Evaluation of Psychosomatic Symptoms Associated with Stress in Teachers after Returning to Face-to-Face Classes

Edwin Gustavo Estrada-Araoz[*]
Universidad Nacional Amazónica de Madre de Dios, Puerto Maldonado, Perú

Judith Annie Bautista Quispe
Universidad Nacional del Altiplano, Puno, Perú

Benjamín Velazco Reyes
Universidad Nacional del Altiplano, Puno, Perú

Wilber Cesar Calsina Ponce
Universidad Nacional del Altiplano, Puno, Perú

Duverly Joao Incacutipa Limachi
Universidad Nacional del Altiplano, Puno, Perú

Victor Soto Aquino
Universidad Nacional Intercultural de la Selva Central Juan Santos Atahualpa La Merced, Perú

Yolanda Paredes Valverde
Universidad Nacional Amazónica de Madre de Dios, Puerto Maldonado, Perú

Rosel Quispe Herrera
Universidad Nacional Amazónica de Madre de Dios, Puerto Maldonado, Perú

Abstract. The objective of the present investigation was to evaluate the psychosomatic symptoms associated with stress in Primary and Secondary Education teachers after returning to face-to-face classes. For that purpose, a quantitative approach was used; the design was non-experimental, and the type of research was cross-sectional descriptive. The sample consisted of 301 teachers who responded to the Psychosomatic Problems Questionnaire, an instrument with adequate

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[*] Corresponding author: Edwin Gustavo Estrada-Araoz, *gestrada@unamad.edu.pe*

levels of content validity and reliability. Data analysis was performed at both descriptive and inferential levels. The descriptive analysis was accomplished using the distribution of percentages. Inference analysis was developed using the Student's t-test, which made it possible to determine whether there were statistically significant differences in terms of the presence of psychosomatic symptoms associated with stress according to the sociodemographic variables. The results revealed that 45.2% of the teachers displayed psychosomatic symptoms associated with stress at a moderate level; 33.9% were at a low level; and 20.9% were at a high level. The most frequently reported symptoms were extreme tiredness, headaches, and a feeling of not wanting to get up in the morning. At the same time, it was determined that there were statistically significant differences regarding the presence of psychosomatic symptoms associated with stress related to the gender and employment status of the teachers. It was concluded that the teachers rated the psychosomatic symptoms associated with stress at a moderate level. The present investigation represents a contribution to the psychological health and emotional well-being of teachers, since it allows for the determination of psychosomatic symptoms associated with stress. Therefore, it is important that the relevant educational authorities provide services and strategies for the care, prevention, protection, approach and recovery of the mental health of teachers.

1. Introduction

The health emergency caused by COVID-19 has marked a turning point in the history of humanity. After the announcement made by authorities in Wuhan (China) regarding the existence of a new type of Coronavirus (COVID-19), the situation became complex, since the virus subsequently spread quickly across China and throughout most of the countries around the world (Osman et al., 2022). This scenario understandably engendered high levels of concern among society, as people felt anxious about their health and did not want to become infected, due to the impact on the respiratory system increasing the potential risk of death (Lin et al., 2020).

Thus, in order to deal with this context, the World Health Organization (WHO) characterized this disease as a pandemic (Estrada, 2022), a decision that caused health, social, economic, cultural and, of course, educational repercussions throughout the world (Estrada et al., 2023). Particularly, in the educational field, the virtuality of lessons was established with the purpose of avoiding crowds and reducing the spread of the virus, while giving continuity to the educational service. However, the limitations of connectivity and accessibility of the educational community, that had already been perceived several decades ago, became more critical and made this transition more difficult (Huanca-Arohuanca et al., 2020).

The closure of educational institutions caused by the COVID-19 pandemic and the consequent virtualization significantly affected students, since many of them

did not have the same opportunities, accessibility, or connectivity to continue learning during this period. On the other hand, a lack of support from many parents was noted due to their low sociocultural levels and the weak methodology of some teachers in terms of developing classes both synchronously and asynchronously during the pandemic.

From the first quarter of 2022, the rate of infections and deaths caused by COVID-19 decreased significantly worldwide, mainly due to vaccination campaigns (Taborda et al., 2022). As a result, many activities that had been previously carried out virtually were able to take place in person once more. Thus, in Peru, the Ministry of Education (MINEDU) instructed that classes would also return to face-to-face lessons from March 2022, after following certain biosafety protocols.

However, the work of teachers became significantly more complex after the return to face-to-face classes. This is because the academic performance levels of the students were no longer in line with those established in the National Curriculum for Basic Education. In other words, the learning achieved through virtual classes had been insufficient. For this reason, since March 2022, teachers have been making tremendous efforts, including providing a greater focus and increased support, in an attempt to bring the students up to the standard level. This necessitates an increase in their workload, and much of it must take place outside their working hours. Similarly, the anxiety, discouragement, and frustration of returning to face-to-face work is draining their emotional resources while increasing their levels of mental and emotional tension. In other words, an already recurrent phenomenon among teachers has been growing more acute: stress.

It is well known that teaching is one of the main professions in which employees can develop stress-related symptoms. The job requires a significant amount of time and effort, both inside and outside the classroom, which can lead to neglect of other personal areas due to work overload (El-Sahili, 2011). Additionally, it is a profession that faces constant stressors, as environmental factors such as noise, high numbers of students, behavioral issues, constant friction from educational authorities and parents, among others, generate more complex situations that can significantly affect the quality of life of those who perform this work (Peralta, 2018).

The word "stress" derives from the word "anguish", meaning "pain or affliction". Stress is now considered the disease of the 21st century (Rojas et al., 2021) and is a behavioral response of the body to various internal and external pressures. This is because it is an adaptive and emergency process and therefore crucial for survival (Whiting et al., 2021), as well as being a result of the relationship between the individual and his environment (Casimiro et al., 2020). From the same perspective, it is often argued that stress is the automatic response of an organism to any event that is imposed on it and which feels threatening (Uribe et al., 2015). This response causes the nervous system to be stimulated and the individual reacts involuntarily, producing both psychological (mental) and physiological (physical) changes; this occurs in a particular way between the person and the situation (Alvites, 2019).

There is an interactional stress model that provides a conceptual framework for understanding the antecedents, mediators, and possible consequences of stress (Lazarus & Folkman, 1986). This concept states that stress occurs when environmental interactions are deemed a threat. Thus, different situations and incentives assume the nature of stressors when they are considered dangerous for maintaining wellbeing. The greater the potential perceived environmental harm, the lesser the individual's ability to cope with them and therefore the negative impact of stress is greater.

Likewise, the demands are conceived as environmentally implicit or explicit pressures that cause the person to act in a specific manner. When these demands are not met with the available physical, psychological, social, or material resources, and when the demands conflict with personal goals, beliefs, and expectations, they are a significant source of stress (Vargas & Oros, 2021).

Given the cognitive, psychological, and emotional demands required for the development and fulfillment of various activities, psychosocial risk factors can be developed, which considerably diminish one's state of health (Vieco & Abello, 2014). Although it was initially believed that stress was something exclusive to work organizations, the World Health Organization has recognized that other environmental factors can lead to the breakdown of associated pathologies (Peralta, 2018). Regarding this, Uribe (2010) distinguishes seven psychosomatic factors directly related to stress development: pain, anxiety, depression, sleep disorders, gastric disturbance, neurotic and psychosexual issues; these can significantly affect the physical and mental health of those who suffer from any of them.

Stress negatively impacts teachers' lives, which can reduce life satisfaction and therefore cause a potential reduction in work commitment and job satisfaction, which also negatively affects students (Ahmed, 2019; Ozamiz et al., 2021; Minihan et al., 2022). In addition, the stress has a negative impact on the person's mental health, as it increases the risk of psychological and behavioral disorders (Cladellas et al., 2018).

Therefore, in order to control the experience of stress, a person should try to alter their environment or learn how to modify their ways of reacting to a specific situation. Thus, the attitude of dealing with stress is produced to reach a point of adaptation between the person and the environment (Cardozo, 2016).

Conversely, Lazarus & Folkman (1984) devised the transactional theory of stress, which explains the associated symptoms using a frame of reference. This theory considers Sandín's (1999) process model, which states that people can become stressed depending on their self-perception, perceived social support, and an assessment of the situation. Similarly, other symptoms can occur when suffering from stress, including emotional, behavioral, and physiological responses (psychosomatic symptoms such as pain in the stomach, back, arms, legs, head, or chest; dizziness, shortness of breath, constipation, and indigestion) (González & Landero, 2008).

In Peru, teachers' working conditions are terrible. According to the National Education Council, 60.5% of teachers had no educational materials, which limited their pedagogical practice. They were also working approximately 12 additional hours per week outside of their designated working hours preparing classes and materials, and holding meetings with parents. As for their remuneration, 66.3% of them were dissatisfied with their salaries, causing them to look for alternative jobs to satisfy the basic needs of their families (Estrada & Gallegos, 2021). The factors described above exacerbate these problems and increase the levels of dissatisfaction and demotivation of teachers regarding their work.

In the current context of returning to face-to-face classes, very few studies have been carried out to evaluate the psychosomatic symptoms associated with stress in teachers, which increases the need to investigate this topic and gives it greater relevance. The described finding is aligned with the report by Estrada et al. (2022), who determined that teachers were presenting with psychosomatic symptoms related to stress upon returning to face-to-face classes. The main symptoms were feelings of extreme exhaustion, the feeling of not wanting to get up in the morning, some nervous tics or blinks, and headaches. Similarly, this corresponds to research carried out in Japan, where researchers analyzed the mental health of teachers who were working in person after the reopening of educational institutions; they found that the teachers were suffering from moderate levels of stress and anxiety due to the fear of becoming infected and due to the educational lagging (Wakui et al., 2021). Similarly, in Mexico, an investigation was conducted to evaluate the mental health and psychological impact on teachers and students of the return to face-to-face classes; it was found that there were moderate levels of psychological distress, stress and anxiety due to possible infections and readaptation to this form of teaching (Armenta et al., 2023). On the other hand, some investigations have determined that the presence of psychosomatic symptoms associated with stress is greater in women (Guayasamín & Ramos, 2020; García, 2020) and in those with temporary employment contracts (Estrada & Gallegos, 2020; Alvites, 2019).

Consequently, this research is relevant and topical in the post-pandemic context, since it will allow the Ministry of Education as well as local government to establish national, regional, and local policies that can improve the working conditions in which teachers operate. Furthermore, the management teams of educational institutions will be able to develop preventive and corrective programs to promote the well-being of teachers and their consequent quality of life. In that sense, it should be noted that currently there are very few educational policies that seek to revalue the teaching career. The situation is much more complex in rural areas, where teachers face an adverse context and limitations in terms of infrastructure and logistics.

Therefore, the research problem is: How do teachers in Primary and Secondary education evaluate the psychosomatic symptoms associated with stress after returning to face-to-face classes? Thus, the objective of this research is to evaluate the psychosomatic symptoms associated with stress in Primary and Secondary Education teachers after returning to face-to-face classes.

2. Methodology

2.1 Research Design

The research has a quantitative approach because the data collection was carried out in order to answer the research question and because statistics was applied. A non-experimental design was employed, as the study variable was not intentionally manipulated, but rather observed as it occurred in its natural environment, for later analysis. With respect to the type of research, it was descriptive - cross-sectional, since the properties and characteristics of the study variable were described and because the data collection process was carried out in a single moment (Hernández & Mendoza, 2018).

2.2 Population and Sample

The research was carried out in the city of Cusco (Peru) and included teachers who worked in public educational institutions located in urban and peripheral areas. The population comprised 1377 regular basic education teachers (Primary and Secondary levels). The sample was made up of 301 teachers, who were obtained through probability sampling with a confidence level of 95% and a significance level of 5%. As an inclusion criterion, teachers who worked in educational institutions were considered. On the other hand, as exclusion criteria, teachers who did not agree to participate in the research and those who incompletely developed the data collection instrument were excluded. As can be seen in Table 1, 58.8% of the teachers were female and 41.2% were male. Regarding age, 54.8% were between 21 and 40 years old and 45.2% were between 41 and 64 years old. In terms of their level within the educational system, 60.8% were from Primary Education and 39.2% from Secondary Education. Regarding their labor condition, 67.4% had a permanent employment contract and 32.6% had a temporary one. With regard to their working hours, 63.8% worked in the morning and 36.2% in the afternoon.

Table 1: Sociodemographic characteristics of the sample

Sociodemographic characteristics		n= 301	%
Gender	Male	124	41.2
	Female	177	58.8
Age group	Between 21 and 40 years old	165	54.8
	Between 41 and 64 years old	136	45.2
Level of Educational System	Primary Education	183	60.8
	Secondary Education	118	39.2
Labor condition	Temporary employment contract	98	32.6
	Permanent employment contract	203	67.4
Working hours	Morning	192	63.8
	Afternoon	109	36.2

2.3 Instruments

The technique used was the survey and the instrument of data collection was the Psychosomatic Problems Questionnaire, which was originally designed by Hock (1988) and adapted to the Peruvian context by Mogollón and Muñoz (2018). Its purpose is to evaluate the most recurrent psychosomatic symptoms associated with stress, for which participants must indicate how frequently they have manifested in the last three months. This questionnaire is a single factor and

consists of 12 items to be answered on a Likert-type of scale (0=never, 1=sometimes and 2=always). Its psychometric properties were determined in a previous study through the processes of content validity and reliability (Estrada et al., 2022). In this sense, it was determined that the questionnaire had adequate levels of content validity (Aiken's V= 0.921) and reliability (α= 0.949).

2.4 Procedure
The data collection process was carried out between the months of April and July in the year 2022, when all of the educational institutions of regular basic education were providing in-person educational. For this purpose, the respective authorization was requested from the Local Educational Management Unit of Cusco. After that, the permission of the management staff of each educational institution was requested and a coordination meeting with the teachers was arranged to define the days to apply the in-person data collection instruments.

2.5 Data Analysis
The descriptive analysis was accomplished using the SPSS V.25 Software. Regarding the inferential results, they were obtained using the Student's t-test, which allowed us to determine whether there were statistically significant differences regarding the presence of psychosomatic symptoms associated with stress according to gender, age group, level of educational system, employment status and working hours.

2.6 Ethical Considerations
This study had the endorsement of the institutional ethics committee. Similarly, the teachers were informed about the purpose and nature of the research and provided their informed consent, guaranteeing the anonymous and voluntary nature of their participation.

3. Results
As Figure 1 shows, 45.2% of the teachers perceived that the presence of psychosomatic symptoms associated with stress was moderate, 33.9% perceived that it was low, while 20.9% perceived that it was high. The described finding indicates that the teachers were experiencing certain emotional, cognitive, and physiological reactions that affected their health and were likely caused by the high workload and other demands that were placed upon them following the return to face-to-face classes.
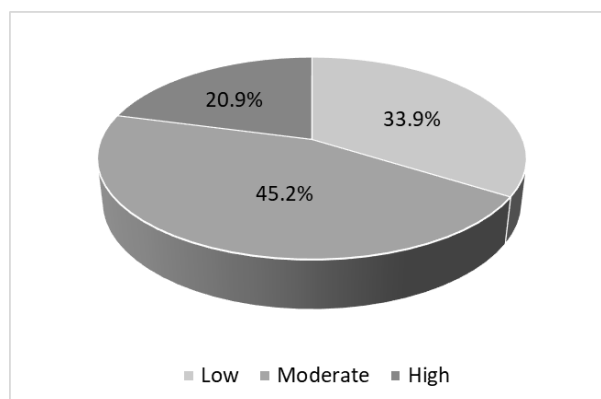
Figure 1: Psychosomatic symptoms associated with stress

Table 2 details the responses of the participants to the Psychosomatic Problems Questionnaire. As illustrated below, the most frequently reported symptoms were the feeling of extreme tiredness, headaches, and the feeling of not wanting to get up in the morning. On the other hand, the less frequent symptoms were the tendency to eat, drink or smoke more than usual, difficult in falling asleep and feelings of pins and needles in different parts of the body.

Table 2: Answers to Psychosomatic Problems Questionnaire

Items	Mean	Standard deviation
1. Difficulty in falling asleep.	0.743	0.332
2. Migraines and headaches.	1.113	0.455
3. Indigestion or gastrointestinal discomfort	0.768	0.394
4. Feeling extremely tired or exhausted.	1.134	0.446
5. Tendency to eat, drink, or smoke more than usual.	0.675	0.221
6. Decrease of sexual interest.	0.831	0.360
7. Shortness of breath or choking sensation.	0.942	0.341
8. Decreased appetite.	0.842	0.402
9. Muscle tremors (nervous tics or blinking).	1.026	0.503
10. Pins and needles in different parts of the body.	0.747	0.298
11. Reluctance to get up in the morning.	1.103	0.679
12. Tendency to sweat or palpitations.	1.052	0.458

Table 3 shows that the arithmetic mean of the general scores among females was higher than those of the males. Similarly, it can be seen that the p-value of the Student's t-test was below the level of significance ($p<0.05$), which indicates that the differences found were statistically significant. For instance, women presented with more psychosomatic symptoms associated with stress compared to men.

Table 3: Comparison of the means of assessment of psychosomatic symptoms associated with stress related to gender of teachers

Variable	Men		Women		t	p
	Mean	Standard deviation	Mean	Standard deviation		
Assessment of psychosomatic symptoms associated with stress	0.843	0.173	1.196	0.204	3.723	0.000*

Note= *Statistically significant difference.

It can be seen from Table 4 that the arithmetic means of the general scores of teachers who were between 21 and 40 years old was slightly higher than those of participants between 41 and 64 years old. However, it is observed that the p-value of the Student's t-test was higher than the significance level (p>0.05), which indicates that the differences found were not statistically significant.

Table 4: Comparison of the means of assessment of psychosomatic symptoms associated with stress related to the age group of the teachers

Variable	Between 21 and 40 years old		Between 41 and 64 years old		t	p
	Mean	Standard deviation	Mean	Standard deviation		
Assessment of psychosomatic symptoms associated with stress	1.072	0.213	0.975	0.188	1.440	0.057

According to Table 5, the arithmetic mean of the general scores of Primary Education teachers was slightly higher than those of Secondary Education teachers. However, it is observed that the p-value of the Student's t-test was higher than the significance level (p>0.05), which indicates that the differences found were not statistically significant.

Table 5: Comparison of the means of the assessment of psychosomatic symptoms associated with stress related to the level of educational system

Variable	Primary Education		Secondary Education		t	p
	Mean	Standard deviation	Mean	Standard deviation		
Assessment of psychosomatic symptoms associated with stress	1.011	0.196	1.002	0.206	4.649	0.083

As can be seen in Table 6, the arithmetic means of the general scores of the temporarily employed teachers was higher than those of the permanently employed teachers. Similarly, it can be seen that the p-value of the Student's t-test was below the level of significance (p<0.05), which indicates that the differences found were statistically significant. Therefore, the teachers who have temporary employment contracts showed more psychosomatic symptoms associated with stress than those with permanent employment contracts.

Table 6: Comparison of the means of assessment of psychosomatic symptoms associated with stress related to the duration of the employment contract of teachers

Variable	Temporary employment contract		Permanent employment contract		t	P
	Mean	Standard deviation	Mean	Standard deviation		
Assessment of psychosomatic symptoms associated with stress	1.254	0.318	1.017	0.253	2.548	0.001

Note= * Statistically significant difference

Table 7, below, shows that the arithmetic means of the general scores of those teachers who worked in the afternoon was higher than the scores of the teachers who worked in the morning. However, it can be seen that the Student's t-test p-value was higher than the significance level (p>0.05), which indicates that the differences found were not statistically significant.

Table 7: Comparison of the means of assessment of psychosomatic symptoms associated with stress related to the teachers' working hours

Variable	Morning		Afternoon		t	P
	Mean	Standard deviation	Mean	Standard deviation		
Assessment of psychosomatic symptoms associated with stress	0.972	0.204	0.955	0.236	8.321	0.094

4. Discussion

In recent years, research focused on the mental health of teachers has increased significantly, since psychosocial variables, such as stress, are determinants of emotional state and psychological well-being, which are necessary factors for adequate performance. However, the return to face-to-face attendance since the health emergency caused by COVID-19 is causing work overload for many teachers. Therefore, the present investigation sought to evaluate the psychosomatic symptoms associated with stress in Primary and Secondary Education teachers after returning to face-to-face classes.

It was found that teachers perceived a moderate presence of psychosomatic symptoms associated with stress. This indicates that the teachers were experiencing emotional, cognitive and physiological reactions that affected their health, caused by the large workload and new demands typical of the post-pandemic context, arising from the return to in-person education. This finding is a cause for concern, since the presence of stress affects not only the work performance of teachers, but also their physical and emotional health, at personal, family, and social levels.

This study's finding aligns with that of Estrada et al. (2022), who determined that teachers were experiencing psychosomatic symptoms related to stress upon returning to face-to-face classes. The main symptoms were feelings of extreme exhaustion, a reluctance to get up in the morning, some nervous tics or blinks,

and headaches. Similarly, research carried out in Japan analyzed the mental health of teachers who were working face-to-face after the reopening of educational institutions and found that they were suffering from moderate levels of stress and anxiety due to the fear of being infected as well as the educational lagging (Wakui et al., 2021). Furthermore, in Mexico, an investigation was carried out to evaluate the mental health and psychological impact on teachers and students of returning to face-to-face classes and reported that there were moderate levels of psychological distress, stress and anxiety due to possible infections and readaptation to this form of teaching (Armenta et al., 2023).

It was also found in the present investigation that the symptoms teachers reported most frequently were those of extreme tiredness, headaches and a feeling of not wanting to get up in the morning. This resulted in a moderate presence of psychosomatic symptoms associated with stress, which affects pedagogical practice and, consequently, educational quality. The result described partially agrees with the report of an investigation carried out in Ecuador, where they determined that the main psychosomatic reactions presented by teachers were irritability, restlessness, headaches, neck pain, back pain, sweating, sleep disorders and gastrointestinal problems (Basurto et al., 2020).

A person who is exposed to stressful situations begins to secrete chemical substances that cause physical symptoms that considerably affect his/her personal well-being due to physiological and psychological changes (Peralta & Villalba, 2019). Among the main symptoms are sleep disorders, pain, anxiety, neurotic disorders, gastric disorders, psychosexual disorders, and depression (Uribe, 2010). The situation could worsen because high levels of stress can also lead to excessive consumption of tobacco, alcohol, and psychoactive substances.

Another interesting finding indicates that women are experiencing more psychosomatic symptoms compared to men. This finding aligns with previous research (Guayasamín & Ramos, 2020; García, 2020) and could be explained by the fact that women may tend to express emotional and physiological manifestations more frequently in stressful contexts (Vidal et al., 2018). On the other hand, in addition to their professional responsibilities, women often assume additional tasks at home, such as family responsibilities, childcare and other domestic activities (Rodríguez et al., 2019).

Another finding of this study is that teachers who have temporary employment contracts presented greater manifestations of psychosomatic symptoms than those with permanent ones. This can be explained by the fact that teachers with permanent employment contracts enjoy job security, which provides them with peace of mind. In contrast, teachers with temporary contracts are often worried about retaining their jobs and finding new employment once their contract period expires. Furthermore, additional undesirable responsibilities may be allotted to temporary employees, which some of the teachers with permanent contracts may refuse to assume. The described finding concurs with that of some investigations carried out in Peru (Estrada & Gallegos, 2020; Alvites, 2019).

It is necessary to specify that no statistically significant differences were found regarding the presence of psychosomatic symptoms associated with stress according to age group, level of the education system or working hours. This is due to the fact that an increase in their workload and the challenges of teaching students with low academic performance are perceived in a similar way by both young and older teachers, as well as by those who teach at different educational levels and those who work at different times of the day. This would explain the homogeneity regarding the teachers' perceptions of the symptoms associated with stress.

Despite the fact that the present investigation addressed a topic associated with mental health, which is very relevant and resulted in important findings, it is necessary to specify some limitations. First, the data obtained from the teachers, who detailed the psychosomatic symptoms associated with stress, were based on a self-reported instrument; therefore, the results could be overestimated or underestimated. Second, the sample size is relatively small and is also homogeneous, which implies that caution must be taken when interpreting the findings. Consequently, it is recommended that future research should use data collection instruments that complement the questionnaire to give greater objectivity to the entire process. Similarly, the size of the sample should be increased, including teachers from rural contexts and diverse sociocultural characteristics.

5. Conclusion

The psychosomatic symptoms associated with stress are considered to be risks for the health, well-being and quality of life of those people who suffer from it. In the present investigation, it was concluded that basic education teachers rated their psychosomatic symptoms associated with stress at a moderate level when they returned to face-to-face classes. The most frequently reported symptoms were feeling extremely tired, headaches, and not wanting to get up in the morning. Furthermore, it was determined that there were statistically significant differences regarding the presence of psychosomatic symptoms associated with stress related to the gender and employment status of the teachers.

To reduce stress levels in teachers, it is crucial that the relevant educational authorities establish national, regional and local policies to improve the working conditions under which teachers must operate. On the other hand, the management teams of educational institutions must develop preventive and corrective programs to promote teacher well-being and consequently protect teachers' quality of life.

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