

# WORK STRESS AND ITS IMPACT ON THE HEALTH OF UNIVERSITY TEACHERS DURING AND POST-COVID-19 PANDEMIC

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## ABSTRACT

Job stress in university teachers is a palpable issue that has increased due to the COVID-19 pandemic, where the way of teaching education was transferred from face-to-face to the virtual environment, forcing the use of virtual tools and programs that were not commonly used, coupled with the change of work space, where the home environment was adapted to meet academic activities, and the event of returning to face-to-face in a post-pandemic environment had a considerable impact on the health of university teachers. **Objective:** To analyze occupational stress and its impact on the health of university teachers during and post-pandemic by COVID-19, according to the literature review between December 2019 to June 2024. **Methodology:** Systematic, descriptive, retrospective review, carried out by means of a documentary review of research with a quantitative, qualitative and mixed approach. **Results:** A bibliographic search yielded 46 articles, mostly from the LA Referencia database (36.95%), Spanish language (82.61%), from Peru (21.74%) and quantitative (76.08%). Stress predisposing factors included work overload and double teaching presence (21.74%); fatigue, exhaustion, progressive loss of energy, fatigue and personal burnout (28.26%); as well as changing psychological behaviors, anxiety states and changes in appetite (21.74%). **Conclusions:** Work stress is more accentuated in the female gender, in the age of 50 to more years, in teachers by contract modality; it is mainly predisposed by work overload and double teaching presence. It frequently has repercussions generating fatigue, exhaustion, progressive loss of energy, fatigue, personal wear and tear, changing psychological behaviors, anxiety states, and changes in appetite.

**Keywords:** "Work stress", "University teachers", "Health" (DeCs).

## I. INTRODUCTION

Work-related stress is the human response to work overload that exceeds the ability to cope and arises in different work environments. The World Health Organization (WHO) specifies that stress in the work environment occurs in the face of work demands and pressures that exceed knowledge and skills, placing themselves above the ability to cope with them, it happens in various work situations that are usually aggravated when workers perceive little support from colleagues and authorities of the institution or organization. as well as weak control of labor processes. (1)

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Focusing on the classification, stress is presented in three types: acute stress, episodic acute stress and chronic stress. The first type of stress is the so-called common stress, which is short-term, and is associated with emotional agony, muscle problems, gastrointestinal problems, among other clinical manifestations such as temporary elevation of blood pressure, increased heart rate, sweating of the palm, palpitations, dizziness, migraine, shortness of breath and chest pain. Episodic acute stress is characterized by occurring more frequently in people who assume various responsibilities beyond their ability to respond, which affects, among other aspects, their interpersonal relationships. Regarding chronic stress, it has the particularity of being exhausting, of generating significant wear and tear on people, leading to the destruction of the body, mind and therefore life. (2)

In line with the above, the International Labor Organization (ILO) pointed out as psychosocial risk factors related to stress, high competitiveness, performance expectations and increased working hours. He stressed that work-related stress is a notorious global problem, in the field of all professions and workers in different countries. Similarly, the increase in stress levels generates adverse alterations in health, which includes both mental disorders and behavioral disorders, among which exhaustion, *burnout*, burnout, burnout, exhaustion, anxiety and depression were pointed out; including physical damage (cardiovascular disease and musculoskeletal disorders), and more commonly behaviors related to alcohol abuse occur, drugs, smoking, unhealthy diet, as well as poor sleep quality, and an increase in work accidents. (3)

In particular, the educational labor scenario has presented drastic changes due to the health situation worldwide, modifying the usual teaching process. The infrastructure of the classrooms became virtual, likewise, the form of interaction of the teacher-student and student-student binomial, went from being face-to-face to the virtual environment. Therefore, it is stipulated that education is going through a silent crisis with serious impacts that will be shown with greater intensity in the future, these impacts will be reflected in personal, labor, social and economic aspects of the actors involved in the educational process, teachers being one of them. (4)

Within the framework of what has been described, the teaching work has been developed with broad psychological demands, low esteem and high double presence, an aspect that generates concern, as one of the main problems that involves the university teacher. Even more so, in times of pandemic, in which remote education has taken center stage, representing the most viable way to continue with the educational process, which cannot be stopped. León argued that educational processes had to be adapted to respond to this new normal, involving the student community and teachers, who experienced the adaptation in the way of learning and teaching, rediscovered skills and abilities to maintain educational practice that, in the face of the new reality, the learning process was focused on virtual spaces, technological resources being the option to continue the training processes. (5) (6)

For its part, the ILO, shortly before the event of the pandemic, determined that working remotely, from home, generates an extension of working hours, overlaps the personal sphere and intensifies work. In addition, risks to health and well-being, related to ergonomic situations linked to psychosocial risk factors, such as stress. In this mention, remote education for teachers becomes more important in the workplace, as it is carried out in the home space, where they also perform functions of the home. (7)

This change represents an aspect that is increasing stress levels in university teachers. Studies such as those of Oros, Vargas and Chemisquy pointed out that, in the occupational field, teachers are at great risk of developing stress and professional deterioration, increasing this with the pandemic situation. For his part, Ferrel mentions that, among the professionals with the greatest predisposition to present stress in their work environment are teachers, and in particular, they can suffer from the "burnout" syndrome. (8) (9)

In this regard, Ramírez and Jamanca, in their study, pointed out that teachers of public universities show a high level of stress, with poor work capacity, supporting once again, the studies that mention teachers in the groups with the highest level of stress. The authors explained that, in the university environment, before the implementation of Law 30220 in 2014, research tasks, social

responsibility actions, report writing, reviews, among others, were added to the academic activities of the university professor, in a practically mandatory way. (10)

In this sense, Fuster-Guillén, Jara-Jara, Ramírez-Asís, Maldonado-Leyva, Norabuena and García explained that the work stress of the university educator is connected to the need for knowledge, in addition to the perception of the insufficient time dedicated to the personal aspect that involves the family, friendship or social plane, related to the difficulty in organizing time, in addition to this, the deficient digital skills to adapt to the current technological demands of university education. Likewise, the development of teaching work in an environment of isolation and uncertainty enhances situations of work stress that not only affect the performance of university teachers, but also significantly affect their health. (11)

In view of the above, Oros, Vargas and Chemisquy indicated that the conditions of isolation and social distancing for teachers turn out to be potential stressors that, linked to other stressors concerning health, contagion, the socioeconomic situation of the country and the loss of physical contact with people in the family circle and close friendship, they represent the fundamental bases for a more significant discomfort. For their part, Galvis et al pointed out that the Covid-19 pandemic caused the work circumstances of teachers to undergo important changes and are accompanied by the increase in working hours, immobility, compliance with administrative activities and the respective support to students who require it, causing physical and mental overload for university teachers, which consequently affects the health of these professionals. (8) (12)

Thus, stress is having an impact on the health of university teachers, one of the studies that supports the above is Tacca and Tacca, who determined that the repercussions of stress on health are reflected in clinical manifestations such as tiredness, difficulty falling asleep, headache, deficit in attention, concentration and changes in the desire to eat. They emphasized that the presence of this symptomatology is indicative of stress, which harms health, and consequently, the professional performance of university teachers. (13)

In this sense, it is important to address Orem's theory of self-care, poured into the work environment of university teachers, strengthens self-responsibility for the care of physical, mental and social health, in key moments such as the pandemic, which represents a challenge for the development of teaching work in a context of health crisis. which entails consequences at the multidimensional level of people, specifically university teachers. (14)

Along these lines, the theory of the management of unpleasant symptoms, by Lenz et al., provides an opening to a better understanding of the signs and symptoms experienced in work stress and the repercussions it has on the health of university professors, by focusing on an analysis and integration of knowledge regarding symptoms experienced in the disease. making it clear that, through physiological, psychological and situational factors, the impact on the development of the individual's different activities originates; where dimensions such as anguish, degree of discomfort due to the experience of the symptom; the quality, coordination between the appearance of the symptom and a specific activity; The duration, frequency in which a symptom occurs, and the intensity, severity or strength of the symptom, are key aspects to understand the experience of the disease and generate effective nursing care interventions aimed at reducing or managing the negative effects of work stress. (15)

Similarly, Roy's adaptation model stands out in importance, which involves the person and their environment, establishes an assessment of behaviors that can generate work stress, through four adaptive modes. The first, physiological mode of adaptation, observable in physiological behaviors and reactions where a certain degree of work stress is manifested, and it is possible to establish interventions that contribute to their recognition and management of reactions. The second, mode of adaptation of the group self-concept, addresses psychological and spiritual aspects including self-esteem, a determinant of the availability of resources to face situations of work stress. Resources that must be identified and strengthened with the support of the nursing professional. The third, mode of adaptation of role performance, focused on the role of the person in society, here it is necessary to identify what represents overload, irreplaceable roles and establish priorities.

Finally, a mode of adaptation of interdependence, focused on the integrity of relationships, where the identification of difficulties, establishing support systems of the social context and care resources, are essential to carry out effective nursing interventions. (14)

As indicated, the performance of teaching work in this time of pandemic must assume various challenges that are accompanied by situations that generate stress and have a punctual impact on the health of university teachers. This global health situation has generated uncertainty within the educational field, related to the transformation that arose regarding the development of academic work, which progressively and based on compliance with protocols is returning to face-to-face, thus readapting the educational system according to the demands of current conditions. This is an obvious factor that increases the stress levels of this professional group. In this context, it is essential to carry out a detailed compilation of information that broadens the horizons of knowledge about work-related stress and its impact on the health of university teachers during the pandemic and post-pandemic time. The above guides the formulation of the following question: How does work-related stress affect the health of university professors during and after the COVID-19 pandemic, according to the bibliographic review between December 2019 and June 2024?

The above details justify the relevance of this work, which is carried out with the purpose of developing a reflective process aimed at expanding knowledge about work-related stress and its impact on the health of university teachers during and after the pandemic. This work provides academic benefit, for being a contribution to the knowledge of this topic, as a result of the respective analysis of the information collected that will become an important reference. In the same way, it has social benefit, for generating information bases to implement strategies that facilitate the adequate coping of the stress experienced by university teachers, even more so in the current conditions that are experienced within the educational context.

## **II. OBJECTIVES**

### **General Objective**

To analyze work-related stress and its impact on the health of university professors during and after the COVID-19 pandemic, according to the bibliographic review between December 2019 and June 2024.

### **Specific Objectives**

- To characterize the literature reviews according to year, language, country and type of study.
- To identify predisposing factors of work stress of university professors during and after the COVID-19 pandemic.
- To identify the impact of work-related stress on the health of university teachers during and after the COVID-19 pandemic.

## **III. MATERIALS AND METHODS**

This study represents a bibliographic review based on the design of a retrospective documentary study, it is developed involving the occupational health area of university professors with the aim of carrying out an exploration based on various relevant and reliable bibliographic sources to respond and evidence the problematic situation related to stress and its impact on the health of university professors during and after the COVID-19 pandemic.

The publications were selected under inclusion criteria such as: articles from indexed journals, publications considered from December 2019 to June 2024, mainly quantitative studies with a non-experimental, descriptive, cross-sectional, correlational and associative design; qualitative research with phenomenological, descriptive and instrumental case design, and mixed research. The exclusion criteria considered incomplete articles, undergraduate theses, reports of experiences and clinical cases.

Information was searched in the DOAJ, LA Referencia, Pubmed.gov, Dialnet, Scielo, Alicia, EBSCOhost and Google Scholar databases. It was carried out using the Boolean operators AND and OR, with the use of the following keywords (DeCS) "Stress", "Work stress", "Stress in

university teachers", "Stress and health", "Work stress and health", "Stress and pandemic", "Teachers", "Professional stress", "Stress related to the profession", "Work-related stress", "Stress of the workplace", "Post-pandemic stress", placing 238 articles in the search. which were selected by title, objectives, results and year, discarding those that did not meet the purpose and nature of this research. After the exclusion, 46 articles remained.

#### IV. RESULTS

This section details the results characterized with respect to the scientific production acquired through the search and identification of relevant scientific articles, which make up the database presented in Annexes and that were found using search engines such as: LA Referencia (36.95%), DOAJ (21.74%), Pubmed.gov and Scielo (10.87% each), Dialnet (8.70%), Alicia and EBSCOhost (4.35% respectively). and Google Scholar (2.17%) (Table 1).

Regarding the bibliographic review according to year, language, country and type of study (Table 2), it was found that in years of publication of the bibliographic collection considered, 10.87% corresponds to the year 2019, 26.09% is from 2020, 30.43% corresponds to 2021, 13.04% belongs to the year 2022, 8.70% is from the year 2023 and 10.87% is from 2024. As for the language, 82.61% is in Spanish and 17.39% in English. As for the country, from Peru it is 21.74%, from Colombia 13.04%, Spain 10.87%, from Argentina, Chile and Ecuador it is 8.70% respectively, Costa Rica and Mexico with 4.35% each; from Latin America and the Caribbean, Canada, Cuba, the United States, the Philippines, Honduras, Poland, Romania and Uruguay are at a percentage of 2.17% respectively. Regarding the type of study, 76.08% of the studies were quantitative, descriptive and cross-sectional, 15.22% were qualitative and 8.70% were mixed.

Regarding the identification of predisposing factors of work stress in university teachers during and after the COVID-19 pandemic (Table 3), the academic factors related to work overload and double presence, referring to teaching work, family and domestic functions obtained 21.74%, the use of new technologies for teaching-learning was positioned with 15.22% and the difficulty in adapting to virtual classes was evidenced in 8.70% of the studies Revised.

As sociodemographic factors (Table 3), age 50 years or older was recorded in 6.52% of studies, 4.35% specified an age period of 41 to 50 years, while for the age range between 31 and 40 years it is 2.17%. The female gender was 6.52%, and the labor modality in the condition of contract acquired 8.70%.

Regarding psychosocial factors (Table 3), the decrease in rest time and substantial decrease in personal dedication was observed in 10.87% of the studies; In addition, inappropriate conditions of the work environment (home) were specified in 6.52%, while family-work and work-family interference and increased tasks of care and educational accompaniment of children resulted in 4.35%, respectively.

Regarding the impact of work-related stress on the health of university professors during and after the COVID-19 pandemic (Table 4), the physical manifestations included tiredness, exhaustion, progressive loss of energy, fatigue and personal exhaustion in 28.26%; pain, muscle contractures, body discomfort and headache were also mentioned in 15.22% of the studies reviewed.

In relation to psychoemotional manifestations (Table 4), changing psychological behaviors, states of anxiety and changes in appetite were recorded with a percentage of 21.74%; irritability, insomnia, nervousness, difficulties in family life were mentioned in 17.39%; emotional weakness, dissatisfaction with achievement, perception of poor work capacity in 10.87%; and deficits in attention, concentration, and increased forgetting were specified in 6.52% of the selected studies (Table 4).

#### V. DISCUSSION

Evidence of work stress and its predisposing factors has been recorded in university teachers, which contributed to the search for the different scientific articles and their contribution is related according to the objectives set out in this study.

The analysis of the work stress of university teachers is a priority issue within the field of education and health, because it involves a main actor in the educational process, who has had to move almost immediately to a different and very unusual modality. In this context, it is relevant to identify predisposing factors, among which academic factors, sociodemographic factors and psychosocial factors stand out. In this aspect, within the academic factors, work overload and double teaching presence predominated. (6,8,12,13,16–21)

In this sense, Rodríguez and Viera (22) highlighted as one of the main stressors the volume of work that teachers must develop as part of their university academic work. Likewise, Fajardo, et al. They specified the relevance of examining the workload of civil servants, such as university professors, since allocating part of the free time for work activities can affect the quality of life. For her part, Gómez pointed to inequity and overload as outstanding psychosocial risks, with emotional support being a significant resource to counteract it. (23) (24) Bada-Quispe, Salas-Sánchez, Castillo-Saavedra, Arroyo-Rosales and Carbonell-García, pointed out the importance of promoting an adequate organizational climate in educational institutions; that it is inclusive and sustainable over time to mitigate situations of stress that arise daily in the teaching workday. (25)

In view of this mention, Celestino and Chamba (26) considered that stressors are reduced by job satisfaction, for which holistic interventions are needed in the academic field that lead to experiencing satisfaction with life. Pujol-Cols emphasized the design of techniques that contribute to attenuating labor demands and expanding those resources aimed at preserving the occupational health of university professors. Forero revealed that the change to the virtual modality, without prior preparation, generated various problems in the university professor, among which he found difficulties in the voice and stress. (27) (28)

Likewise, in the second mention was found the use of new technologies for teaching-learning, in that line, Casali and Torres indicated that a significant majority of teachers indicated the increase in their time dedicated to teaching, to adapt to the use of videoconferencing platforms and tools. Sánchez (6,8,29) (18) (30) asserted that technology is a generator of stress and that it is related to the personal and work factors of the university professor. Dionisio highlighted the importance of training processes, continuous training and the use of technological tools in a virtual context as an important aspect of the teacher's professional development. Salinas revealed that teleworking due to the covid-19 pandemic mostly caused a mild level of work stress and a medium level of work exhaustion in university professors. (31) (32)

As a final predisposing academic factor is the difficulty in adapting to virtual classes (18,19,21,33) . For their part, Ortega, et al., supported the changes and adaptations made in terms of methodology and procedure for evaluating teachers, which contributed to counteracting the highly complex adverse situation. (34)

With regard to sociodemographic factors, age, gender and work modality stood out. The age was mostly in the age range of 50 years and older. In terms of gender, the female gender was more predominant. For their part, Tacca and Tacca (35,36) (22,33–37) (13) , in their study, established that a higher percentage of women experience problems falling asleep, headache, difficulty concentrating, appetite alterations, irritability and anxiety, which are clear manifestations of stress conditions. Cruz found that the factors associated with a higher probability of high stress are related to being the head of the household, age and quality of sleep. Ruta acknowledged that poor sleep quality generates reduced concentration levels with difficulties in carrying out work activities. (40) (41)

Regarding the work modality, they specified that teachers present greater stress in a contract modality, because it does not represent job stability. This result is supported by Ozamiz-Etxebarria, Berasategi, Idoiaga and Dosil, who considered that the duration of the contract is related to the stress levels of university teachers. (13,19) (38)

Regarding the predisposing psychosocial factors, he highlighted inappropriate conditions of the work environment. In this sense, Galvis, et al., considered that doing work within the personal and family space causes the use of additional time to comply with academic-work activities,

subtracting free time, generating states of stress in the body and mind, due to the amount of work that exists. (8,16,20) (12)

For their part, Riquelme, et al. (42), expressed that the improvements in the working conditions of female academics reduce the level of stress that occurs in the work context. In this sense, Acosta, et al. He established that it is necessary to recognize the importance of the technological infrastructure of a university and the resilience capacity of its actors, in emergency situations that require physical social distancing, he also considered that in the capacity for resilience and the degree of satisfaction of both students and educators at the university level, the educational process is currently addressed with virtual mediation. (43)

Also, the interference between family-work and work-family was highlighted. Another factor is the increase in tasks of care and educational accompaniment to children, Méndez indicated the relevance of the adaptation to the new normal, even more so in the education system we are facing. As described, the panorama of the demands of the work and home plane, which must be met by the group of university professors, constitutes an aspect that raises the stress levels in the group in question. (17) (18) (44)

The factor of decrease in rest time and substantial decrease in personal dedication was significantly evidenced in the review carried out. In this regard, it is relevant to take into account the importance of enjoying rest time and time dedicated to the personal level of university professors, which is an essential part of the health of university teachers. (21,27)

Regarding the impact of stress on the health of university teachers, it was recorded in the physical manifestations, predominantly tiredness, exhaustion, progressive loss of energy, fatigue and personal exhaustion. These repercussions are very visible in university teachers who suffer from work stress. Secondly, pain, muscle contractures, body discomfort and headache were recorded, which have been considered in various studies. (11,13,18,21,27,40–48) (8,13,18,21)

In this regard, Pujol-Cols said that a large proportion of teachers perceive their work as having high demands in cognitive and emotional aspects, presenting a high prevalence of physical and emotional exhaustion. Likewise, Guicamaigua (27) (48) evidenced a significant percentage (49%) of female participants, in addition to high scores of emotional exhaustion (49%) and depersonalization (20%). Under this mention, Cuadrado et al. They argued that in university professors emotional exhaustion increases due to the increase in the degree of emotional dissonance due to high emotional demands, but self-efficacy turns out to be a protective factor that buffers against the negative effect caused by emotional dissonance. Mohamed-Amar and Mohamed-Amar (49) (50) indicated a high prevalence of emotional exhaustion and depersonalization and a lower prevalence of personal fulfillment.

Regarding the psycho-emotional manifestations, the changing psychological behavior, the state of anxiety, and changes in appetite stand out significantly, in the same way, irritability, insomnia, nervousness and difficulties in family life were evidenced in second place (12,19,29,36,38,51,52) (17,20,27,42,44,53), in third place, emotional weakness, dissatisfaction with achievement, perception of poor work capacity, Finally, the deficit in attention, concentration and increased forgetfulness was mentioned. Tejeda specified the presence of symptoms such as irritation, anger, intolerance, headaches, sleep disorders in university teachers and that despite this, the teaching work did not stop. Maureira et al. (10,11,35,46,47) (8,13,44) (54) (55) He specified that regarding emotional stress related to stress, emotional clarity presented a high score and emotional repair was obtained a low score.

This evidence reveals the importance of reducing the factors that predispose to the presence of stress; in such a way, that the manifestations in the physical and psychoemotional health of teachers who work in universities are limited.

## VI. CONCLUSIONS

- Work-related stress has an impact on the health of university teachers and intensified even more in the covid-19 pandemic, as different related factors were incorporated and

those that already existed before the pandemic event were accentuated.

- The predisposing factors identified were, firstly, the academic factor, where work overload with the double presence of teachers stood out; secondly, the sociodemographic factor, where the age of 50 or older, the female gender and the contractual employment status predominate. The third place mentions psychosocial factors, highlighting the inappropriate conditions of the work environment when carried out at home where household chores must also be performed.
- Occupational stress has an important impact on the health of university teachers and both physical and psychoemotional manifestations prevail. In the physical manifestations, tiredness, exhaustion, progressive loss of energy, fatigue, and personal exhaustion stand out. Regarding the psycho-emotional manifestations, changing psychological behavior, anxiety and changes in appetite stand out, followed by irritability, insomnia, nervousness, difficulties in family life, emotional weakness, dissatisfaction with achievement and perception of poor work capacity.

## ANNEXES

### VII. TABLES

**Table 1.** Characterization of bibliographic reviews according to database.

Seeker	N°	%
THE Reference	17	36,95
DOAJ	10	21,74
Pubmed.gov	5	10,87
Scielo	5	10,87
Dialnet	4	8,70
Alicia	2	4,35
EBSCOhost	2	4,35
Google Scholar	1	2,17
<b>Total</b>	<b>46</b>	<b>100,00</b>

**Table 2.** Characterization of bibliographic reviews according to year, language, country and type of study.

Characteristics		N°	%
<b>Year</b>	2019	5	10,87
	2020	12	26,09
	2021	14	30,43
	2022	6	13,04
	2023	4	8,70
	2024	5	10,87
<b>Language</b>	Spanish	38	82,61
	English	8	17,39
<b>Country</b>	Peru	10	21,74
	Colombia	6	13,04
	Spain	5	10,87
	Argentina	4	8,70
	Chile	4	8,70
	Ecuador	4	8,70
	Costa Rica	2	4,35
	Mexico	2	4,35



	Latin America and the Caribbean	1	2,17
	Canada	1	2,17
	Cuba	1	2,17
	USA	1	2,17
	Philippines	1	2,17
	Honduras	1	2,17
	Poland	1	2,17
	Romania	1	2,17
	Uruguay	1	2,17
<b>Type of study</b>	Quantitative	35	76,08
	Qualitative	7	15,22
	Mixed	4	8,70

**Table 3.** Predisposing factors of occupational stress in university teachers.

<b>Predisposing factors</b>		<b>N°</b>	<b>%</b>
<b>Academic factors</b>	Work overload and double teaching presence.	10	21,74
	Use of new technologies for teaching and learning.	7	15,22
	Difficulty in adapting to virtual classes.	4	8,70
<b>Sociodemographic factors</b>	<b>Age</b>		
	31- 40	1	2,17
	41-50 years	2	4,35
	50 and over	3	6,52
	<b>Gender</b>		
	Female	3	6,52
<b>Psychosocial factors</b>	<b>Work modality</b>		
	Hired	4	8,70
	Reduction in rest time and substantial decrease in personal dedication.	5	10,87
	Inappropriate conditions of the work environment (Home).	3	6,52
	Family-work and work-family interference.	2	4,35
	Increase in tasks of care and educational accompaniment for children.	2	4,35
<b>Total</b>		<b>46</b>	<b>100,00</b>

**Table 4.** Impact of work-related stress on the health of university teachers.

<b>Impact of stress</b>	<b>N°</b>	<b>%</b>
<b>Physical manifestations</b>		
Tiredness, exhaustion, progressive loss of energy, fatigue, and personal exhaustion.	13	28,26
Pain, muscle contractures, body discomfort and headache.	7	15,22

### Psycho-emotional manifestations

Changing psychological behaviors, states of anxiety and changes in appetite.	10	21,74
Irritability, insomnia, nervousness, difficulties in family life.	8	17,39
Emotional weakness, dissatisfaction with achievement, perception of poor work capacity.	5	10,87
Deficit in attention, concentration and increased forgetfulness.	3	6,52
<b>Total</b>	<b>46</b>	<b>100,00</b>

## VIII. BIBLIOGRAPHIC REFERENCES

1. World Health Organization. Occupational health: stress in the workplace. WHO. 2020; 1–2.
2. American Psychological Association. Stress. 2021 [cited 2021 Sep 1]. p. 1–5 The different types of stress. Available from: <https://www.apa.org/topics/stress/tipos>
3. International Labor Organization. Stress at work: a collective challenge. Vol. 9, People Management and Technology. 2016. 68 p.
4. di Gropello E. World Bank Magazine. 2020. p. 4–7 Education in Latin America is facing a silent crisis, which over time will become strident. Available from: <https://www.bancomundial.org/es/news/feature/2020/06/01/covid19-coronavirus-educacion-america-latina>
5. García MM, Iglesias S, Saleta M, Romay J. Psychosocial risks in university teaching staff: diagnosis and prevention. Journal of Psychology of Work and Organizations. 2016; 32(3):173–82.
6. León GL. Academic and psychosocial implications of university virtual pedagogical practice. Praxis Investigativa ReDIE: electronic journal of the Durango Network of Educational Researchers [Internet]. 2020; 13:66–82. Available from: <https://dialnet.unirioja.es/servlet/articulo?codigo=7907316>
7. International Labor Organization. Working anytime, anywhere: consequences in the workplace. International Labour Office and the European Foundation. 2019. 72 p.
8. Oros L, Vargas Rubilar N, Chemisquy S. Teaching stressors in times of pandemic: An instrument for their exploration. Interamerican Journal of Psychology. 2020; 54(3).
9. Ferrel R. Burnout syndrome in university teachers. Duazary. 2010; 7(1):15–28.
10. Ramírez Asís EH, Jamanca Anaya RP. Stress and perception of the ability to work in teachers of a public university. Delectus. 2020; 3(2):78–89.
11. Fuster-Guillén D, Jara-Jara N, Ramírez-Asís E, Maldonado-Leyva H, Norabuena R, García A. Occupational burnout in university teachers using the confirmatory factor model. Purposes and Representations [online journal] 2019 [accessed October 26, 2020]; 7(3): 198 - 230. Purposes and Representations [Internet]. 2019; 7(3):198–214. Available from: <http://www.scielo.org.pe/pdf/pyr/v7n3/a08v7n3.pdf>
12. Galvis López G, Vásquez A, Caviativa YP, Ospina PA, Chaves VT, Carreño LM, et al. Tensions and realities of university teachers in the face of the Covid-19 pandemic. European Journal of Health Research. 2021; 1–13.
13. Tacca Huamán DR, Tacca Huamán AL. Psychosocial risk factors and perceived stress in university teachers. Purposes and Representations. 2019; 7(3):323.
14. Ayuso Murillo Diego, Tejedor Muñoz L, Serrano Gil A. Family and community nursing. 2nd ed. Spain: Ediciones Díaz de Santos; 2018. 1–510 p.
15. Smith MJ, Lierh PR. Middle-range theory for nursing [Internet]. 4th ed. Smith Mary Jane, Liehr Patricia, editors. New York: Springer Publishing Company, LLC; 2018 [cited 2023 Feb 14]. 1–469 p. Available from: <https://books.google.com/books?hl=es&lr=&id=XN1JDwAAQBAJ&oi=fnd&pg=PP1&ots=healGspXuz&sig=w5jfEXbUiRajgdRy4N7zDSHEqKY>

16. Alvites-Huamani CG. Teacher stress and psychosocial factors in teachers in Latin America, North America and Europe. *Purposes and Representations*. 2019 Oct 3; 7(3):141.
17. Lemos M, Calle-González G, Roldan-Rojo T, Valencia M, Orejuela JJ, Roman-Calderon JP. Psychosocial factors associated with stress in Colombian university professors. *Diversitas*. 2019 Jan 1; 15(1):59–70.
18. Casali A, Torres D. Impact of COVID-19 on Argentine university teachers: change of practices, difficulties and increased stress. *Ibero-American Journal of Technology in Education and Education in Technology*. 2021 Apr 1; (28):E53.
19. Jorquera Gutiérrez R, Herrera Gallardo F. Mental health in officials of a Chilean university: challenges in the context of COVID-19. *Digital Journal of Research in University Teaching*. 2020 Dec 4; 14(2):e1310.
20. Seijas-Solano DE. Psychosocial risks, occupational stress and burnout syndrome in university workers from a bioanalysis school. *Journal of Public Health*. 2019 Jan 1; 21(1):102–8.
21. Bravo Villa N, Guillermo J, Sepúlveda M, Burgos AV. Teleworking and work stress for teachers in times of COVID-19 [Internet]. Available from: <http://medisur.sld.cu/index.php/medisur/article/view/4732>
22. Rodríguez L, Viera A. Sources of stress in Mexican academics of higher level [Internet]. 2021. Available from: <https://orcid.org/0000-0003-2479-9227>
23. Fajardo A, Gonzales Y, Hernández J. Quality of life of workers of a public university [Internet]. Vol. 23, *Cuban Journal of Health and Work*. 2022. Available from: <https://orcid.org/0000-0001-5625-7508>
24. Gómez Domínguez V. Psychosocial risks, burnout and occupational health in teachers during the COVID-19 pandemic. [Spain]: Universitat de València; 2024.
25. Bada-Quispe O, Salas-Sánchez RM, Castillo-Saavedra E, Arroyo-Rosales E, Carbonell-García C. Work stress and organizational climate in Peruvian teachers. *Medisur [online journal]* [Internet]. 2020; 18(6):1138–44. Available from: <http://medisur.sld.cu/index.php/medisur/article/view/4621>
26. Celestino Montenegro K, Villagaray Chamba A. Burnout, physical activity as predictors of life satisfaction: the mediating role of job satisfaction in Peruvian university teachers. [Peru]: Universidad Peruana Unión; 2024.
27. Pujol-Cols L. Labor demands and burnout: A descriptive study in Argentine teachers [Internet]. 2021 [cited 2022 May 2]. Available from: [https://www.lareferencia.info/vufind/Record/AR\\_9a0799482a154bc65bf000ae444eebd8/Ddescription#tabnav](https://www.lareferencia.info/vufind/Record/AR_9a0799482a154bc65bf000ae444eebd8/Ddescription#tabnav)
28. Forero Suárez LL. Program for the promotion of vocal health and low levels of stress in the workplace in university teachers [Master's Thesis]. [Bogotá]: Universidad Nacional de Colombia; 2022.
29. Hordatt C, Haynes T. Latin American and Caribbean Teachers' Transition to Online Teaching During the COVID-19 Pandemic: Challenges, Changes and Lessons Learned (Bilingual). *PIXEL-BIT Media and Education Journal* [Internet]. 2021; 61 (MEDIA AND EDUCATION):131–63. Available from: <https://revistapixelbit.com>
30. Sánchez Arana, J. Factors associated with technostress in workers of a private university [Master's Thesis]. [Trujillo]: Antenor Orrego Private University; 2023.
31. Dionisio Escalante ER, Palacios Garay JP, Zavaleta Oliver JM, Ventura Orbegoso CO, Damian Nuñez EF. Post-pandemic prevention strategies for burnout syndrome in Peruvian university teachers. *DIALNET*. 2023; 3(1):1–14.
32. Salinas DB. Impact of teleworking on the work stress of university teachers due to covid-19. *Scielo*. 2024 Jun; 14(28):1–10.
33. Vaillant D, Rodríguez-Zidán E, Questa-Torterolo M. Pandemic and Teacher's Perceptions About Emergency Remote Teaching: The Uruguayan Case. *Revista Electronica Educare*. 2022 Jan 1; 26(1).
34. Ortega Ortigoza D, Rodríguez Rodríguez J, Mateos Inchaurredo A. Educación superior y la COVID-19: adaptación metodológica y evaluación online en dos universidades de Barcelona Higher education and COVID-19: methodological adaptation and online evaluation at two universities in Barcelona. Available from: <https://doi.org/10.19083/ridu.2021.1275>
35. Huerta R, Maguiña M, Ramirez E, Henostroza P. Perceived occupational stress and work

- capacity in elderly Peruvian university teachers. *San Gregorio Magazine* [Internet]. 2021; 45:146–57. Available from: <https://orcid.org/0000-0002-9918-7607>
36. Valle V, Lévano C, Ayca I, Condori W, Álvarez R. Psychological impact of the COVID-19 pandemic on Health Sciences teachers at a Public University of Tacna, 2021. *HHUT Medical Journal*. 2021; 01:19–25.
37. Oducado RM, Rabacal J, Moralista R, Tamdang K. Perceived Stress Due COVID-19 Pandemic Among Employed Professional Teachers. *IJERI: International Journal of Educational Research and Innovation*. 2020 Dec 2; (15):305–16.
38. Ozamiz-Etxebarria N, Berasategi Santxo N, Idoiaga Mondragon N, Dosil Santamaría M. The Psychological State of Teachers During the COVID-19 Crisis: The Challenge of Returning to Face-to-Face Teaching. *Front Psychol*. 2021 Jan 12;11.
39. Lizano Lizano L, Sánchez Alfaro R. Stress levels in teaching staff of the departments of Social Sciences and Education of the University of Costa Rica, Western Campus in the face of the COVID-19 situation. *Wimb Lu*. 2021 Dec 17; 17(1):7–22.
40. Cruz Ausejo RL. Physical activity and perceived stress in university professors working remotely in the context of the SARS-CoV-2 pandemic [Master's Thesis]. [Lima]: Universidad Científica del Sur; 2023.
41. Sanabria BO Route. Socioeconomic consequences of sleep, stress and voice problems associated with the working conditions of university professors [Master's Thesis]. [Bogotá]: Universidad Nacional de Colombia.; 2022.
42. Riquelme A, Soto M, Torres M, Luengo C. Working conditions and work stress in university academic mothers. *Cuban Journal of Health and Work*. 2019; 3:26–34.
43. Acosta C, Ortega D and, Díaz Y. Face-to-face education with virtual mediation - an experience of Honduras in times of COVID-19. *RIDU-Digital Journal of Research in University Teaching* [Internet]. 2021 [cited 2022 May 21]; 14:1–14. Available from: <https://revistas.upc.edu.pe/index.php/docencia/article/view/1229/1127>
44. Méndez Carpio CR. Procrastination and increased stress in teachers and university students in the face of online education. *Scientific Journal*. 2021 May 5; 6(20):62–78.
45. Panisoara IO, Lazar I, Panisoara G, Chirca R, Ursu AS. Motivation and continuance intention towards online instruction among teachers during the COVID-19 pandemic: The mediating effect of burnout and technostress. *Int J Environ Res Public Health*. 2020 Nov 1; 17(21):1–29.
46. Sokal L, Trudel LE, Babb J. Canadian teachers' attitudes toward change, efficacy, and burnout during the COVID-19 pandemic. *International Journal of Educational Research Open*. 2020;1:100016.
47. Lal A, Tharyan A, Tharyan P. The prevalence, determinants and the role of empathy and religious or spiritual beliefs on job stress, job satisfaction, coping, burnout, and mental health in medical and surgical faculty of a teaching hospital: A cross-sectional survey. *Revue de Medecine Interne*. 2020 Apr 1; 41(4):232–40.
48. Guilcamagua Quilachamin KR. Prevalence of burnout syndrome and depression in teachers of a career at the central technical university higher institute in Quito [Master's Thesis]. [Quito]: UNIVERSIDAD REGIONAL AUTÓNOMA DE LOS ANDES; 2023.
49. Cuadrado E, Jiménez-Rosa M, Ruiz-García M, Tabernero C. Mediating and Moderating Variables in the Relationship Between Emotional Demands and Teachers' Emotional Exhaustion. *Journal of Work and Organizational Psychology*. 2024 Apr 23; 40(1):31–9.
50. Mohamed-Amar R, Mohamed-Amar H. Burnout syndrome in university teachers in times of COVID-19. *RIHUMSO*. 2022 Nov; 22(11):1–20.
51. Jakubowski TD, Sitko-Dominik MM. Teachers' mental health during the first two waves of the COVID-19 pandemic in Poland. *PLoS One*. 2021 Sep 1; 16(9 September).
52. Camacho R, Gaspar M, Rivas C. Burnout syndrome and work stress due to COVID-19 in Ecuadorian university teachers. *Journal of the Community and Health Research Group* [Internet]. 2021; 6:166–70. Available from: <http://erevistas.saber.ula.ve/gicos>
53. Santana-López BN, Santana-Padilla YG, Santana-Cabrera EG, Ruiz-Rodríguez GR, González-Martín JM, Santana-Cabrera L. Teachers' attitudes and knowledge about the COVID-19 pandemic in the Canary Islands. *Rev Peru Med Exp Salud Publica*. 2021; 38(1):64–9.
54. Tejada Pedraza IK. Professional burnout syndrome and its impact on the teaching practice of educators of the Faculty of Social Sciences, Humanities and Arts of a higher education

- institution in Bucaramanga, Colombia [Master's Thesis]. [Bucaramanga]: Autonomous University of Bucaramanga; 2022.
55. Maureira-Roldán G, Jería-Pérez F, Maureira-Cid F. Relationship between work stress and emotional skills in university teachers of Physical Education. *Journal of Physical Activity Sciences*. 2024; 25(1):1–13.