

**TEACHING AND MENTAL HEALTH: AN OVERVIEW OF BASIC EDUCATION  
AND HIGHER EDUCATION IN BRAZIL**

***DOCÊNCIA E SAÚDE MENTAL: UM RETRATO DA EDUCAÇÃO BÁSICA E DO  
ENSINO SUPERIOR NO BRASIL***

***ENSEÑANZA Y SALUD MENTAL: UN RETRATO DE LA EDUCACIÓN BÁSICA Y LA  
EDUCACIÓN SUPERIOR EN BRASIL***



Karen Christina Rodrigues dos SANTOS<sup>1</sup>  
e-mail: christinamvs.krds@gmail.com



Letícia de OLIVEIRA<sup>2</sup>  
e-mail: oliveira\_leticia@id.uff.br



Rachel Silva Machado LANA<sup>3</sup>  
e-mail: rachelmachado@id.uff.br



Rony Magalhães MARTINS<sup>4</sup>  
e-mail: ronymagalhaes@id.uff.br



Arthur Viana MACHADO<sup>5</sup>  
e-mail: artvmachado@gmail.com



Sarah Rocha ALVES<sup>6</sup>  
e-mail: alvesrochasarah@gmail.com



Marta de Freitas NUDELMAN<sup>7</sup>  
e-mail: martanudelman@gmail.com



Mirtes Garcia PEREIRA<sup>8</sup>  
e-mail: mirtes\_pereira@id.uff.br



Fernanda STANISÇUASKI<sup>9</sup>  
e-mail: fernanda.staniscuaski@ufrgs.br

<sup>1</sup> Federal University of Rio Grande do Sul (UFRGS), Porto Alegre – Rio Grande do Sul (RS) – Brazil. Ph.D. Graduate Program in Science Education.

<sup>2</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Ph.D. Professor in the Graduate Program in Biomedical Sciences.

<sup>3</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Master's degree. Psychologist, Division of Health Care (UFF).

<sup>4</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Master's degree. Graduate Program in Biomedical Sciences.

<sup>5</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Ph.D. Postdoctoral Researcher, Graduate Program in Biomedical Sciences.

<sup>6</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Master's degree. Graduate Program in Biomedical Sciences.

<sup>7</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Ph.D. Graduate Program in Biomedical Sciences.

<sup>8</sup> Fluminense Federal University (UFF), Rio de Janeiro – Rio de Janeiro (RJ) – Brazil. Ph.D. Professor in the Graduate Program in Biomedical Sciences.

<sup>9</sup> Federal University of Rio Grande do Sul (UFRGS), Porto Alegre – Rio Grande do Sul (RS) – Brazil. Ph.D. Professor in the Graduate Program in Science Education.

**How to reference this paper:**

Santos, K. C. R., Oliveira, L., Lana, R. S. M., Martins, R. M., Machado, A. V., Alves, S. R., Nudelman, M. F., Pereira, M. G., & Stanisçuaski, F. (2026). Teaching and mental health: An overview of basic education and higher education in Brazil. *Doxa: Rev. Bras. Psico. e Educ.*, 27, e026008. <https://doi.org/10.30715/doxa.v27i00.20706>



| **Submitted:** 21/08/2025  
| **Revisions required:** 24/08/2025  
| **Approved:** 24/02/2026  
| **Published:** 04/07/2026

---

**Editor:** Prof. Dr. Paulo Rennes Marçal Ribeiro  
**Deputy Executive Editor:** Prof. Dr. José Anderson Santos Cruz

**ABSTRACT:** Teachers' mental health has gained increasing attention in debates on education and work. In this study, we assessed the mental health of Brazilian basic and higher education teachers, focusing on symptoms related to depression, Posttraumatic Stress Disorder (PTSD), loneliness and optimism. The sample consisted of 1711 teachers who completed an online questionnaire using psychometric scales validated for the Brazilian population, between March and June 2022, still in a pandemic context. The results showed a higher prevalence of symptoms of depression, PTSD and loneliness among basic education teachers, while higher education teachers had higher optimism scores. The differences observed between the groups highlight the importance of monitoring teachers' mental health in a segmented manner, respecting the specificities of each career. The data contribute to the monitoring of mental health indicators in this professional category and reinforce the urgency of prevention and care actions.

**KEYWORDS:** Depression. Teaching. Post-traumatic stress. Mental health. Loneliness.

**RESUMO:** *A saúde mental dos docentes tem ganhado crescente atenção nos debates sobre educação e trabalho. Neste trabalho, avaliamos a saúde mental de docentes do ensino básico e superior brasileiros, com foco em sintomas relacionados à depressão, Transtorno de Estresse Pós-traumático (TEPT), solidão e otimismo. A amostra consistiu em 1711 docentes que responderam um questionário on-line com escalas psicométricas validadas para a população brasileira, entre março e junho de 2022, ainda em contexto pandêmico. Os resultados demonstraram maior prevalência de sintomas de depressão, TEPT e solidão entre docentes da educação básica, enquanto docentes do ensino superior apresentaram escores mais elevados de otimismo. As diferenças observadas entre os grupos evidenciam a importância de acompanhar a saúde mental de docentes de forma segmentada, respeitando as especificidades de cada carreira. Os dados contribuem para o monitoramento de indicadores de saúde mental na categoria e reforçam a urgência de ações de prevenção e cuidado.*

**PALAVRAS-CHAVE:** Depressão. Docência. Estresse pós-traumático. Saúde mental. Solidão.

**RESUMEN:** *La salud mental del profesorado ha cobrado creciente relevancia en los debates sobre educación y trabajo. En este estudio, evaluamos la salud mental de docentes brasileños de educación básica y superior, centrándonos en síntomas relacionados con la depresión, el Trastorno de Estrés Postraumático (TEPT), la soledad y el optimismo. La muestra estuvo compuesta por 1711 docentes que respondieron un cuestionario en línea con escalas psicométricas validadas para la población brasileña, entre marzo y junio de 2022, aún en contexto pandémico. Los resultados mostraron una mayor prevalencia de síntomas de depresión, TEPT y soledad entre docentes de educación básica, mientras que docentes de educación superior presentaron puntuaciones más elevadas de optimismo. Las diferencias observadas entre los grupos evidencian la importancia de monitorear la salud mental docente de forma segmentada, respetando las especificidades de cada carrera. Los datos contribuyen al monitoreo de indicadores de salud mental en la categoría y refuerzan la urgencia de acciones de prevención y cuidado.*

**PALABRAS CLAVE:** Depresión. Enseñanza. Estrés postraumático. Salud mental. Soledad.

## INTRODUCTION

Teaching is a relational activity, immersed in constant interpersonal interactions with students, the community, and the institution, in which teachers not only teach but also engage emotionally and cognitively. While these interactions can be somewhat taxing, they are also associated with pleasure, fulfillment, and gratification. The mental health of elementary school teachers has been receiving increasing attention in debates on education and work, reflecting the complexity and demands of teaching in different contexts (Moraes, 2025).

In fact, mental disorders rank among the major categories of health problems among elementary school teachers, with possible causes including the organization of teaching work—characterized by overload, institutional control, and low autonomy—as well as psychosocial factors such as role ambiguity and a lack of relational support (Araújo et al., 2019; Nwoko et al., 2023; Santos et al., 2012). Furthermore, factors such as the high number of courses taught and the presence of pre-existing medical conditions among teachers are significantly associated with the development of depression, which is a complex and multifaceted phenomenon resulting from the interplay between individual factors and the professional environment (Oliveira & Santos, 2021).

Depression is characterized by one or more major depressive episodes lasting at least two weeks, during which various symptoms manifest; the presence of depressed mood or loss of interest/pleasure is required (APA, 2013). The symptoms must cause clinically significant distress or impairment in social, occupational, or other areas of functioning and cannot be attributed to substances, medical conditions, or manic or hypomanic episodes.

In 2019, in Brazil, 10.2% of adults (aged 18 and older) reported having been diagnosed with depression, which corresponds to approximately 16.3 million people. This figure represents a 34% increase compared to 2013, when the prevalence was 7.6% (IBGE, 2019). In March 2022, the World Health Organization (WHO) released a global survey of mental disorders that indicated a 25% increase in the prevalence of anxiety and depression in the global population following the pandemic (WHO, 2022).

Depression is one of the leading causes of sick leave among teachers (Ferreira-Costa & Pedro-Silva, 2019). A study conducted by Tostes et al. (2018) in Brazil found depressive symptoms in 75.27% of elementary school teachers, with 26.72% of teachers on medical leave attributing this situation to individual psychological distress as well as to the inadequacy of institutional support and prevention mechanisms.

Furthermore, the persistence of these symptoms points to shortcomings in early detection and ongoing care for these professionals' emotional health, thus requiring the adoption of public policies that go beyond reactive measures such as medicalization or leave of absence and instead take the form of integrated, proactive strategies focused on promoting teachers' mental health (Guerrieri, 2025).

University faculty, in turn, are also at risk of developing symptoms of depression due to an excessive workload of administrative and academic tasks, unnecessary bureaucracy, a lack of adequate training, poor working conditions, intense institutional demands, and excessive individual accountability (Silva-Barbosa et al., 2022). Campos et al. (2020) demonstrated in their studies a significant impairment of mental health among higher education faculty in Brazil, with the main factors involved being feelings of burnout in their relationships with students and dissatisfaction with working at the institution.

However, there are many other factors that influence the occurrence of mental distress, such as excessive workloads, dissatisfaction with classroom conditions, demands to publish articles and participate in events, as well as sociodemographic factors (Freitas et al., 2021; Silva & Carvalho, 2016). According to Aguiar et al. (2024), the mental health of higher education faculty is directly linked to working conditions, and environments that prioritize results at the expense of these professionals' well-being exacerbate the situation.

In their study on higher education faculty, Fernandes et al. (2022) found a predominance of psychological symptoms, although physical ailments were also present.

During the COVID-19 pandemic, the global population was exposed to various potentially traumatic events, such as the death or risk of death of family members and friends, the possibility of serious illness or death, and the infection of close contacts (Bridgland et al., 2021). One possible consequence of this exposure is the development of Post-Traumatic Stress Disorder (PTSD) (Bridgland et al., 2021; Dutheil et al., 2021; Qiu et al., 2021). To meet the diagnostic criteria for PTSD, the individual must have been exposed to a potentially traumatic event, either by directly experiencing or witnessing the event, or indirectly, by learning that people close to them were affected by it (APA, 2013).

The main symptoms of PTSD include re-experiencing the trauma, persistent avoidance of stimuli associated with the event, negative changes in cognitions and mood, and hyperarousal. These manifestations must cause clinically significant distress and substantial impairment in social, occupational, and other important areas of life (APA, 2013). According to Lana et al. (2026), in a study of members of the academic community during the COVID-19

pandemic, 21.3% of participants met the criteria for a probable diagnosis of PTSD, with a prevalence of 13.45% among faculty members.

In the educational context, Mondragon et al. (2023) investigated the prevalence of PTSD among teachers at various levels during the pandemic; their results showed an overall prevalence of 11% among teachers. However, the authors note that the prevalence varied considerably across the studies analyzed, with one study—focused on university professors in China—reporting a rate of 24.5%. This situation was exacerbated by a series of stressors, such as the rapid and unprepared transition to online teaching, extended work hours, the constant fear of infection following the reopening of schools, and the emotional strain of having to provide support to students and families affected by the pandemic (Mondragon et al., 2023).

The pandemic forced educators at all levels of education to radically reorganize their work routines (Pinho et al., 2021). The physical barrier between professional and personal life ceased to exist, requiring rapid improvisation to adapt to remote teaching. This context—marked by mounting demands, technical difficulties, and a lack of adequate training in the use of digital platforms—was compounded by fear of infection, economic instability, and social distancing, creating a set of stressors with significant repercussions for the mental health of teachers and students (Cohen-Fraade & Donahue, 2021; Corrêa et al., 2022; Goldstein et al., 2023; Kirby et al., 2022; Lunardi et al., 2021; Pinho et al., 2021; Sahu, 2020; Wasil et al., 2021).

In this context, perceived loneliness or social isolation has emerged as a significant factor. Unlike being physically alone, loneliness refers to the subjective perception of emotional disconnection, characterized by the discrepancy between desired social relationships and those actually perceived (Cacioppo & Cacioppo, 2014; Cacioppo et al., 2015; Leigh-Hunt et al., 2017). This subjective experience of emotional isolation has been widely recognized as a vulnerability factor for the development and worsening of mental and physical health problems, including depressive symptoms, sleep disorders, cardiovascular changes, and an increased risk of morbidity and mortality (Hawkey & Cacioppo, 2010).

During the pandemic, loneliness took on even greater significance in teachers' daily lives, as—in addition to physical separation from the school community—there was a reduction in informal connections and everyday interactions that had previously served as important sources of social and emotional support. Compared to the pre-pandemic period, there has been a consistent increase in levels of loneliness across different population groups (Ernst et al., 2022), including among elementary school teachers (Karakose et al., 2022).

At the same time, optimism emerges as a significant protective factor, associated with greater resilience in the face of the adversities of daily school and academic life (Toledo & Campos, 2023). Fabella and Paz-Aler (2023), in their study conducted in the Philippines, found moderate levels of optimism among elementary school teachers, while a significant proportion reported low levels of depressive symptoms, suggesting that developing an optimistic outlook may act as a protective factor against symptoms of depression. Despite the challenges they face, educators turn to their teaching teams and support networks, which can strengthen resilience and promote greater optimism and life satisfaction (Nazar et al., 2022). Souza et al. (2021) state that optimism has positive effects on workers' lives, influencing physical and mental health as well as the work environment.

Although previous studies have investigated teachers' mental health, there are still few analyses that compare, within the same study, teachers in basic education and higher education while simultaneously considering indicators of psychological distress and factors associated with well-being. Given this gap, this study was guided by the following research question: Are there differences between teachers in basic education and teachers in higher education in Brazil regarding their mental health?

In light of this issue, the present study aimed to investigate different aspects of mental health among Brazilian teachers, including indicators of depression, PTSD, loneliness, and optimism, among professionals in basic education and higher education, in the context of the COVID-19 pandemic.

## **METHODOLOGY**

This project was approved by the research ethics committee of the Federal University of Fluminense (CAAE No. 52739721.0.0000.5243). Between March 10 and June 10, 2022, Brazilian teachers from elementary and higher education were invited to complete an online questionnaire. The questionnaire was shared on social media and sent via email and messaging apps.

It is worth noting that the World Health Organization declared, in May 2023, the end of the public health emergency of international concern, based on a reduction in deaths, increased vaccine-induced immunity, and the stabilization of health systems (Laboissière, 2023). In the Brazilian context, however, the Brazilian Ministry of Health ended the Public Health Emergency of National Importance (ESPIN) on May 22, 2022 (Brasil, 2022). During the data

collection period, between March and June 2022, the first doses of COVID-19 vaccines had already been administered, and educational institutions—including schools and most universities—had already resumed in-person activities. Nevertheless, this period coincided with the ongoing emergency scenario in the country.

The inclusion criteria for participation in the study were: being at least 18 years of age and being a teacher in Brazilian public and/or private elementary, middle, or high schools or higher education institutions. We considered errors in completing the questionnaire, refusal to sign the consent form, and duplicate responses as exclusion criteria.

The choice of instruments was guided by the need to measure distinct dimensions of teachers' mental health, combining indicators of psychological distress—such as depression and PTSD symptoms—with psychosocial dimensions associated with well-being, such as loneliness and optimism. The questionnaire included a sociodemographic section, followed by psychometric scales validated for the Brazilian population. Specifically, Likert-type scales were used, in which participants indicate the frequency or intensity of certain experiences based on graded response options. This format allows for assigning scores to items and calculating total scores for each dimension assessed. The depression and PTSD scales were interpreted in light of the criteria described in the Diagnostic and Statistical Manual of Mental Disorders, DSM-5 (APA, 2013). The Patient Health Questionnaire-9 (PHQ-9) psychometric scale measures symptom severity, with a total score ranging from 0 to 27 points, and each item's score ranging from zero (never) to three points (almost every day). The PHQ-9 scale was validated in a sample of the Brazilian population by Santos et al. (2013), in which participants with a score of  $\geq 9$  were considered to have a probable diagnosis of depression. To measure symptoms of Posttraumatic Stress Disorder (PTSD), we used the Posttraumatic Stress Disorder Checklist 5 – PCL-5 (Weathers et al., 2013), consisting of 20 items, each scored on a scale from 0 (not at all) to 4 (extremely), with a minimum score of 0 and a maximum of 80. The scale includes questions that assess the severity of the four symptom clusters of PTSD (re-experiencing, avoidance, mood and cognitive changes, and hyperarousal). Cases were considered probable PTSD if they scored at or above the cutoff score of 36, established for the Brazilian population (Pereira-Lima et al., 2019). In the present study, symptom scores and the prevalence of PTSD were calculated by considering all traumatic events reported during the pandemic, regardless of whether they met the diagnostic criteria defined by the DSM-5.

Perceived loneliness was assessed using the Three-Item Loneliness Scale (TILS), proposed by Hughes et al. (2004), a brief instrument that measures feelings of perceived social

isolation, lack of companionship, and exclusion. Optimism was assessed using the Life Orientation Test—Revised (LOT-R), developed by Carver and Scheier (2003), with a Portuguese version described by Cruz and Gomes (2007). The LOT-R measures generalized positive expectations regarding the future and is used as an indicator of a psychological resource associated with coping with adverse situations.

For statistical analysis, continuous variables were presented using the median and the first and third quartiles, given the non-normal distribution of the data. Comparisons between elementary and secondary school teachers and higher education faculty were performed using the Mann-Whitney test, a nonparametric test indicated for comparing two independent groups when the assumptions of normality are not met. All hypothesis tests considered a p-value < 0.05 to be statistically significant. The analyses were performed using Sigmaplot 14.0 software.

The original sample consisted of 1,711 teachers from basic or higher education in the Brazilian public and/or private school systems. A detailed description of the sample's sociodemographic characteristics is presented in Table 1.

**Table 1.**  
*Sociodemographic characteristics of the sample (n = 1711)*

Variable	Categories	Basic Education (n)	Higher Education (n)
Sector	-	273	1438
Gender	Women	210	869
	Men	61	558
	Non-binary	2	6
	Prefer not to say	0	5
Race or Color	White	164	1053
	Black	27	42
	Brown	69	265
	Asian	4	11
	Indigenous	1	3
	Prefer not to say	8	64
Parenting	With children	161	955
	Without children	112	483
Age	18–24 years old	8	16
	25–34 years old	50	107
	35–44 years old	42	484
	45–54 years old	66	415
	55–64 years old	33	326
	65 years or older	02	90

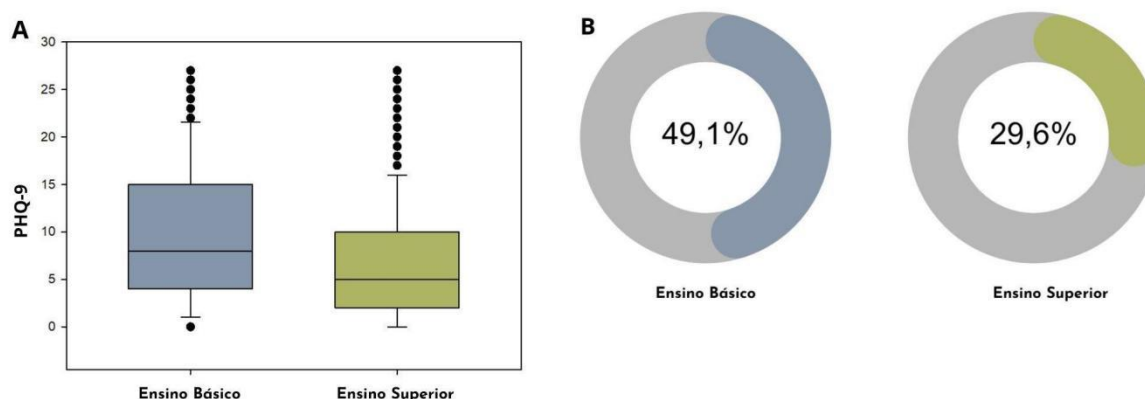
*Note.* The Authors.

## RESULTS AND DISCUSSION

In this study, we evaluated various parameters related to the mental health of Brazilian teachers in elementary and higher education. Overall, elementary school teachers exhibited poorer mental health compared to higher education teachers.

Upon analyzing the data related to depression (Figure 1A), we observed a significant difference ( $p < 0.01$ ) when comparing the distribution of scores on the PHQ-9 scale, with elementary and secondary school teachers scoring higher (Me = 8.00, Q1 = 4.00, Q3 = 15.00) compared to higher education teachers (Me = 5.00, Q1 = 2.00, Q3 = 10.00). In addition, a higher proportion of elementary school teachers scored above the cutoff point (49.1%), indicating a higher probability of a depression diagnosis compared to higher education teachers (29.6%) (Figure 1B).

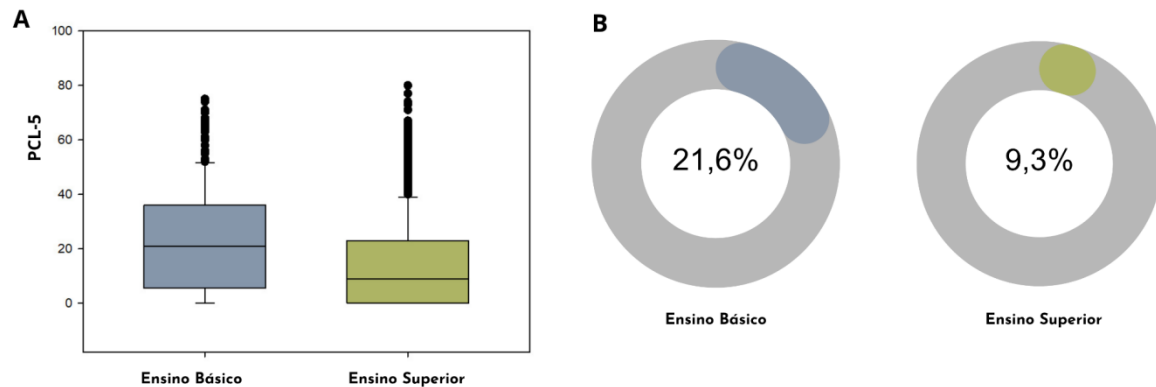
**Figure 1.**  
Depression scale (PHQ-9)



*Note.* The authors. Depression among Brazilian teachers. A – Distribution of PHQ-9 scores among basic education and higher education teachers. B – Percentage of basic education and higher education teachers with a high probability of a depression diagnosis (PHQ-9 score  $\geq 9$ ).

With regard to PTSD (Figure 2A), we observed a significant difference ( $p < 0.001$ ) when comparing the distribution of scores on the PCL-5 scale, where elementary school teachers had higher scores (Me = 21.00, Q1 = 5.50, Q3 = 36.00) compared to higher education teachers (Me = 9.00, Q1 = 0, Q3 = 23.00). In addition, we observed a higher percentage of elementary school teachers (21.6%) with scores above the cutoff point for a possible PTSD diagnosis (Figure 2B).

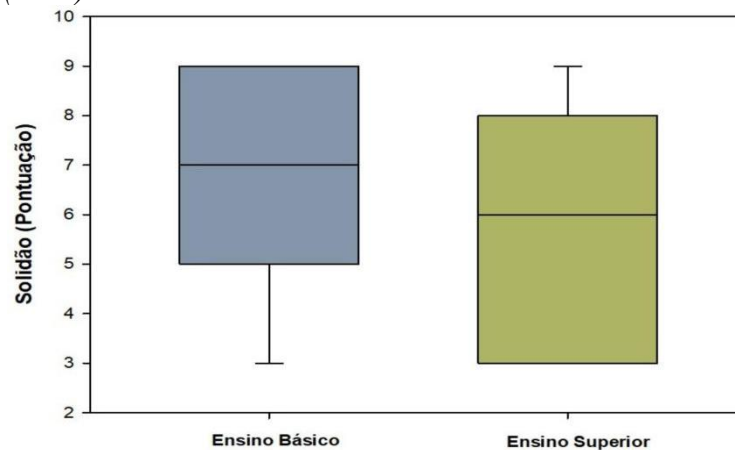
**Figure 2.**  
*PTSD scale (PCL-5)*



*Note.* The authors. Post-Traumatic Stress Disorder among Brazilian teachers. A – Distribution of PCL-5 scores among basic education and higher education teachers. B – Percentage of elementary and higher education teachers with a high probability of a PTSD diagnosis (score  $\geq 36$ ).

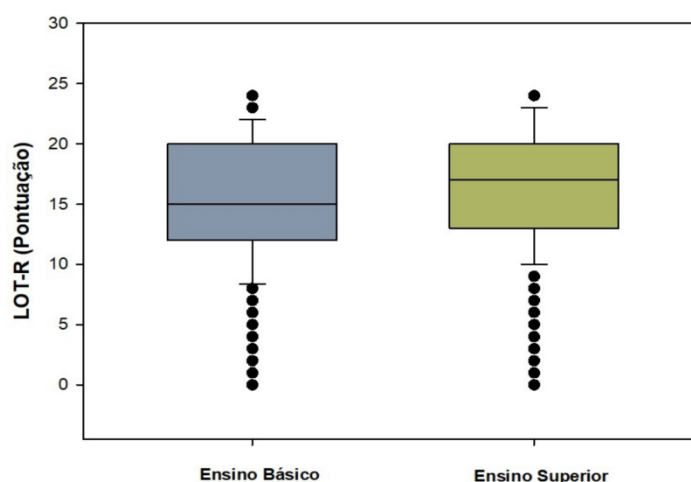
With regard to loneliness (Figure 3), we observed a significant difference ( $p = 0.001$ ) between the medians of elementary school teachers (Me = 7, Q1 = 5.00, Q3 = 9.00) and higher education teachers (Me = 6, Q1 = 3.00, Q3 = 8.00), with elementary school teachers scoring higher.

**Figure 3.**  
*Loneliness scale (TILS)*



*Note.* The authors. Loneliness among Brazilian teachers. Distribution of scores on the loneliness scale for basic education and higher education teachers.

With regard to optimism (Figure 4), we observed a significant difference ( $p = 0.001$ ) between the scores of elementary school teachers (Me = 15, Q1 = 12.00, Q3 = 20.00) and higher education teachers (Me = 17, Q1 = 13.00, Q3 = 20.00), with higher education teachers scoring higher.

**Figure 4.***Optimism scale (LOT-R)*

*Note.* The authors. Optimism among Brazilian teachers. Distribution of scores on the Optimism Scale among teachers in basic education and higher education.

Our study highlights the complexity of teachers' mental health situation, emphasizing the significant differences between elementary school teachers and higher education faculty. The results show that elementary school teachers experience greater mental distress and are more likely to be diagnosed with depression than higher education faculty. Tostes et al. (2018), in their study of elementary school teachers in the Paraná state school system, identified extremely high levels of mental distress (including symptoms of depression, anxiety, and minor psychiatric disorders). This high prevalence highlights depression as the leading cause of sick leave among teachers, pointing to the severity of the psychological impact on this group of educators. However, it is worth noting that higher education faculty members also exhibited concerning levels of depression risk in our study.

Campos et al. (2020) conducted a study with faculty members at a public university in Bahia, revealing significant impairment in the mental health of these professionals, with approximately 29.9% exhibiting signs suggestive of common mental disorders, such as anxiety and depression. Batista et al. (2015) analyzed 254 medical records of faculty members who underwent medical evaluations at a higher education institution in João Pessoa (PB) and found that depression accounted for 52% of leaves of absence due to mental health issues. Freitas et al. (2021) found that approximately 50% of higher education faculty members exhibited depressive symptoms, with 42% having mild depression and 8% having moderate to severe depression. Taken together, these findings underscore the extent to which university professors

are also exposed to high levels of psychological distress, in contrast to other segments of the population.

This study also identified significant prevalences of probable PTSD diagnoses among teachers in basic education (21.6%) and higher education (9.3%), indicating that the teaching profession as a whole is exposed to factors that may contribute to the development of PTSD. The prevalence of 21.6% among elementary and secondary school teachers considerably exceeds the overall prevalence of PTSD of 11% among teachers reported in the literature, approaching the highest prevalence found (24.5%) among university professors in China during the COVID-19 pandemic (Mondragon et al., 2023).

The COVID-19 pandemic constituted a prolonged stressor that involved not only the direct threat of the disease but also a set of secondary stressors that may have acted as potential vulnerability factors for PTSD symptoms, such as social isolation, disruption of routines, intense exposure to alarming news, economic difficulties, and, in some cases, hospitalization (Bridgland et al., 2021; Villatoro et al., 2022). In Brazil, this scenario was exacerbated by the collapse of the healthcare system, deep-seated social inequalities (Fiocruz, 2021; The Lancet, 2020), and intense political instability, with the spread of misinformation and conflicting government messages that undermined adherence to protective measures (Camacho et al., 2024). In the educational setting, the emergency transition to remote learning critically exposed inequalities in digital infrastructure and required rapid adaptation without technological training (Gusso et al., 2020), especially among teachers in more direct contact with vulnerable students.

In this context, previous studies had already revealed high rates of probable PTSD among university professionals (Goldstein et al., 2023; Lana et al., 2026; Mallhi et al., 2023), and our findings expand upon this literature by indicating that the confluence of these stressors may have had an even more intense impact on elementary and secondary school teachers, possibly making them more susceptible to developing or worsening PTSD symptoms. A relevant finding in the context of education in Brazil is the direct and recurrent exposure of elementary and secondary school teachers to violence in the school environment (Facci, 2019), where 12.5% of these teachers experience intimidation or verbal abuse on a weekly basis—a rate that ranks the country first among the 34 countries surveyed (OECD, 2014). This violence manifests itself through verbal aggression, intimidation, threats, and physical aggression (Lima et al., 2020).

In higher education, aggression occurs primarily in the form of bullying and abuse of power, often perpetrated by peers and superiors (Beggiato, 2022). This environment is

exacerbated by relentless pressure for productivity—known as ‘academic productivism’—which fosters competition and can undermine working relationships (Pinho et al., 2023). Our findings indicate that faculty members, in different contexts, face conditions that expose them to risks of interpersonal trauma, compounded by everyday violence, the lingering effects of the pandemic, and the challenges of returning to in-person activities—factors that may help explain the high prevalence of PTSD observed in this group.

With regard to loneliness, the pandemic played a crucial role. Martinez et al. (2021) state that the lack of institutional support, combined with teachers’ individual responsibility for the success of remote learning, created an environment of emotional overload and isolation, with teachers reporting feelings of distress, anxiety, and exhaustion. Einav et al. (2024), in a study of 248 elementary school teachers in Israel, identified perceived social isolation as a significant risk factor for the worsening of psychological distress among teachers, especially when associated with symptoms of depression. The data from our study show that elementary school teachers are more susceptible to feelings of loneliness compared to higher education faculty, highlighting the importance of considering subjective and relational dimensions when addressing the adversities experienced in the teaching profession. According to Ozamiz-Etxebarria et al. (2021), reducing the psychological impacts of the pandemic on teachers is essential for preventing stress, anxiety, and depression, ensuring better working conditions, preserving teachers’ mental health, and promoting positive effects on the quality of teaching and student performance.

With regard to optimism, our findings indicated that higher education faculty members exhibit significantly higher levels of optimism than those in basic education. This difference may reflect a more positive perception of the future and greater coping ability among higher education faculty members, in contrast to the sense of helplessness often associated with the more precarious conditions and emotional overload experienced by basic education teachers. Previous studies help contextualize this result. In the Philippines, Fabella and Paz-Aler (2023) found that the majority of elementary and secondary school teachers reported moderate optimism (67.74%), while only 32.26% demonstrated high optimism, suggesting a trend similar to that observed in the present study. In Brazil, Neves (2017) identified a positive correlation between academic optimism and self-efficacy among faculty members at the Federal Institute of the Pernambuco Sertão, suggesting that perceptions of professional competence may directly influence the level of optimism. Toledo and Campos (2023), on the other hand, observed that university faculty members maintained average levels of optimism even in the face of the

challenges posed by the pandemic, which reinforces this group's resilience in contexts of instability. Overall, the results suggest that optimism can act as an important psychological resource in mediating the impacts of teaching work, being especially relevant among professionals exposed to contexts of greater vulnerability.

## **FINAL CONSIDERATIONS**

This study assessed the mental health of teachers in basic education and higher education, focusing on symptoms of depression, PTSD, loneliness, and optimism. The results indicate greater vulnerability among elementary and secondary school teachers, who reported higher prevalences of depressive symptoms, PTSD traits, and loneliness, as well as lower levels of optimism. Although the most critical phase of the pandemic had already passed by the time data were collected, the emotional effects were still noticeable, especially among those exposed to more precarious working conditions. These findings underscore the importance of policies that promote teachers' mental health in a targeted and ongoing manner. In particular, it is urgent to ensure adequate conditions for professional practice in basic education, recognizing that the well-being of teachers is also a pillar of educational quality and social development.

## REFERENCES

- Aguiar, G. A., Santos, F. D. V., Mota, F. L., Schoffen, A. C. Z., Silva, A. C., Valentim, R. E. O., Quadros, A. P., Manfrenatti, R. R. S., Santos, F. F., & Koscheck, A. (2024). Saúde mental dos professores em contextos de precarização: Perspectivas sobre a educação contemporânea. *Políticas Públicas & Cidades*, 13(2), e1320. <https://doi.org/10.23900/2359-1552v13n2-317-2024>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). American Psychiatric Publishing. <https://doi.org/10.1176/appi.books.9780890425596>
- Araújo, T. M., Pinho, P. S., & Masson, M. L. V. (2019). Trabalho e saúde de professoras e professores no Brasil: Reflexões sobre trajetórias das investigações, avanços e desafios. *Cadernos de Saúde Pública*, 35(Suppl. 1), e00087318. <https://doi.org/10.1590/0102-311X00087318>
- Batista, J. B. V., Carlotto, M. S., Oliveira, M. N., Zaccara, A. A. L., Barros, E. O., & Duarte, M. C. S. (2015). Transtornos mentais que mais acometem professores universitários: Um estudo em um serviço de perícia médica. *Revista de Pesquisa: Cuidado é Fundamental Online*, 7(5), 119–125. <https://doi.org/10.9789/2175-5361.2015.v7i5.119-125>
- Beggiato, S., Hackenberg, C., Oliveira, V., & Vagetti, G. (2022). Violência no contexto do ensino superior: Uma revisão de escopo. *InCantare*, 16(1), 22–40. <https://doi.org/10.33871/2317417X.2022.16.1.8174>
- Brasil. (2022, April 22). *Ministério da Saúde declara fim da Emergência em Saúde Pública de Importância Nacional pela COVID-19*. Ministério da Saúde. <https://www.gov.br/saude/pt-br/assuntos/noticias/2022/abril/ministerio-da-saude-declara-fim-da-emergencia-em-saude-publica-de-importancia-nacional-pela-COVID-19>
- Bridgland, V. M. E., Moeck, E. K., Green, D. M., Swain, T. L., Nayda, D. M., Matson, L. A., Hutchison, N. P., & Takarangi, M. K. T. (2021). Why the COVID-19 pandemic is a traumatic stressor. *PLOS ONE*, 16(1), e0240146. <https://doi.org/10.1371/journal.pone.0240146>
- Cacioppo, J. T., & Cacioppo, S. (2014). Social relationships and health: The toxic effects of perceived social isolation. *Social and Personality Psychology Compass*, 8(2), 58–72. <https://doi.org/10.1111/spc3.12087>
- Cacioppo, S., Grippo, A. J., London, S., Goossens, L., & Cacioppo, J. T. (2015). Loneliness: Clinical import and interventions. *Perspectives on Psychological Science*, 10(2), 238–249. <https://doi.org/10.1177/1745691615570616>
- Camacho, K. G., Moore, D. C. B. C., Junqueira-Marinho, M. F., Gomes Júnior, S. C., Reis, A. T., & Abramov, D. M. (2024). Lockdown during the COVID-19 pandemic: Lessons from a polarized scenario in Brazil. *Frontiers in Psychology*, 15, 1310594. <https://doi.org/10.3389/fpsyg.2024.1310594>

- Campos, T. C., Vêras, R. M., & Araújo, T. M. (2020). Transtornos mentais comuns em docentes do ensino superior: Evidências de aspectos sociodemográficos e do trabalho. *Avaliação*, 25(3), 745–768. <https://doi.org/10.1590/S1414-40772020000300012>
- Carver, C. S., & Scheier, M. (2003). Optimism. In S. J. Lopez & C. R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 75–89). American Psychological Association. <https://doi.org/10.1037/10612-005>
- Cohen-Fraade, S., & Donahue, M. (2021). The impact of COVID-19 on teachers' mental health. *Journal of Multicultural Education*, 16(1), 18–29. <https://doi.org/10.1108/JME-08-2021-0131>
- Corrêa, R. P., Castro, H. C., Ferreira, R. R., Araújo-Jorge, T., & Stephens, P. R. S. (2022). The perceptions of Brazilian postgraduate students about the impact of COVID-19 on their well-being and academic performance. *International Journal of Educational Research Open*, 3, 100185. <https://doi.org/10.1016/j.ijedro.2022.100185>
- Cruz, J. F., & Gomes, A. R. (2007). *Teste de Orientação de Vida (TOV-R/LOTR)* [Relatório técnico não publicado]. Escola de Psicologia, Universidade do Minho. <https://hdl.handle.net/1822/92469>
- Dutheil, F., Mondillon, L., & Navel, V. (2021). PTSD as the second tsunami of the SARS-CoV-2 pandemic. *Psychological Medicine*, 51(10), 1773–1774. <https://doi.org/10.1017/S003329172000133X>
- Einav, M., Confino, D., Geva, N., & Margalit, M. (2024). Teachers' burnout: The role of social support, gratitude, hope, entitlement and loneliness. *International Journal of Applied Positive Psychology*, 9, 827–849. <https://doi.org/10.1007/s41042-024-00154-5>
- Ernst, M., Niederer, D., Werner, A. M., Czaja, S. J., Mikton, C., Ong, A. D., Rosen, T., Brähler, E., & Beutel, M. E. (2022). Loneliness before and during the COVID-19 pandemic: A systematic review with meta-analysis. *American Psychologist*, 77(5), 660–677. <https://doi.org/10.1037/amp0001005>
- Fabella, F. E., & Paz-Aler, R. A. D. (2023). Optimism as a mitigator of burnout: The relationship between optimism and burnout among selected teachers. *International Research Journal of Modernization in Engineering Technology and Science*, 5(2), 414–420. <https://doi.org/10.56726/irjmets33431>
- Facci, M. G. D. (2019). O adoecimento do professor frente à violência na escola. *Fractal: Revista de Psicologia*, 31(2), 130–142. <https://doi.org/10.22409/1984-0292/v31i2/5647>
- Fernandes, A. P. A., Marinho, P. R. R., & Schmidt, M. L. G. (2022). Saúde mental dos professores de ensino superior: Uma revisão da literatura. *Cocar*, 16(34), 1–24.
- Ferreira-Costa, R. Q., & Pedro-Silva, N. (2019). Níveis de ansiedade e depressão entre professores do ensino infantil e fundamental. *Pro-Posições*, 30, e20160143. <https://doi.org/10.1590/1980-6248-2016-0143>

- Fiocruz. (2021). *Pandemia: Três momentos críticos para a gestão da saúde pública no Brasil em um ano*. <https://www.epsvj.fiocruz.br/podcast/pandemia-tres-momentos-criticos-para-a-gestao-da-saude-publica-no-brasil-em-um-ano>
- Freitas, R. F., Ramos, D. S., Freitas, T. F., Souza, G. R., Pereira, É. J., & Lessa, A. C. (2021). Prevalência e fatores associados aos sintomas de depressão, ansiedade e estresse em professores universitários durante a pandemia da COVID-19. *Jornal Brasileiro de Psiquiatria*, 70(4), 283–292. <https://doi.org/10.1590/0047-2085000000348>
- Goldstein, E., Topitzes, J., Brown, R. L., & Jussel, A. B. (2023). Mental health among university employees during the COVID-19 pandemic: The role of previous life trauma and current posttraumatic stress symptoms. *Psychological Trauma: Theory, Research, Practice, and Policy*, 15(3), 536–545. <https://doi.org/10.1037/tra0001332>
- Guerrieri, A. B. (2025). Estresse ocupacional em professores e intervenções da enfermagem na promoção do bem-estar docente. *International Integralize Scientific*, 5(47).
- Gusso, H. L., Archer, A. B., Luiz, F. B., Sáhão, F. T., Luca, G. G., Henklain, M. H. O., Panosso, M. G., Kienen, N., Beltramello, O., & Gonçalves, V. M. (2020). Ensino superior em tempos de pandemia: Diretrizes à gestão universitária. *Educação & Sociedade*, 41, e238957. <https://doi.org/10.1590/ES.238957>
- Hawkey, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, 40(2), 218–227. <https://doi.org/10.1007/s12160-010-9210-8>
- Hughes, M. E., Waite, L. J., Hawkey, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging*, 26(6), 655–672. <https://doi.org/10.1177/0164027504268574>
- Instituto Brasileiro de Geografia e Estatística. (2019). *Pesquisa nacional de saúde 2019: Percepção do estado de saúde, estilos de vida, doenças crônicas e saúde bucal*. <https://www.ibge.gov.br/estatisticas/sociais/saude/9160-pesquisa-nacional-de-saude.html?edicao=29270&t=resultados>
- Karakose, T., Ozdemir, T. Y., Papadakis, S., Yirci, R., Ozkayran, S. E., & Polat, H. (2022). Investigating the relationships between COVID-19 quality of life, loneliness, happiness, and internet addiction among K–12 teachers and school administrators: A structural equation modeling approach. *International Journal of Environmental Research and Public Health*, 19(3), 1052. <https://doi.org/10.3390/ijerph19031052>
- Kirby, L. A., Zolkoski, S. M., O'Brien, K. H., Mathew, J., Kennedy, B. R., & Sass, S. (2022). Examining staff and faculty work–life balance and well-being using the dual continua model of mental health during COVID-19. *Journal of Happiness and Health*, 3(1), 34–48. <https://doi.org/10.47602/johah.v3i1.31>
- Laboissière, P. (2023, May 5). *OMS declara fim da emergência em saúde por COVID-19*. Agência Brasil. <https://agenciabrasil.ebc.com.br/saude/noticia/2023-05/oms-declara-fim-da-emergencia-em-saude-por-covid-19>

- Lana, R. M. S., Nudelman, M. F., Alves, S. R., Fernandes Junior, O., Gonçalves, R. M., Machado, A. V., Martins, R. M., Portugal, L. C. L., David, I. P. A., Berger, W., Erthal, F. C. S., Volchan, E., Oliveira, L., & Pereira, M. (2026). Vulnerability and protective factors for PTSD in the academic community during the pandemic. *Psicologia: Reflexão e Crítica*, 39, 1. <https://doi.org/10.1186/s41155-025-00372-z>
- Leigh-Hunt, N., Bagguley, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., & Caan, W. (2017). An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health*, 152, 157–171. <https://doi.org/10.1016/j.puhe.2017.07.035>
- Lima, P. V. C., Rodrigues, M. T. P., Mascarenhas, M. D. M., Gomes, K. R. O., Miranda, C. E. S., & Frota, K. M. G. (2020). Prevalência e fatores associados à violência contra professores em escolas do ensino médio em Teresina, Piauí, 2016: Estudo transversal. *Epidemiologia e Serviços de Saúde*, 29(1), e2019159. <https://doi.org/10.5123/S1679-49742020000100022>
- Lunardi, N. M. S., Nascimento, A., Sousa, J. B., Silva, N. R. M., Pereira, T. G. N., & Fernandes, J. S. G. (2021). Aulas remotas durante a pandemia: Dificuldades e estratégias utilizadas por pais. *Educação & Realidade*, 46(2), e106662. <https://doi.org/10.1590/2175-6236106662>
- Mallhi, T. H., Khan, N. A., Siddique, A., Salman, M., Bukhari, S. N. A., Butt, M. H., Khan, F. U., Khalid, M., Mustafa, Z. U., Tanveer, N., Ahmad, N., Ahmad, M. M., Rahman, H. U., & Khan, Y. H. (2023). Mental health and coping strategies among university staff during the COVID-19 pandemic: A cross-sectional analysis from Saudi Arabia. *Sustainability*, 15(11), 8545. <https://doi.org/10.3390/su15118545>
- Martinez, F. W. M., Silva, A. M., & Costa, A. C. O. (2021). Precariedades e incertezas: Trabalho docente do professor iniciante em tempos de COVID-19. *Linhas Críticas*, 27, e39036. <https://doi.org/10.26512/lc27202139036>
- Mondragon, N. I., Fernandez, I., Ozamiz-Etxebarria, N., Villagrasa, B., & Santabárbara, J. (2023). PTSD (posttraumatic stress disorder) in teachers: A mini meta-analysis during COVID-19. *International Journal of Environmental Research and Public Health*, 20(3), 1802. <https://doi.org/10.3390/ijerph20031802>
- Moraes, A. V. (2025). A saúde mental dos professores da educação básica brasileira e seus desafios. *International Integralize Scientific*, 5(49).
- Nazar, T. C. G., Christan, P., Freitas, L., & Pegoraro, F. (2022). Um olhar sobre a saúde mental de educadores na rede pública de ensino. *Iniciação Científica Cesumar*, 24(2), 1–19. <https://doi.org/10.17765/2176-9192.2022v24n2e11309>
- Neves, J. M. (2017). *Relações entre autoeficácia docente e otimismo acadêmico: Estudos com professores do IF Sertão-PE* (Dissertação de mestrado, Universidade Federal da Bahia). Repositório Institucional da Universidade Federal da Bahia. <https://repositorio.ufba.br/handle/ri/25705>
- Nwoko, J. C., Emeto, T. I., Malau-Aduli, A. E. O., & Malau-Aduli, B. S. (2023). A systematic review of the factors that influence teachers' occupational wellbeing. *International*

- Journal of Environmental Research and Public Health*, 20(12), 6070. <https://doi.org/10.3390/ijerph20126070>
- OECD. (2014). *TALIS 2013 results: An international perspective on teaching and learning*. OECD Publishing. <https://doi.org/10.1787/9789264196261-en>
- Oliveira, E. C., & Santos, G. T. S. (2021). Síndrome de burnout em docentes da educação básica. *Revista Ibero-Americana de Humanidades, Ciências e Educação*, 7(9), 1069–1077. <https://doi.org/10.51891/rease.v7i9.2311>
- Ozamiz-Etxebarria, N., Idoiaga Mondragon, N., Bueno-Notivol, J., Pérez-Moreno, M., & Santabárbara, J. (2021). Prevalence of anxiety, depression, and stress among teachers during the COVID-19 pandemic: A rapid systematic review with meta-analysis. *Brain Sciences*, 11(9), 1172. <https://doi.org/10.3390/brainsci11091172>
- Pereira-Lima, K., Loureiro, S. R., Bolsoni, L. M., Apolinario da Silva, T. D., & Osório, F. L. (2019). Psychometric properties and diagnostic utility of a Brazilian version of the PCL-5: Complete and abbreviated versions. *European Journal of Psychotraumatology*, 10(1), 1581020. <https://doi.org/10.1080/20008198.2019.1581020>
- Pinho, P. S., Freitas, A. M. C., Cardoso, M. C. B., Silva, J. S., Reis, L. F., Muniz, C. F. D., & Araújo, T. M. (2021). Trabalho remoto docente e saúde: Repercussões das novas exigências em razão da pandemia da COVID-19. *Trabalho, Educação e Saúde*, 19, e00325157. <https://doi.org/10.1590/1981-7746-sol00325>
- Pinho, P. S., Freitas, A. M. C., Patrão, A. L., & Aquino, E. M. L. (2023). Estresse ocupacional, saúde mental e gênero entre docentes do ensino superior: Revisão integrativa. *Saúde e Sociedade*, 32(4), e210604pt. <https://doi.org/10.1590/S0104-12902023210604pt>
- Qiu, D., Li, Y., Li, L., He, J., Ouyang, F., & Xiao, S. (2021). Prevalence of post-traumatic stress symptoms among people influenced by coronavirus disease 2019 outbreak: A meta-analysis. *European Psychiatry*, 64(1), e30. <https://doi.org/10.1192/j.eurpsy.2021.24>
- Sahu, P. K. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus*, 12(4), e7541. <https://doi.org/10.7759/cureus.7541>
- Santos, I. S., Tavares, B. F., Munhoz, T. N., Almeida, L. S. P., Silva, N. T. B., Tams, B. D., Patella, A. M., & Matijasevich, A. (2013). Sensibilidade e especificidade do Patient Health Questionnaire-9 (PHQ-9) entre adultos da população geral. *Cadernos de Saúde Pública*, 29(8), 1533–1543. <https://doi.org/10.1590/0102-311X00144612>
- Santos, M. N., Marques, A. C., & Nunes, I. J. (2012). Condições de saúde e trabalho de professores no ensino básico no Brasil: Uma revisão. *EFDeportes.com, Revista Digital*, 15(166).
- Silva, T. R., & Carvalho, E. A. (2016). Depressão em professores universitários: Uma revisão da literatura brasileira. *Uningá Review*, 28(1), 113–117.
- Silva-Barbosa, C. E., Lima, E. P. M., Costa, Y. X. A., Lima, V. F. S., Carvalho, S. T. A., & Rocha, A. S. (2022). Professional exhaustion in teaching: Burnout syndrome in

- university teachers during the COVID-19 pandemic. *Research, Society and Development*, 11(8), e44111831385. <https://doi.org/10.33448/rsd-v11i8.31385>
- Souza, J. M., Silva, N., & Tolfo, S. (2021). Otimismo no trabalho: Uma revisão integrativa sobre a produção científica brasileira e internacional. *Psicología desde el Caribe*, 38(2), 256–281. <https://doi.org/10.14482/psdc.38.2.158.701>
- The Lancet*. (2020). COVID-19 in Brazil: "So what?" *The Lancet*, 395(10235), 1461. [https://doi.org/10.1016/S0140-6736\(20\)31095-3](https://doi.org/10.1016/S0140-6736(20)31095-3)
- Toledo, L. C., & Campos, C. R. (2023). Síndrome de burnout, satisfação de vida, autoestima e otimismo em docentes universitários durante o ensino remoto. *Educação em Revista*, 39, e39136. <https://doi.org/10.1590/0102-469839136>
- Tostes, M. V., Albuquerque, G. S. C., Silva, M. J. S., & Petterle, R. (2018). Sofrimento mental de professores do ensino público. *Saúde em Debate*, 42(116), 87–99. <https://doi.org/10.1590/0103-1104201811607>
- Villatoro, A. P., Wagner, K. M., Salgado de Snyder, V. N., Garcia, D., Walsdorf, A. A., & Valdez, C. R. (2022). Economic and social consequences of COVID-19 and mental health burden among Latinx young adults during the 2020 pandemic. *Journal of Latina/o Psychology*, 10(1), 25–38. <https://doi.org/10.1037/lat0000195>
- Wasil, A. R., Franzen, R. E., Gillespie, S., Steinberg, J. S., Malhotra, T., & DeRubeis, R. J. (2021). Commonly reported problems and coping strategies during the COVID-19 crisis: A survey of graduate and professional students. *Frontiers in Psychology*, 12, 598557. <https://doi.org/10.3389/fpsyg.2021.598557>
- Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). *The PTSD Checklist for DSM-5 (PCL-5): Standard* [Measurement instrument]. National Center for PTSD. <https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>
- World Health Organization. (2022). *World mental health report: Transforming mental health for all*. <https://sbponline.org.br/arquivos/9789240049338-eng.pdf>

### ***CRedit Author Statement***

---

- **Acknowledgments:** We would like to thank all the faculty members who participated in the study.
  - **Funding:** This work received financial support from the National Council for Scientific and Technological Development (CNPq), the Coordination for the Improvement of Higher Education Personnel (CAPES)—CAPES/PRINT Finance Code 001—and the Rio de Janeiro State Research Support Foundation (FAPERJ).
  - **Conflicts of interest:** There are no conflicts of interest.
  - **Ethical approval:** Research Ethics Committee – UFF (CAAE No. 52739721.0.0000.5243).
  - **Data and materials availability:** The data used in this study are available upon request.
  - **Authors' contributions:** Karen Christina Rodrigues dos Santos contributed to the conceptualization, methodological design, data collection and analysis, drafting of the original manuscript, and revision of the manuscript. Letícia de Oliveira contributed to the conceptualization, securing funding, project management, supervision, drafting of the original manuscript, and manuscript revision. Rachel Silva Machado Lana participated in data collection and analysis and manuscript revision. Rony Magalhães Martins participated in data collection and analysis and manuscript revision. Arthur V. Machado participated in data collection and analysis and manuscript revision. Sarah Rocha Alves participated in data collection and analysis and manuscript revision. Marta Nudelman participated in data collection and manuscript revision. Mirtes Pereira contributed to fundraising, project administration, and manuscript revision. Fernanda Stanisçuaski participated in conceptualization, methodological design, supervision, drafting of the original manuscript, and manuscript revision.
- 

**Processing and editing: Editora Ibero-Americana de Educação**  
Proofreading, formatting, normalization and Translation

