, and in this report, headaches.

### Results

Participants' number was 46. About 51% were between 31 and 40 years old; 56.5% were women, 67.4% were married or in a stable union, 21.7% had a master's degree and 26.1% had a PHD. Regarding mental health, it was noted that professors with severe depression showed the presence of a moderate or severe level of anxiety, while those with minimal depression showed a low level of anxiety. Regarding to the headaches, it was observed that HIT-test scores above 50 correlated more with higher depression and anxiety scores and lower HIT-test scores correlated with lower depression and anxiety scores.

### Conclusion

Research is important to evaluate the university professors' mental health and predict actions that can be taken to improve it. And headaches cause disabling when associated to depression and anxiety.

We conclude that headache's burden can related to worsening depression and anxiety's scores, even though not significantly.



## Introduction

Quality of Life (QoL) has established itself as a significant concept and a target of research and practice in the fields of health and medicine (1). Quality of life at work consists of the dynamic management of physical, technological, and psychosocial factors that affect culture and renew the organizational climate, reflecting on the well-being of workers (2).

The promotion and protection of mental health at work is an area of growing interest and can be supported through legislation and regulation, organizational strategies, managerial training and interventions for workers (3).

All WHO Member States are committed to implementing the “Comprehensive Mental Health Action Plan 2013-2030”, which aims to improve mental health by strengthening effective leadership and governance, providing comprehensive, integrated and responsive community care, implementing promotion and prevention strategies, and enhancing information, evidence and research systems (3).

Research into the mental health of university lecturers is of paramount importance due to the academic and personal pressures they face on a daily basis. The increasing demand for academic excellence, combined with factors such as financial pressure and working conditions, can have a significant impact on their overall well-being. Therefore, understanding these challenges and their implications is crucial if policies and practices that promote healthy and sustainable working environments are to be informed (4).

The exercise of professorship involves the oversight of pedagogical issues carried out in the classroom.

The results of a national study show that (female) professors are not spared the global demands to which they are subjected, such as extra-class tasks, long working hours, fulfilling tasks with short deadlines, multiple jobs and classroom workloads (4). Although it involved women, this study can be extrapolated to male professors, without going into the issue of female overload, since our research encompassed all professors regardless of race or gender.

Approximately 1 billion people in the world suffer from migraine and this disorder remains the second leading cause of disability in the world, after low back pain, despite considerable progress in diagnosis and treatment. The incidence of migraine attacks has its peak between early and mid-adolescence, although attacks can occur at any age. Anxiety and depression are two of the most prevalent comorbidities associated with migraine, affecting the prognosis, treatment and clinical outcome of the disease, with a worsening quality of life (5).

The methodology adopted in this research consisted of a cross-sectional observational study carried out using a form on health and quality of life, with a focus on mental health, applied via Google Forms and answered by 46 university medical professors. The questionnaire addressed issues related to quality of life, the impact of headache, anxiety and depression, using a variety of scales and multiple choice questions. The results highlighted a significant association between mental and physical health, as well as between mental health and socioeconomic conditions, anxiety and depression. This research is important for assessing the quality of life and mental health of university professors and predicting actions that could be taken to improve this quality of life. In this publication, we highlight headaches in 13 professors.

## Methods

This is a single-interaction cross-sectional observational study carried out using a form on health and quality of life with a focus on mental health, using Google Forms (Appendix 2), with 46 responses.

All the participants agreed to answer the questionnaire and their consent was obtained by signing the Informed Consent Form (ICF) (Appendix 2). The research complies with the ethical parameters in accordance with national law, and the work has a Brazil platform protocol (CAAE: 47649421.0.0000.5430).

The parameters were analyzed using multiple-choice questions in a check-in box format, with short topics, aiming for less time spent and greater comfort in carrying them out.

The questionnaire had four categories of questions of interest to the topic analyzed: 14 questions on quality of life; HIT-6, (6) composed of six questions analyzing the impact of headache on the individual's life, answered using a 5-point Likert scale (6-never, 8-rarely, 10-sometimes, 11-many times, 13-always); 21 questions addressing symptoms related to anxiety (7) and 21 similar questions about depression (8).

### Statistical methodology

In relation to the study categories, different variables related to mental and physical health were compared, as well as socioeconomic status, anxiety and depression. The results presented show the analysis of association between different categorical variables using the chi-square test of independence, with a significance level of  $p < 0.05$ . This test is a fundamental statistical tool for assessing whether there is a significant relationship between two categorical



variables, i.e. whether one variable is associated with the other in a statistically significant way.

## Result

Different variables were considered. The relationship between mental health and physical health, financial situation, anxiety and depression were included. The number of participants was 46. Demographic characteristics such as age, race and marital status are described in Table 1.

Table 1. Demographic characteristics of the sample studied (n=46).

Demographics	n	%
<b>Color</b>		
Yellow	2	4.3
White	43	93.5
I prefer not to write	1	2.2
<b>Age</b>		
26-30	2	4.3
31-35	9	19.6
36-40	11	23.9
41-45	8	17.4
46-50	4	8.7
51-55	3	6.5
56-60	5	10.9
>60	4	8.7
<b>Gender</b>		
Female	26	56.5
Male	20	43.5
<b>Marital status</b>		
Married/stable union	31	67.4
Divorced/separated	3	6.5
Boyfriend/Girlfriend/engaged	3	6.5
Single	9	19.6
<b>Education</b>		
University degree	18	39.1
Doctorate	12	26.1
Master's degree	10	21.7
Postdoc or lecture	5	10.9
Specialist	1	2.2

In relation to the study categories, different variables related to mental and physical health were compared, as well as socioeconomic status, anxiety and depression. The results presented show the correlation analysis between different categorical variables using the chi-square test of independence. The answers to the depression and anxiety questionnaires are shown in Table 2.

Table 2. Distribution of responses to the anxiety and depression Scale

Anxiety	n	Proportion	Depression	n	Proportion
Severe	1	2.17%	Severe	6	13.04%
Moderate	6	13.04%	Moderate	10	21.74%
Mild	8	17.39%	Mild	5	10.87%
Minimal	31	67.39%	Minimal	25	54.35%

### Mental health vs. anxiety rating:

A significant association was found between mental health and anxiety rating ( $\chi^2 = 22.93, p = 0.028$ ). This indicates that varying levels of anxiety are related to different states of mental health.

### Mental health vs. depression rating:

The analysis revealed a significant association between mental health and depression classification ( $\chi^2 = 26.45, p = 0.009$ ). The results indicate that different levels of depression are associated with different states of mental health.

### Anxiety rating vs. depression rating:

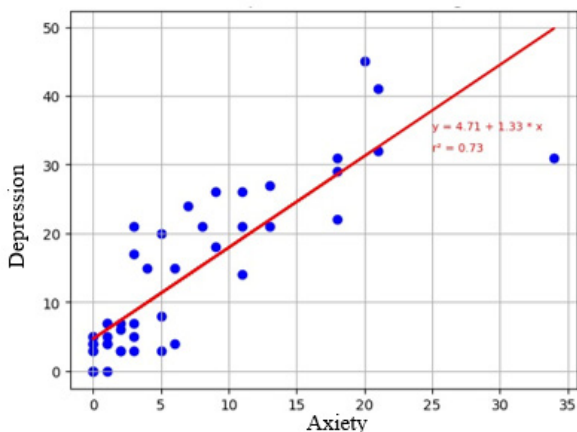
The analysis revealed a significant association between anxiety rating and depression rating ( $\chi^2 = 60.78, p < 0.001$ ).

This indicates that different levels of anxiety are associated with different levels of depression. Furthermore, this analysis showed a variability ranging from a minimum of 0 to a maximum of 34 in the anxiety rating and 45 in the depression rating, as shown in Figure 1.

This graph shows the correlation between minimal/light levels of anxiety and minimal/light levels of depression, as well as moderate and severe levels of both.

Therefore, professors with severe depression showed moderate or severe levels of anxiety, while those with minimal depression showed low levels of anxiety.

Figure 1. Anxiety vs depression among patients.



Statistical analysis revealed that different levels of anxiety and depression are correlated with different states of mental health, indicating the complexity of these interactions.

**Emphasizing headache: only 13/46 professors reported headache in their lifetime (28.2%)**

There was no statistical power, but the study followed the same line from the start, where HIT-test scores above 50 correlated more with higher depression and anxiety scores and lower HIT-test scores correlated with lower depression and anxiety scores (Table 3).

Table 3. Distribution of responses in relation to anxiety, depression and headache in the professors (n=13) who had headaches

HIT – test - Headache	n	%
Mild to moderately disabling headache (<50)	9	69.2
More disabling headache (>50)	4	30.8
<b>Beck anxiety scale</b>		
Minimal/mild anxiety (0 to 7 and 8 to 15)	9	69.2
Moderate/severe anxiety (16 to 25-26-63)	4	30.8
<b>Beck depression scale</b>		
Minimal/mild depression (0-13-14-19)	7	53.8
Moderate/severe depression (20-28-29-63)	6	46.2

## Discussion

In this study we sought to show how the mental health of university professors, particularly in the academic area of Medicine, is a subject of growing concern due to the complex demands and requirements inherent in the academic environment. The study mentioned above, which sought to determine the mental health status and quality of life of university medical professors at the Padre Albino University Center, offers a valuable contribution to understanding these issues.

The concept of mental health is controversial, and understanding the history and evolution of the concept of mental health is essential to understanding the problems for which it was intended to solve and the purposes for which it may serve in the future. A universal (global) definition based on the physical domain could be analyzed separately from several unique (local) definitions based on the mental and social domains (9).

The cross-sectional observational approach used in the study allows for a one-off analysis of teachers' mental health status, providing important insights into mental health-related symptoms and perceived quality of life, using scales and multiple-choice questions addressing: headache, anxiety and depression and one's own way of life. This methodology is crucial for identifying areas of concern and intervention, providing a solid basis for developing strategies to support and promote the mental health of these professionals.

Based on the results, it is notable that less than a quarter of the participants rate their mental health as excellent, with the majority of them rating it as only good. The same occurred with physical health, indicating a strong influence between the two. This two-way relationship between mental and physical health highlights the importance of an integrated approach to health care that recognizes and addresses the needs of both the body and the mind (10).

Secondly, we can mention the correlation between mental health and lack of money. Studies have consistently shown an association between financial problems and worsening mental health, highlighting the importance of approaches that consider both economic and psychosocial aspects in promoting well-being (11).

A national study of university nursing professors showed that the distribution of the domains general quality of life, physical quality of life, psychological quality of life, social relations and environmental quality of life were significantly and negatively influenced by excessive and compulsive work. The high labor demands characteristic of the work process of stricto sensu professors are directly associated with quality of life, similar to our study which shows quality of life and financial impact despite the majority being doctors, considered a more advantageous social class. Also in this study of nurse professors, the authors show that workaholicism negatively impacts the quality of life of professors due to the strong association of both constructs in those investigated, indicating that when work becomes a priority, it deteriorates the quality of life, being physical, psychological, social relationships and the environment in which they live (12).

The complex interrelationship between mental health, physical health, lack of financial resources, depression and anxiety highlights the multifaceted nature of the



challenges faced by many people. Lack of money can not only create financial stress and constant worries about basic support, but also directly impact physical health, making it difficult to access healthy food, adequate medical care and physical activity (10,11). This interconnectedness highlights the need for integrated approaches that consider both economic and psychosocial aspects in promoting people's overall well-being.

The WHO places special emphasis on protecting and promoting human rights, empowering people with lived experiences and ensuring a multi-sectoral and multi-stakeholder approach. The WHO continues to work at national and international levels - including in humanitarian contexts - to provide governments and partners with strategic leadership, evidence, tools and technical support to strengthen a collective response to mental health and enable a transformation towards better mental health for all (3).

The statistical analysis in our study revealed that different levels of anxiety and depression are correlated with different states of mental health, indicating the complexity of these interactions.

Regarding headaches, our study did not detail the characteristics used to classify headaches, but was able to define an association, although not significant, between the severity of depression and anxiety and higher scores on the HIT-test.

Anxiety and depression are known to be two of the most prevalent comorbidities associated with migraine, affecting the prognosis, treatment and clinical outcome of the disease. Research has found that people with migraines are five times more likely to develop first-onset major depression than those without migraines. At the same time, the risk of first-onset migraine is three times higher for people with lifetime depressive disorder than for those without. The likelihood of suffering from anxiety and suicidal tendencies is higher among patients with migraines, especially chronic migraines. There is a two-way relationship between migraine and anxiety disorders, with one increasing the risk of the other. There are three types of anxiety disorders most often associated with migraine: panic disorder (PD), generalized anxiety disorder (GAD) and obsessive-compulsive disorder (OCD). Our study may be a starting point for more extensive research into how work and comorbidities interact with each other, as well as for more detailed headache diagnoses in future studies (5).

The strengths of this study are that it analyzed numerous aspects related to overall health, such as depression, anxiety, headaches, financial issues, and self-reported physical and mental health, and managed to relate all these aspects in a statistically significant way, demonstrating the need for interventions to improve health and quality of

life in this group that contributes to the training of new doctors in Brazil.

However, there were weaknesses in the study, such as the small sample size, which may not reflect the entire nation. The difficulty in answering the questionnaire was notorious and was probably related to the lack of time on the part of these professors to take a few minutes to answer the survey.

In conclusion, it is clear that the results provide solid evidence that mental health is significantly associated with physical health, lack of money, depression and anxiety and measures to improve the quality of life and work of this category need to be planned and implemented.

## Conclusion

Therefore, solid evidence that mental health is significantly associated with anxiety scores and depression scores was provided. Depression and anxiety scores also seem to be associated with worse degrees of disabling headaches. All this is crucial for guiding mental health policies and interventions, showing how these factors are interrelated and highlighting the importance of integrated approaches to promote overall well-being.

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