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SYMPTOMS OF ANXIETY AND STRESS IN ELEMENTARY SCHOOL TEACHERS

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Abstract

Education in Brazil has been facing constant changes and teachers are being affected by psychological symptoms that cause suffering and harm. This study aimed to identify symptoms of anxiety and stress in elementary school teachers. This is a cross-sectional quantitative research, with a sample of 200 teachers from a city of Rio Grande do Sul State, divided into three groups according to their practice: public, private, and both (public/private). The instruments used were: sociodemographic and health questionnaire, LIS-A, LIS-E, and DASS-21. Higher anxiety scores were found in teachers who work in both schools, and stress symptoms were higher in the public school teachers.

ANXIETY • STRESS • TEACHERS • BASIC EDUCATION

SINTOMAS DE ANSIEDADE E ESTRESSE EM PROFESSORES DE EDUCAÇÃO BÁSICA

Resumo

A educação no Brasil vem passando por constantes mudanças e os professores estão sendo acometidos por sintomas psicológicos que causam sofrimento e prejuízo. Neste artigo objetivou-se identificar sintomas de ansiedade e estresse em professores de educação básica. Trata-se de um estudo quantitativo de cunho transversal em amostra de 200 professores de uma cidade do Rio Grande do Sul, divididos em três grupos conforme atuação: rede pública, privada e em ambas (pública/privada). Os instrumentos utilizados foram: questionário sociodemográfico e de saúde, LIS-A, LIS-E e DASS-21. Ocorreram maiores escores de ansiedade nos professores que atuam em ambas redes, e os sintomas de estresse foram maiores nos docentes da rede pública.

ANSIEDADE • ESTRESSE • PROFESSORES • EDUCAÇÃO BÁSICA

SÍNTOMAS DE ANSIEDAD Y ESTRÉS EN PROFESORES DE EDUCACIÓN BÁSICA

Resumen

La educación en Brasil viene pasando por varios cambios y los maestros son afectados por síntomas psicológicos que causan sufrimiento y daño. Se tuvo el propósito de identificar síntomas de ansiedad y estrés en maestros de la educación básica. Se trata de un estudio cuantitativo de cuño transversal en una muestra compuesta de 200 maestros de una ciudad de Rio Grande do Sul, divididos en tres grupos de acuerdo con su actuación: red pública, privada y ambas (pública/privada). Los instrumentos utilizados fueron: cuestionario sociodemográfico y de salud, LIS-A, LIS-E y DASS-21. Los mayores rankings de ansiedad ocurrieron en los maestros que actúan en ambas redes, y los síntomas de estrés fueron más elevados en los docentes de la red pública.

ANSIEDAD • ESTRÉS • MAESTROS • EDUCACIÓN BÁSICA

SYMPTÔMES D'ANXIÉTÉ ET DE STRESS CHEZ DES PROFESSEURS DE L'ENSEIGNEMENT

Résumé

L'éducation au Brésil est constamment confrontée à des changements et les enseignants sont affectés par différents symptômes psychologiques causant souffrances et dommages. Cette étude a cherché à identifier les symptômes d'anxiété et de stress chez des enseignants de l'éducation basique. Il s'est agi d'une étude transversale quantitative menée auprès d'un échantillon de 200 enseignants d'une ville du Rio Grande do Sul. Ces derniers ont été divisés en trois groupes selon qu'ils travaillaient dans des établissements publics, privés et dans les deux à la fois. Les instruments suivants ont été utilisés : questionnaire sociodémographique et de santé, LIS-A, LIS-E et DASS-21. Les scores d'anxiété les plus élevés ont concerné les enseignants travaillant dans les deux réseaux, les symptômes de stress étant plus élevés chez les enseignants des écoles publiques.

ANXIÉTÉ • STRESS • ENSEIGNANTS • ÉDUCATION DE BASE

TEACHERS HAVE HISTORICALLY A LEADING POSITION AND SOCIAL PRESTIGE FOR BEING AN essential transmitter of knowledge to new generations (CANDAUI, 2014). However, they are currently facing new difficulties in teaching practice. Generational change is much more accelerated, children are more dynamic, and teachers are daily challenged in this process (CONCEIÇÃO; SOUZA, 2012). Educators live in a new context and, as much as they have autonomy and authority in the classroom, they fight against structural, financial, and disciplinary difficulties.

Exercising leadership management, dealing with indiscipline and violence, interacting with families who do not always collaborate and be present at the school are recurrent complaints from Brazilian teachers (JESUINO, 2014). Thus, the current teacher has the complex and great responsibility of training children and young people for a society in constant change and transformation. Teachers are the fundamental piece in the educational process, so researches about their well-being, especially regarding mental health, are very important (JACOMINI; PENNA, 2016). Therefore, it is increasingly necessary to provide means to improve the educator's health and enable them to cope with environmental factors that cause stress and anxiety (FREITAS; CALAIS; CARDOSO, 2018).

This educational context, added to other factors that undermine teaching professionals – exhaustive working hours, low pay, student indiscipline, violence, double functions and teaching' massification – is contributing to the teachers' illness (CORTEZ *et al.*, 2017; FREITAS, 2015; VALE; AGUILLERA, 2016). For this reason, teaching has been considered one of the most stressful occupations, since has become an unpleasant activity for some professionals (DIEHL; MARIN, 2016; GOULART JUNIOR; LIPP, 2011). Symptoms of stress and psychosomatic diseases are common, among other occupational diseases (SILVA; GUILLO, 2015). These symptoms could be associated with social and institutional changes in education (CORTEZ *et al.*, 2017), considering that the precariousness of teaching work has increased, especially due to low salaries, increased tasks, lack of consistent training policies, and organizational structure (IÓRIO; LELIS, 2015; BACCIN; SHIROMA, 2017). Teachers in public and private schools are affected by these factors, but there is evidence of a higher prevalence of stress and anxiety symptoms in public school teachers (CARLOTTO, 2010; RAUSCH; DUBIELLA, 2013), although fewer surveys are conducted in the private schools (DALAGASPERINA; MONTEIRO, 2014).

Stress is defined as a set of behavioral and physiological reactions resulting from environmental pressures on the body, which strive to return to normal functioning (SELYE, 1956). Although high levels of stress can generate suffering, it can also be motivating for increased performance when it is at low levels (RODRIGUES; SANTOS; TOURINHO, 2016). The first investigations on stress introduced a model consisting of three stages - alert, resistance, and exhaustion (RIBEIRO, 2015) – but later, a fourth stage was suggested, between resistance and exhaustion, called near exhaustion (LIPP, 2000). The alert stage is a positive state of stress, which tries to break the homeostasis of the body. The person is moved from his/her comfort zone and tries to react to recover. This is a short phase, but it can be reversed positively if the person can cope with this state. The most frequent symptoms are respiratory, cardiac and blood pressure changes, and increased anxiety symptoms (LIPP, 2000; SELYE, 1956). Resistance is the second stage and happens when the stressor of the first stage is maintained and the person is unable to reestablish the body homeostasis. In this case, productivity becomes impaired and the individual becomes more vulnerable. The main symptoms are mood changes, insomnia, gastritis, irritability, and hypertension (LIPP, 2000; MARTINS, 2007). The near exhaustion stage occurs when the psychological resistance cannot withstand the stress of the previous phase, intensifying the symptoms, causing frequent moments

of discomfort and anxiety (LIPP; MALAGRIS, 2011). In the exhaustion phase, the stressing agent has not been overcome, the body's resistance reaches the limit and can develop depressive symptoms (LIPP, 2000; SELYE, 1956). Pathological stress significantly compromises the teachers' health, impairing teaching practice, and the quality of education (JACOMINI; PENNA, 2016).

Besides physical and psychological consequences that happen as a result of stress, anxiety symptoms also damage the teachers' work. Anxiety can be defined as the anticipation of a possible future threat, which is not always real. Therefore, this state induces excessive vigilance, permanent fear, and muscle tension in the individual (AMERICAN PSYCHIATRIC ASSOCIATION, 2014). Due to the increased activity of the autonomous nervous system, anxiety can cause abdominal discomfort, trembling, psychomotor agitation, excessive worry, impaired concentration, dizziness, palpitation, and tachycardia (SADOCK; SADOCK; RUIZ, 2017). Anxiety, at a moderate level, is useful because it helps the performance in different situations, such as increasing a person's alert state in potentially dangerous context (BARLOW; DURAND, 2017). However, in excess, it can cause significant harm, such as a possible psychological disorder (GUIMARÃES *et al.*, 2015).

A study identified that symptoms of stress, anxiety, and depression were the most prevalent among teachers (TOSTES *et al.*, 2018), with a high association among them (APÓSTOLO *et al.*, 2011). Due to this scenario, the educators' illness started to be discussed in schools, unions, and health professionals' researches (GOUVÊA, 2016). The current educational portrait reveals that primary education teachers are experiencing teaching discomfort (DIEHL; MARIM, 2016). Violence, low pay, excessive workload, and bureaucracy, associated with the new generations' speed of change, create great apprehension and a favorable environment for the emergence of symptoms of stress and anxiety (VALE; AGUILLERA, 2016).

This study aimed to investigate the presence of symptoms of anxiety and stress in primary school teachers. Besides, it sought to describe the sociodemographic profile of teachers working in the public, private, and public/private schools and to compare the symptoms of stress and anxiety among the three groups.

METHODOLOGY

This is a quantitative, descriptive, and cross-sectional study (SAMPIERI; COLLADO; LUCIO, 2013). 200 primary education teachers from a city in northern Rio Grande do Sul state participated in the study, including women and men, over 18 years of age, who work in the primary education system and who were not distant from their teaching activities. Higher education teachers and teachers who did not have the physical and psychological conditions to answer the instruments at the time of data collection were excluded from the sample.

The instruments applied are described below.

- Sociodemographic and health questionnaire: developed to collect data of sociodemographic profiles such as gender, age, marital status, income, weekly workload, professional experience, physical activity, health problems, use of psychiatric medication, psychiatric and psychological treatment.
- Anxiety Symptoms Intensity Survey (LIS-A): a self-assessment tool of 20 questions arranged on a Likert scale, from 0 (never/rarely) to 4 (often/ever), that aims to identify the intensity of anxiety symptoms. The higher the score, the greater the presence of anxiety symptoms (FERREIRA, 2015a).
- Stress Symptoms Intensity Survey (LIS-E): a self-assessment instrument of 20 questions arranged on a Likert scale, from 0 (never/rarely) to 4 (frequently/every time), that aims to identify the intensity of stress symptoms. The higher the score, the greater the presence of stress symptoms (FERREIRA, 2015b). Both LIS-A and LIS-E are currently in the validation phase and have no normative data yet.

- Anxiety, Depression, and Stress Scale (DASS-21): a self-assessment instrument, validated and translated into Portuguese, applied to identify the intensity of symptoms of depression, anxiety, and stress. The scale is composed of 21 questions on a Likert scale, from zero (0 – does not apply at all) to three (3 – applies a lot, or most of the time), which classify the results into normal/light, minimal, moderate, severe, and very severe symptoms. Cronbach's alpha values of 0.90 for depression, 0.86 for anxiety, and 0.88 for stress were obtained through the validation process (VIGNOLA; TUCCI, 2014).

In this study, the anxiety (DASS-A) and stress (DASS-E) subscales were used.

RESEARCH AND ETHICAL PROCEDURES

The research project was approved by the Ethical Research Committee [Comitê de Ética em Pesquisa] of Faculdade Meridional – Imed (CEP-Imed) under the CAAE number 45557815,5,000,5319. After confirmation and permission from the schools, the data were collected in the available spaces of each school. The application of the instruments was done collectively during the pedagogical meetings and attended the subsequent steps: presentation of the research goals and the ethical issues involved, and reading of the Free and Informed Consent, developed according to resolutions n. 466 (BRASIL, 2013) and n. 510 (BRASIL, 2016) of the National Health Council [Conselho Nacional de Saúde]. After the participants' consent, they answered the instruments (sociodemographic and health questionnaire, LIS-A, LIS-E, and DASS-21), while the researcher remained alert to solve possible questions. The data collection lasted an average of 30 minutes. After the data analysis, the researchers provided a moment of feedback to the schools, with a presentation of the results and psychoeducation on anxiety and stress symptoms. Besides, psychological and psychiatric referrals were provided to teachers who showed anxiety and stress symptoms.

The data were analyzed quantitatively, with description and interpretation by the Statistical Package for the Social Sciences (SPSS) database, version 22.0. The descriptive and inferential analysis of scores was performed using the chi-square, Kruskal-Wallis, Mann-Whitney, and Spearman correlation, considering a 5% probability for the variables assessed (DANCEY; REIDY, 2013).

RESULTS

The participants were divided into three groups: exclusive practice in the public schools (n = 92; 46%), exclusive practice in private schools (n = 84; 42%) and practice in both public/private schools (n = 24; 12%). Regarding gender, 82.5% of the participants are women and 17.5% men; the majority of women work in the public sector (49.1%) and most men work in the private sector (54.35%). Also, most of the sample are married or have a stable union, 47% of them in the private sector, and 41.7% in the public sector. The teachers' average age was 40.75 years old (SD = 10.22), women presented an average of 41.24 years old (SD = 10.10) and men, 38.46 years old (SD = 10.59). The participants' mean age per group in public school was 45.56 years (SD = 9.45), in private school it was 37 years (SD = 8.46) and in public/private it was 39.67 years (SD = 12.86). The results regarding the education level, family income, practice field, weekly load per hour, out-of-class time dedicated to school activities, and teaching time are shown in Table 1.

TABLE 1
GENERAL SAMPLE CHARACTERIZATION

| Category | Variable | Public | | Private | | Public/Private | |
|--|--|--------|-------|---------|-------|----------------|-------|
| | | n | % | n | % | n | % |
| Education level | Incomplete High School | 6 | 85.7% | 1 | 14.3% | 0 | 0% |
| | Complete High School | 17 | 31.5% | 34 | 63% | 3 | 5.6% |
| | Specialization | 59 | 53.6% | 35 | 31.8% | 16 | 14.5% |
| | Master | 10 | 35.7% | 14 | 50% | 4 | 14.3% |
| | PhD / Post-doctoral | 0 | 0% | 0 | 0% | 1 | 100% |
| Family income | Between R\$ 0 and R\$ 1.908.00 | 5 | 55.6% | 4 | 44.4% | 0 | 0% |
| | Between R\$ 1.908.01 and R\$ 2.862.00 | 5 | 25% | 13 | 65% | 2 | 10% |
| | Between R\$ 2.862.01 and R\$ 5.724.00 | 45 | 51.1% | 31 | 35.2% | 12 | 13.6% |
| | Between R\$ 5.724.01 and R\$ 9.540.00 | 28 | 51.9% | 20 | 37% | 6 | 11.1% |
| | Between R\$ 9.540.01 and R\$ 14.310.00 | 8 | 32% | 15 | 60% | 2 | 8% |
| | Above R\$ 14.310.00 | 1 | 25% | 1 | 25% | 2 | 50% |
| Practice field | Primary school (PS) | 12 | 40% | 17 | 56.7% | 1 | 3.3% |
| | Elementary school (ES) first years | 33 | 55.9% | 21 | 35.6% | 5 | 8.5% |
| | Elementary school (ES) final years | 19 | 70.4% | 6 | 22.2% | 2 | 7.4% |
| | High School (HS) | 3 | 25% | 6 | 50% | 3 | 25% |
| | PS and ES first years | 9 | 45% | 8 | 40% | 3 | 15% |
| | ES final years and HS | 16 | 36.4% | 19 | 43.2% | 9 | 20.5% |
| | All the fields | 0 | 0% | 7 | 87.5% | 1 | 12.2% |
| Weekly load per hour | Up to 10 hours | 1 | 20% | 4 | 80% | 0 | 0% |
| | 11 to 20 hours | 20 | 64.5% | 11 | 35.5% | 0 | 0% |
| | 21 to 30 hours | 8 | 17% | 33 | 70.2% | 6 | 12.8% |
| | 31 to 40 hours | 52 | 63.4% | 26 | 31.7% | 4 | 4.9% |
| | More than 41 hours | 11 | 31.4% | 10 | 28.6% | 14 | 40% |
| Out-of-class time dedicated to school activities | Up to 2 hours | 25 | 44.6% | 27 | 48.2% | 4 | 7.1% |
| | 3 to 5 hours | 47 | 50% | 32 | 34% | 15 | 16% |
| | 6 to 8 hours | 17 | 53.1% | 13 | 40.6% | 2 | 6.2% |
| | More than 9 hours | 3 | 16.7% | 12 | 66.7% | 3 | 16.7% |
| Teaching time | 1 to 5 years | 13 | 31% | 26 | 61.9% | 3 | 7.1% |
| | 6 to 10 years | 26 | 43.3% | 27 | 45% | 7 | 11.7% |
| | 11 to 15 years | 34 | 50% | 24 | 35.3% | 10 | 14.7% |
| | 16 to 25 years | 19 | 63.3% | 7 | 23.3% | 4 | 13.3% |

Source: Developed by the authors using data from the research.

Most public (50.6%) and public/private (14.5%) school teachers do not engage in regular physical activity, while those working in private schools (47%) do so every week. Regarding health problems, most of the public school group has some clinical diagnosis, with hypertension being the most prevalent (32.4%). Most of the private school sample (48.2%) and the public/private school sample have no health problem (12.2%). Also, most of the public school teachers (66.7%) have already been dismissed from work due to psychiatric disorder, and all dismissals were due to major depressive disorder diagnosis. On the other hand, most of those who work in the private (43.2%) and public/private (12.4%) have never been absent from work due to illness. Regarding psychiatric treatment, the majority of teachers in public (48.3%) and public/private (17.2%) schools take some psychopharmaceuticals, and the antidepressant is the most used (71.4% and 60% respectively). Besides, most of those who work in the public (52.9%) and public/private (14.7%) sector has already

undergone psychotherapy, but are not currently being followed up, while those in private school (44.2%) have never undergone psychotherapy. Finally, most of the teachers working in the public sector (50%) and public/private sector (12%) declared having already experienced anxiety symptoms, on the other hand, in the private school, the majority denied having these symptoms (45.5%).

When comparing genders, there was no statistically significant difference by the chi-square in the weekly workload ($\chi^2 = 1.78, p = 0.78$); there was also no statistically relevant difference in the comparison of out-of-class time dedicated to school activities ($\chi^2 = 7.36, p = 0.06$). It was not possible to calculate the gender ratio difference for those working in the initial or final series due to the items' responses overlapping.

The anxiety symptoms assessment indicated that the group of public/private school teachers scored higher on LIS-A ($M = 24.63; SD = 13.41$) and DASS-A ($M = 7.25; SD = 9.15$, normal symptoms) in comparison to the other groups, by the Kruskal-Wallis test, although the difference is not statistically significant. Stress symptoms were more prevalent in the group of public school teachers, shown by LIS-E ($M = 24.51; SD = 15.15$) and DASS-E ($M = 15.02; SD = 8.56$, mild symptoms), both statistically significant ($p \leq 0.03$). The total DASS results showed higher mean ($M = 30.50; SD = 22.36$) in public school teachers, with statistical significance ($p = 0.02$). The criteria adopted to analyze the anxiety and stress symptoms of DASS are those indicated by Lovibond and Lovibond (2004¹ *apud* VIGNOLA; TUCCI, 2014), according to Table 2.

TABLE 2
MEAN, STANDARD DEVIATION (SD) OF SYMPTOMS OF ANXIETY AND STRESS AND INFERENTIAL STATISTICS BY THE KRUSKAL-WALLIS TEST

| | Total | | Public | | Private | | Public/Private | | Kruskal-Wallis | |
|------------|-------|-------|--------|-------|---------|-------|----------------|-------|----------------|------|
| | M | SD | M | SD | M | SD | M | SD | H | p |
| LIS-A | 21.18 | 12.34 | 22.16 | 12.80 | 19.12 | 13.41 | 24.63 | 13.41 | 4.87 | 0.09 |
| DASS-A | 6.11 | 7.14 | 6.52 | 7.14 | 5.33 | 9.15 | 7.25 | 9.15 | 2.26 | 0.32 |
| LIS-E | 21.60 | 14.23 | 24.51 | 15.15 | 18.46 | 11.76 | 21.42 | 16.60 | 7.34 | 0.03 |
| DASS-E | 13.44 | 8.12 | 15.02 | 8.56 | 11.31 | 3.51 | 14.83 | 8.65 | 8.71 | 0.01 |
| Total DASS | 26.76 | 21.19 | 30.50 | 22.36 | 21.88 | 25.28 | 29.50 | 25.28 | 7.72 | 0.02 |

Source: Developed by the authors using data from the research.

The association between anxiety and stress scores and other variables, such as physical activity, health problems, withdrawal due to psychiatric conditions, anxiety crisis, and use of psychiatric medication was also investigated. The Mann-Whitney test indicated a significant difference between teachers who do not practice physical activity and the occurrence of higher stress and anxiety symptoms (DASS-A, $p = 0.004$; LIS-E, $p = 0.005$; DASS-E, $p = 0.004$; Total DASS, $p = 0.008$). Teachers who reported some health problem presented more symptoms of anxiety and stress when compared to those who did not mention some conditions (LIS-A, $p = 0.002$; DASS-A, $p = 0.033$; LIS-E, $p = 0.006$; Total DASS, $p = 0.028$).

Regarding the withdrawal from work due to a psychiatric condition, there was a significant difference only in the LIS-A average ($p = 0.028$), which reveals that those teachers that were withdrawn from work due to a psychiatric disorder presented more symptoms of anxiety when compared to those who did not withdraw. The self-reported experience of an anxiety crisis indicated a statistically significant difference in all instruments ($p < 0.01$), a situation that also happened among participants who declared to use psychiatric medication ($p \leq 0.038$).

As for psychotherapy and the presence of anxiety and stress symptoms, the results also indicate that there was a significant difference between psychotherapy and LIS-E anxiety symptoms

1 LOVIBOND, S. H.; LOVIBOND, P. F. *Manual for the depression anxiety stress scales*. 4. ed. Sydney: Psychology Foundation, 2004.

($\chi^2 = 14.67$; $p = 0.001$), DASS-A anxiety symptoms ($\chi^2 = 10.489$; $p = 0.005$) and total DASS ($\chi^2 = 12.57$; $p = 0.002$). Teachers who undergo psychotherapy have more symptoms of anxiety and stress when compared to those who do not undergo psychotherapy and to those who have already done it at some point in their lives (Table 3).

TABLE 3
MEAN, STANDARD DEVIATION (SD), ANXIETY AND STRESS SYMPTOMS AND INFERENTIAL STATISTICS BY MANN-WHITNEY TEST

| | | | LIS-A | DASS-A | LIS-E | DASS-E | Total DASS |
|---|------------------------------------|-------|---------|---------|---------|---------|------------|
| Physical activity | Yes | M | 19.85 | 5.04 | 19.24 | 12.17 | 23.59 |
| | | SD | 12.00 | 6.64 | 12.99 | 7.62 | 19.27 |
| | No | M | 23.06 | 7.61 | 24.93 | 15.23 | 31.23 |
| | | SD | 12.64 | 7.58 | 15.29 | 8.52 | 23.02 |
| | Mann-Whitney | U | 4129 | 3705.5 | 3722.5 | 3698.5 | 3780.5 |
| | | p | 0.071 | 0.004 | 0.005 | 0.004 | 0.008 |
| Health problem | Yes | M | 24.77 | 7.18 | 25.43 | 14.26 | 30.69 |
| | | SD | 11.90 | 7.02 | 14.61 | 7.35 | 22 |
| | No | M | 19.6 | 5.64 | 19.92 | 13.08 | 25.04 |
| | | SD | 12.241 | 7.16 | 13.791 | 8.44 | 20.68 |
| | Mann-Whitney | U | 3050.5 | 3448 | 3205.5 | 3783.5 | 3411.5 |
| | | p | 0.002 | 0.033 | 0.006 | 0.224 | 0.028 |
| Withdrawal from work due to a psychiatric condition | Yes | M | 29.6 | 11.2 | 29.73 | 15.47 | 37.73 |
| | | SD | 17.054 | 11.706 | 21.694 | 11.07 | 33.1 |
| | No | M | 20.5 | 5.7 | 20.94 | 13.28 | 25.87 |
| | | SD | 11.68 | 6.51 | 13.33 | 7.86 | 19.79 |
| | Mann-Whitney | U | 914.5 | 1028.5 | 1082.5 | 1258 | 1131 |
| | | p | 0.028 | 0.09 | 0.157 | 0.546 | 0.234 |
| Anxiety crisis | Yes | M | 27.57 | 8.89 | 27.32 | 16.16 | 35.05 |
| | | SD | 13.002 | 8.34 | 15.239 | 8.52 | 23.94 |
| | No | M | 16.16 | 3.93 | 17.11 | 11.30 | 20.25 |
| | | SD | 9.10 | 5.09 | 11.62 | 7.14 | 16.08 |
| | Mann-Whitney | U | 2286.5 | 2997 | 2859.5 | 3217.5 | 2954 |
| | | p | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Psychiatric medication | Yes | M | 27.14 | 9.93 | 27.62 | 15.93 | 37.79 |
| | | SD | 12.04 | 8.64 | 15.69 | 8.29 | 25.76 |
| | No | M | 20.17 | 5.46 | 20.58 | 13.02 | 24.89 |
| | | SD | 12.14 | 6.66 | 13.76 | 8.05 | 19.8 |
| | Mann-Whitney | U | 1607.5 | 1678.5 | 1777 | 1882.5 | 1715.5 |
| | | p | 0.002 | 0.005 | 0.015 | 0.038 | 0.008 |
| Psychotherapy | Yes | M | 26.11 | 9.68 | 28.53 | 17.89 | 40.0 |
| | | SD | 15.61 | 9.98 | 17.27 | 9.72 | 26.84 |
| | No | M | 19.41 | 5.14 | 19.22 | 12.34 | 23.37 |
| | | SD | 11.18 | 6.37 | 13.03 | 7.62 | 18.99 |
| | Have already done it at some point | M | 26.06 | 8.29 | 28.00 | 15.71 | 34.00 |
| | | SD | 13.42 | 7.55 | 14.60 | 8.21 | 22.68 |
| Mann-Whitney | U | 10.33 | 10.50 | 14.67 | 10.40 | 12.57 | |
| | p | 0.006 | 0.005 | 0.001 | 0.006 | 0.002 | |

Source: Developed by the authors using data from the research.

A statistical analysis was performed to identify if there was a difference in anxiety and stress symptoms scores between men and women. No statistically significant difference was identified in the sample:

- LIS-A: women, mean = 21.36, SD = 11.54; men, mean = 20.31, SD = 15.74; U = 2506.5, $p = 0.22$;
- DASS-A: women, mean = 5.87, SD = 6.66; men, mean = 7.26, SD = 9.08; U = 2851.5, $p = 0.91$;
- LIS-E: women, average = 21.45, SD = 13.23; men, average = 22.31, SD = 18.47; U = 2714.5, $p = 0.58$;
- DASS-E: women, average = 13.52, SD = 7.92; men, average = 13.09, SD = 9.14; U = 2706, $p = 0.56$.

The correlation analysis (Spearman) revealed a negative correlation, from weak to moderate, between the duration of psychiatric treatment and stress symptoms, suggesting that longer psychiatric treatment can be effective in reducing these symptoms. Correlations between instruments and subscales of anxiety and stress were positive, from moderate to strong ($p \geq 0.616$), indicating a good correlation between instruments and also between anxiety and stress symptoms (Table 4).

TABLE 4
SPEARMAN CORRELATION BETWEEN AGE, TEACHING TIME, SCHOOL WORKLOAD, OUT-OF-CLASS TIME, PSYCHIATRIC TREATMENT DURATION, LIS-A, LIS-E, DASS-A, DASS-E AND TOTAL DASS

| | Age | Teaching time | School workload | Out-of-class time dedicated to school activities | Psychiatric treatment duration | Total LIS-A | Total LIS-E | DASS anxiety | DASS stress |
|--|---------|---------------|-----------------|--|--------------------------------|-------------|-------------|--------------|-------------|
| Teaching time | 0,713** | 1 | | | | | | | |
| School workload | 0,529** | 0,536** | 1 | | | | | | |
| Out-of-class time dedicated to school activities | 0,073 | 0,215** | 0,150* | 1 | | | | | |
| Psychiatric treatment duration | 0,475 | 0,365 | 0,546* | 0,159 | 1 | | | | |
| Total LIS-A | -0,081 | -0,089 | 0,01 | 0,023 | -0,121 | 1 | | | |
| Total LIS-E | -0,004 | -0,067 | 0,078 | 0,032 | -0,149 | 0,788** | 1 | | |
| DASS anxiety | -0,017 | -0,038 | 0,002 | 0,059 | -0,344 | 0,656** | 0,653** | 1 | |
| DASS stress | -0,022 | -0,039 | 0,062 | 0,019 | -0,398 | 0,616** | 0,685** | 0,660** | 1 |
| Total DASS | -0,009 | -0,039 | 0,057 | 0,02 | -0,325 | 0,686** | 0,730** | 0,850** | 0,899** |

Source: Developed by the authors using data from the research.

Note:

**Significant correlation at p level < 0.01.

* Significant correlation at p level \leq 0,05.

DISCUSSION

The socio-demographic data pointed out that the results are in line with other studies, which found:

- majority of women (82.5%), from 62% to 78.85% (FREITAS, 2015; FRENZEL *et al.*, 2016; TOSTES *et al.*, 2018);
- mean age of 40.75 years, ranging from 40 to 50 years in the literature accessed (VIEIRA, 2017; FREITAS; CALAIS; CARDOSO, 2018)
- the predominance of stable union/marriage regarding marital status (FREITAS, 2015; MONTEIRO; DALAGASPERINA; QUADROS, 2012).

No statistically significant difference was found between gender and weekly workload in the studied sample; neither difference between out-of-class time dedicated to school activities' and gender. The majority of the participants work from 31 to 40 hours per week, with emphasis on the public sector (63.4%), a finding compatible with the literature (DALAGASPERINA; MONTEIRO, 2014; TOSTES *et al.*, 2018). 35 teachers work more than 41 hours per week, i.e., 17.5% of the total, with emphasis on the public/private group. This percentage is lower than that found in other studies: 31% (ZILLE; CREMONEZI, 2013) and 50% (SILVA; GUILLO, 2015). These numbers can help to understand the low levels of stress and anxiety symptoms in the sample since exhausting workloads are factors that usually impair the teachers' quality of life (SILVEIRA *et al.*, 2014). Regarding the out-of-class time dedicated to school activities, 94 teachers (47%) said they use 3 to 5 hours a week, 50% of which belong to the public school group. A similar survey by the National Confederation of Workers in Education (CNTE) concluded that approximately 25% of a sample of 762 participants affirmed that they work up to 5 hours, another 25% work 6 to 10 hours, and the remaining 11 hours a week (VIEIRA, 2017). Other similar studies do not report the number of worked hours but indicate that most teachers take work home (SILVA; GUILLO, 2015; TOSTES *et al.*, 2018).

Public school teachers reached higher stress rates in DASS (minimal symptoms), with a statistically significant difference compared to the rest of the sample (VIGNOLA; TUCCI, 2014). Stress is among the most common symptoms cited in studies with teachers (DIEHL; MARIN, 2016), being the main health problem reported by these workers (SILVA; GUILLO, 2015), and classroom professionals are considered to be a class with a high propensity to stress (SILVEIRA *et al.*, 2014). Stress symptoms are very frequent among teachers, with rates ranging from 42.86% through to 76.9%, depending on the methodology, the instrument used and the symptom classification range (FREITAS, 2015; MARTINS, 2007; RIBEIRO, 2015; ZILLE; CREMONEZI, 2013).

Comparing the three groups in this study (public school teachers, private school teachers, and both) regarding the LIS-E and DASS-E scores, teachers working in public schools showed more symptoms of stress. Teachers who work in public institutions are more prone to stress symptoms when compared to those from the private sector (CARLOTTO, 2010; ESTEVES-FERREIRA; SANTOS; RIGOLON, 2014), although some studies report a higher prevalence of stress in private school teachers (DESOUKY; ALBAM, 2017).

The group of public/private school teachers had higher anxiety scores than the other groups, although classified as normal/light (VIGNOLA; TUCCI, 2014). There is not a consensus in the literature regarding the severity of anxiety symptoms in teachers; some studies reported mild symptoms (GOUVEIA, 2010; PAGOTTI, 2007) and other ones indicated the presence of more severe symptoms in this population (FREITAS, 2015; TOSTES *et al.*, 2018). The CNTE survey showed that more than half of the teachers report anxiety as the main symptom when questioned about manifestations of malaise and/or illness in educational professionals (VIEIRA, 2017).

Stress symptoms did not differ statistically significantly between women and men, which is in line with other studies (PEREIRA *et al.*, 2003; WEBER *et al.*, 2015). However, research indicates that anxiety symptoms (TOSTES *et al.*, 2018) such as forgetfulness, mental fatigue, insomnia, and

irritability were significantly higher in women (ARAÚJO *et al.*, 2006). Inadequate working conditions, the overload of domestic tasks, and lack of public services to help working mothers can impact the professional and personal lives of working mothers (ZIBETTI; PEREIRA, 2010). The absence of a significant difference in this research could be explained by the small number of male participants.

The findings also indicated that teachers who did not practice physical activity had more symptoms of anxiety and stress when compared to those who did. According to the literature, teachers can practice little exercise (OLIVEIRA; VIEIRA, 2010), which compromises their health (SILVA; GUILLO, 2015). Sports practice is an agent for mental and physical quality of life (SADIR; BIGNOTTO; LIPP, 2010).

Regarding health problems, most public school teachers reported to have some condition, and hypertension was the most prevalent (32.4%). Other studies also indicate that hypertension is highly prevalent among teachers (VIEIRA, 2017; ZILLE; CREMONEZI, 2013). Besides, teachers who suffered from any disease reached a higher score of anxiety and stress symptoms when compared to others. Physical manifestations that are not explained by any organic problem are common in people who have symptoms of stress and anxiety (GOULART JUNIOR; LIPP, 2011).

Public school teachers had a higher rate of withdrawal from work due to a psychiatric condition, and 66.7% were absent on medical leave, mostly due to a major depressive disorder. Depressive symptoms are the cause of many withdrawals from work (BATISTA; CARLOTTO; MOREIRA, 2013; SCANDOLARA *et al.*, 2015; VALE; AGUILLERA, 2016), more frequently among public school teachers (ESTEVEZ-FERREIRA; SANTOS; RIGOLON, 2014). Teachers' illness and withdrawal can be a consequence of several factors, such as salary and personal devaluation, more than one positions, double workday and work overload, students' indiscipline, noise, hostility, and lack of structure in schools (CORTEZ *et al.*, 2017; JACOMINI; PENNA, 2016; RAUSCH; DUBIELLA, 2013).

In this study, teachers undergoing psychiatric treatment were found to have more symptoms of anxiety and stress than the rest of the sample. One hypothesis for this result is that the group of teachers who use psychopharmaceuticals can be considered a clinical group. These health problems have serious consequences for the teachers' quality of life and the basic educational system since the number of teachers withdrawn from medical leave has grown in recent years (GOUVÊA, 2016; RIBEIRO, 2015). However, Spearman's correlations have identified a negative relationship, from weak to moderate, between psychiatric treatment duration and stress symptoms, suggesting that symptoms decrease with psychiatric treatment (SOARES; OLIVEIRA; BATISTA, 2017).

The majority of public (48.3%) and public/private (17.2%) system teachers affirmed to use psychopharmaceuticals, and antidepressant is the most common. The consumption of antidepressants has already been reported in a study with teachers (SEGAT; DIFENTHAELER, 2013), who have increasingly consumed this type of psychiatric drug (SOARES; OLIVEIRA; BATISTA, 2017). Psychotropics are a great ally in the treatment of mental diseases, especially when combined with psychotherapy (BRAGA *et al.*, 2016).

The results also revealed that most public (52.9%) and public/private school teachers had already undergone psychotherapy, but were not in treatment at the time of data collection. On the other hand, 44.2% of the teachers who work only in the private system have never undergone psychotherapy. Psychological, nutritional, and psychiatric care are the services least accessed by teachers, possibly because these services are not widely offered by health insurance. For women psychological care appears in tenth position and, for men, in ninth (VIEIRA, 2017). Strategies adopted by teachers to cope with stress are not usually psychological treatments, but religious practices or conversations with colleagues and family (RIBEIRO, 2015). However, psychotherapy continues to be a fundamental ally in the treatment of mental disorders, providing significant results in the individuals' lives (GOMES *et al.*, 2016; SOARES; OLIVEIRA; BATISTA, 2017).

FINAL CONSIDERATIONS

Teachers working in both public-private systems had higher averages in LIS-A and DASS-A for anxiety symptoms. On the other hand, stress symptoms in the LIS-E, DASS-E, and DASS total score were more prevalent in the group working in the public schools. Teachers in the public/private group had more anxiety symptoms, and those working only in the public system showed more stress symptoms, compared to the others. The DASS anxiety and stress symptoms scores are in the normal to mild symptom ranges.

Teachers are key mediators in the process of building an organized, accountable, and developed community, once research and teaching are primary activities in advanced countries. As much as the findings indicate mild and minimal levels of anxiety and stress symptoms, it is essential to develop strategies that decrease the causes of anxiety and stress in educational institutions. Therefore, government policies and corporate actions that contribute to the teachers' quality of life should be implemented, such as fair salary, investment in school security and infrastructure, reduction of workload, and respect for the teaching class.

The scales used in this research are self-reported, which can be considered a limitation because they can make it difficult to express and register the symptoms. Some questions still need further study, since this research does not completely address the subject of teachers' illness. A deeper analysis of stress symptoms in basic education teachers would be relevant since these symptoms had a significant incidence in the results.

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