



## ORIGINALES

### Stress and depression in teachers from a public education institution

Estresse e depressão em docentes de uma instituição pública de ensino

Estrés y depresión en docentes de una institución pública de enseñanza

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#### ABSTRACT

**Objectives:** To analyze the presence of stress and signs indicative of depression in teachers of a public educational institution.

**Materials and Methods:** An analytical study was conducted with 163 teachers from a public educational institution. The Perceived Stress Scale-EEP and Beck-EDB Depression Inventory were applied.

**Results:** Of the 163 participants, 108 (66.3%) were males, 64 (39.3%) were between 30 and 39 years of age, 79 (48.5%) had a wage income of more than 15 wages minimum, 80 (49.1%) reported brown color. The majority had a master's degree, 84 (51.5%). Minimal levels of stress were identified in men, 73 (67.0%) and 34 (63.0%) in women. 87 (79.8%) women and 35 (64.8%) men had minimal depression. There was a significant difference in the stress and depression scores between the sexes. There was a moderate positive correlation between the scales.

**Conclusion:** Teachers with minimal and light levels are subject to stress and depression, deserving attention from the institutions.

**Key words:** Psychological Stress; Depression; Teachers.

#### RESUMO

**Objetivos:** Analisar a presença de estresse e sinais indicativos de depressão em docentes de uma instituição pública de ensino.

**Material e Métodos:** Estudo analítico, realizado com 163 docentes de uma instituição pública de ensino. Aplicou-se Escala de Estresse Percebido-EEP e Inventário de Depressão de Beck-EDB.

**Resultados:** Dos 163 participantes, 108 (66,3%) eram do gênero masculino, 64 (39,3%) com faixa etária de 30 a 39 anos, 79 (48,5%) tinham uma renda salarial de mais de 15 salários mínimos, 80 (49,1%) referiram cor parda. A maioria apresentou título de mestre, 84 (51,5%). Identificaram-se níveis mínimos de estresse em homens, 73 (67,0%) e 34 (63,0%) em mulheres. 87 (79,8%) mulheres e 35

(64,8%) homens apresentaram nível de depressão mínima. Houve diferença significativa nos escores de estresse e depressão entre os sexos. Observou-se uma correlação positiva moderada entre as escalas.

**Conclusão:** Os docentes com níveis mínimo e leve estão sujeitos a apresentarem estresse e depressão, merecendo atenção por parte das instituições.

**Palavras-Chave:** Estresse Psicológico; Depressão; Docentes.

## RESUMEN

**Objetivos:** Analizar la presencia de estrés y signos indicativos de depresión en docentes de una institución pública de enseñanza.

**Material y Métodos:** Estudio analítico, realizado con 163 docentes de una institución pública de enseñanza. Se aplicó Escala de estrés percibido-EEP e inventario de depresión de Beck-IDB.

**Resultados:** De los 163 participantes, 108 (66,3%) eran del género masculino, 64 (39,3%) con rango de edad de 30 a 39 años, 79 (48,5%) tenían una renta salarial de más de 15 salarios (en el caso de las mujeres). La mayoría presentó título de maestro, 84 (51,5%). Se identificaron niveles mínimos de estrés en hombres, 73 (67,0%) y 34 (63,0%) en mujeres. 87 (79,8%) mujeres y 35 (64,8%) hombres presentaron un nivel de depresión mínima. Hubo diferencias significativas en los escores de estrés y depresión entre los sexos. Se observó una correlación positiva moderada entre las escalas.

**Conclusión:** Los docentes con niveles mínimo y leve están sujetos a presentar estrés y depresión, mereciendo atención por parte de las instituciones.

**Palabras clave:** Estrés Psicológico; Depresión; Profesores.

## INTRODUCTION

The concept of stress is consolidated in the literature and discussed since the 1930s. It can be understood as an unexpected response of the organism to a given stimulus. The presence of stress in work environments can generate negative income for workers by promoting spaces that affect the quality of life <sup>(1)</sup>.

The main burden associated with persistently experiencing stress involves unwanted physical manifestations such as increased blood pressure and increased susceptibility to stroke. Similarly, other manifestations have been punctuated in the literature, such as infection due to decreased immune system response, eating disorders, gastrointestinal disorders, insomnia, excessive weight gain or loss, insulin resistance, decreased sexual desire and temporary impotence in men, inhibition of learning and memory impairment as well as exacerbation of skin lesions. This compilation of harmful changes interferes with the quality of life of people affected by stress <sup>(2)</sup>.

Stress is reported as a risk factor for the development of depression, affecting the individual's productivity in their biopsychosocial context. Depression is defined as a severe affective or mood disorder considered to be the fourth leading cause of social disability in the world, one of the major concerns involving the risk for suicide <sup>(3)</sup>. In this sense, depression is a recognized public health problem because it causes social damage such as mood swings, decreased productivity, loss of initiative, general disinterest, cognitive, psychomotor and vegetative changes <sup>(4)</sup>.

The most predisposing risk factors for this event are aspects related to personality, family history, childhood events, unpleasant experiences in people's daily lives and social isolation. The set of factors that include early and continuous stress and genetics can determine a person's vulnerability to psychiatric disorders such as depression <sup>(3)</sup>.

Teaching is one of the professions most prone to the development of stress, depression and anxiety due to a combination of aspects with multifaceted characteristics associated with work activity. A study with Nigerian teachers showed a prevalence of 72.2% of stress and 29.3% of depression <sup>(5)</sup>. Studies with Brazilian teachers also show high levels of stress <sup>(6)</sup>.

Workload and adverse psychological environment predict depression, similarly the operating system was also considered a risk factor for depression and anxiety among teachers <sup>(4)</sup>.

Stress and depression can interfere with teachers' daily activities, especially at work, impairing their performance. Recognition of this problem is urgent so that prevention strategies can be listed to address the problem <sup>(5)</sup>.

From this perspective, this study aimed to analyze the presence of stress and signs indicative of depression in teachers of a public educational institution.

## **MATERIAL AND METHODS**

Analytical study of quantitative approach conducted with teachers of a public educational institution in the city of Teresina, Piauí. This institution has a high school, technical course and higher education.

Participants were 163 teachers from a total of 282 registered in the institution faculty, the participants were recruited according to the inclusion criteria: to perform the teaching function during the data collection period. Those with leave for masters and doctorate courses, interns and substitute teachers were excluded.

Data collection took place in January and February 2018, held in a reserved room before or after class time in the room of each department.

To obtain the data, three instruments were used: one elaborated by the researchers containing sociodemographic variables (age in complete years, gender, education, family income in Brazilian minimum wages, number of children and self-reported skin color).

The other two instruments used and validated were: Perceived Stress Scale (PSS-10). The scale consists of 10 items with response options ranging from zero to four (0 = never; 1 = almost never; 2 = sometimes; 3 = almost always; 4 = always). The questions with positive connotation (4, 5, 6, 7, 9, 10) have their score reversed. The other questions are negative and should be added directly. The sum of the question scores provides scores that can range from zero to 56. It is a general scale that can be used across various age groups as it contains no context-specific questions. The following scores are considered: from 0 to 18.6 = low stress level, between 18.7 and 37.2 = average stress level and, from 37.3, high stress levels <sup>(7)</sup>.

The other instrument was the Beck Depression Inventory (BDI), a depression self-assessment scale. Contains 21 statements about sadness, pessimism, feeling of failure, lack of satisfaction, feeling of guilt, feeling of punishment, self-deprecation, self-blame, suicidal thoughts, bouts of crying, irritability, social withdrawal, indecision,

distortion of body image, inhibition for work, sleep disturbance, fatigue, loss of appetite, weight loss, somatic concerns and decreased libido <sup>(8)</sup>.

The degree of intensity varies from 0 to 3, in each statement. The Center for Cognitive Therapy recommends as screening cut-off points: <15 = normal, 15-19 = dysphoria, > 20 = moderate depression and > 30 = severe depression. The IDB contains a heading with questions regarding date, class, subject code, age, gender, marital status and religion <sup>(8)</sup>.

Data were organized for analysis in the Statistical Package for Social Sciences (SPSS), version 22.0. Descriptive analyzes were performed and the chi-square test was used for inferential analysis, the normality test for scores, the Levine test to analyze group homogeneity and the t test for independent samples, in order to compare the means. between the groups.

The project was approved by the Research Ethics Committee of the University Center under CAAE: 80025817.9.0000.5210 and Opinion No. 2,441,627. All participants signed a free and informed consent form.

## RESULTS

Of the 163 teachers, 108 (66.3%) were male. Regarding the age group, 64 (39.3%) were aged 30 to 39 years. It was found that 79 (48.5%) had a salary income of more than 15 salaries. As for color, 80 (49.1%) reported brown color. Most presented master's degree 84 (51.5%) with a workload of 18 to 20 hours, 78 (47.9%), according to Table 1.

**Table 01** - Sociodemographic Profile of teachers of the public educational institution. Teresina, PI, Brazil, 2018. (n = 163)

Variables	N	%	Average	Minimum	Maximum	Standard Deviation
Genre						
Male	108	66,3				
Feminine	55	33,7				
Age						
< 29 years	23	14,2				
30- 40 years	64	39,5				
40- 50 years	45	27,8				
50-  60 years	26	16,0				
> 60 years	4	2,5	40,2	29,0	69,0	9,8
Income						
6 to 9 minimum wages	26	16,0				
9 to 12 minimum wages	27	16,6				
12 to 15 minimum wages	31	19,0				
15 minimum wages	79	48,5				
Home						
Alone	12	7,4				
from 2 to 3 people	92	56,4				
from 4 to 7 people	57	35,0				
8 to 10 people	2	1,2				

> 10 people	0	0,0
Color		
White	55	34,0
black	10	6,2
Brown	80	49,4
Yellow	4	2,5
Indigenous	13	8,0
Professional Title		
Federal public	85	52,1
State Public	39	23,9
Municipal public	9	5,5
Private Institution	30	18,4
Institution Type		
Isolated College	25	15,3
University center	13	8,0
University	97	59,5
Not applicable	28	17,2
Postgraduate		
Update (180 hours minimum)	1	,6
Specialization (minimum 360 hours)	46	28,2
Master's degree	84	51,5
Doctorate degree	29	17,8
I haven't done or haven't completed graduate school yet	3	1,8
Teaching time		
3 to 5 years	45	28,1
6 to 9 years old	35	21,9
10-15 years old	25	15,6
15-20 years old	22	13,8
Over 20 years ago	33	20,6
Weekly workload		
Up to 10 hours	28	17,2
11-   15	39	23,9
15-   17	18	11,0
18-20	78	47,9

Source: Direct Search, 2018

Regarding the analysis of SSP (Stress) scores, it was observed that 70 (42.9%) presented mild stress level. It was observed among women mild stress level ( $p < 0.01$ ) and men presented minimum stress level ( $p < 0.01$ ), as shown in Table 2.

**Table 02** - Distribution of Stress Level frequency (PSS-10) among teachers of the public educational institution Teresina, PI, Brazil, 2018. (n = 163)

Stress Level	Genre				Total		p-value
	Female		Male		N	%	
	n	%	n	%			
Minimum	21	12,9	72	44,2	93	57,1	<0,0001
Light	34	20,9	36	22,0	70	42,9	
Total	55	33,8	108	66,3	163	100	

Source: Direct Research, 2018.

Regarding the analysis of BDI scores, it was observed that 122 (74.8%) had a level of minimal depression. The same analysis was observed between genders, since both had a higher percentage of members with the minimum level of depression ( $p < 0.01$ ), as shown in Table 3.

**Table 3** - Distribution of the frequency of depression among teachers of the public educational institution. Teresina, PI, Brazil, 2018. (n = 163).

Interpretation of BDI Scores	Genre				Total		P-value
	Female		Male		N	%	
	N	%	N	%			
Minimum	36	22,1	86	52,7	122	74,8	0,001
Light	8	4,9	20	12,3	28	17,2	
Moderate	10	6,1	2	1,3	12	7,4	
Serious	1	0,6	0	0	1	0,6	
Total	55	33,7	108	66,3	163	100	

Source: Direct Research, 2018.

When analyzing the correlation between the scales, a moderate positive correlation was observed, showing positive growth in the same direction ( $p < 0.01$ ), as shown in Table 4.

**Table 4** - Correlation between the results of the depression and stress tests among teachers of the public educational institution. Teresina, PI, Brazil, 2018. (n = 163)

Test	Perceived Stress Scale	Sum- Beck Depression Inventory - BDI
Perceived Stress Scale (PSS-10)	Pearson Correlation	1
	p-value	,596**
Sum- Beck Depression Inventory - BDI	Pearson Correlation	,596**
	p-value	,000

Source: Direct Research, 2018.

When comparing the scores of the questionnaires with the gender of the professionals, it was evident that the groups had different variances ( $p < 0.01$ ) and that there is a difference between men and women regarding the level of depression ( $p$ -value = 0.31). Regarding the Stress Scale among professionals, the Levine test showed that the groups are not homogeneous ( $p$ -value = 0.485) and that there is a difference between the groups regarding Stress Scale ( $p$ -value = 0.004 associated with the T Test).

**Table 5** - Comparison Test between genders and questionnaire scores among teachers of the public educational institution. Teresina, PI, Brazil, 2018. (n = 163)

	Levine test	T-test for equality of means				
		p-value	T	p-value	Average difference (IC-95%)	
	Bottom				Higher	
<b>Beck Depression Inventory - BDI</b>						
Equal variances assumed	,000	- 2,501	,013	-3,0112	-5,3888	-,6336
Equal variances not assumed		- 2,199	,031	-3,0112	-5,7376	-,2848
<b>Perceived Stress Scale</b>						
Equal variances assumed	,485	- 2,950	,004	-3,3469	-5,5874	-1,1064
Equal variances not assumed		- 2,860	,005	-3,3469	-5,6692	-1,0246

Source: Direct Research, 2018.

## DISCUSSION

Stress affects teachers in countries of different incomes and at different levels of education. A study of Norwegian teachers showed that although teachers are satisfied with their work, they are stressed about their activities <sup>(9)</sup>. In Nigeria, the prevalence of stress among teachers was 72.2% <sup>(5)</sup>.

In view of the problem, it is necessary to increase strategies aimed at treatment and prevention, since stress episodes are reported by teachers of different ages and at different stages of their careers <sup>(9)</sup>.

Studies that seek answers to stress at the level of gender difference in the animal model have shown that females present greater endocrine changes compared to males and indicate that there are parallels between findings on human data regarding stress and depression <sup>(10)</sup>. The fact that researchers have shown differences in stress in female rats in an environment in which the variables were tightly controlled opens room for further discussion of the issue from a gender perspective in humans.

In the context of teaching, it was evidenced that stress was more present among females. The presence of stress among women can be attributed to the conflict between their roles at work and with their families, the cultural roots that are intertwined in socio-cultural and historical dynamics <sup>(11)</sup>. The understanding that

women have historically been subjected to inferior functions by men, and today occupies more and more neglected spaces, may indicate ways of understanding the differences between stress rates between women and men.

The results of this research point to a low stress percentage in most teachers. However, the findings differ from national and international research. A study in southern Brazil identified a high perception of stress correlated with risk behaviors in different domains such as sociodemographic, occupational characteristics and work characteristics <sup>(6)</sup>. High stress rates have also been identified in teachers from other countries <sup>(5,9)</sup>.

The teaching profession requires a high workload, teachers perform lesson planning, organizing activities, developing and improving curricula, managing extracurricular activities, class supervision, coverage for teacher absences and absences, student performance assessment, and more of other functions that are imputed to them <sup>(4)</sup>.

The activities that provide the greatest impact with significant relationships between stress development and symptoms of depression, in addition to time devoted to work, are intensive verbal communications, adverse psychological environment at work, and teaching students in overcrowded classrooms <sup>(5)</sup>.

The different levels of education indicate differences in stress scores, which are higher in elementary school teachers when compared to high school teachers, mainly due to teaching and lesson planning, responsibility for student performance, classroom management and discipline. class, supervisory role, conducting and monitoring extracurricular activities and relationship, marriage and family problems <sup>(12)</sup>.

Teaching was punctuated in international discussions as one of the most stressful works, the negative repercussions involve the decrease of the quality of education and the consequent reduction of teacher self-efficacy. In addition, teachers may experience lower job satisfaction and impairment, higher levels of Burnout syndrome, and increased attrition <sup>(13-15)</sup>.

The presence of occupational exhaustion related to stress in the workplace is constant and attention-grabbing, as it is one of the factors most associated with low levels of productivity at work and raises motivation to leave the profession, so it is important to stress the need to early detect the presence of stress and signs indicative of depression in order to list synergistic actions to mitigate this impasse <sup>(14)</sup>.

Teachers' workload and various sources of stress contribute to physical and emotional exhaustion, increased sick leave, reduced employment with economic consequences with early retirement and disability pensions <sup>(13-14)</sup>.

Although the level of depression is low among teachers, it is important to note that teachers may develop depression as a psychological consequence of stressful events at work. A study conducted among university professors in China showed a direct relationship between these two variables, presenting stress as a risk factor for depressive symptoms <sup>(16)</sup>.

In India, a survey on Depression and stress levels among teachers found that 52.38% had depression, among them 28.6% had mild depression, 18.1% moderate depression <sup>(17)</sup>. According to international evidence, teachers from different economic and cultural backgrounds have symptoms related to stress and depression.



The teaching profession has been emphasized as the occupation that presents the highest risk of psychological distress and lower levels of job satisfaction compared to the general population and are among those professionals who face the most pressure on their work. The various work-related activities and raising the pressure level can negatively interfere with teachers' emotional and physical state, experiencing a state of fatigue and low productivity <sup>(5,18)</sup>. However, the problem affects both teachers and students, interfering with the development of academic quality and the establishment of relations between teacher/student <sup>(19)</sup>.

The limitations of the study refer to the exclusivity of the data collection place, restricted to a public educational institution, which may limit part of the interpretations to the public context of education and corroborate or contrast information from previous studies in other spheres of education.

## CONCLUSION

The daily development of work activities in teaching involves important decision making and is linked to the various stress events intrinsic and extrinsic to work, contributing to the presence of stress, as observed in this study.

This research has shown that stress may be related to the presence of symptoms of depression. Stress scores proportionally followed depression scores, that is, the higher the stress load the teacher has, the more susceptible he / she would be to showing signs of depression. It is emphasized the need for attention of educators and the creation of programs with preventive and therapeutic actions that enable the teacher to reflect and find alternatives to the impasses that permeate the development of activities of daily living.

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