



## Incidence of telework among university teachers during the COVID-19 pandemic

## Incidencia del teletrabajo en docentes universitarios durante la pandemia COVID-19

Jane de Lourdes Toro-Toro  
ua.janetoro@uniandes.edu.ec

Universidad Regional Autónoma de Los Andes. UNIANDES, Ambato – Ecuador  
<https://orcid.org/0000-0002-9287-8747>

### ABSTRACT

The present investigation presents as objective to analyze the incidence of the telework in university teachers of the Superior Polytechnic School of Chimborazo (ESPOCH), Ecuador, during the pandemic COVID-19. The study was descriptive, non-experimental, cross-sectional, in a population of 92 workers. The psychosocial risk factors identified in this study, both at the extra-work and intra-work level, revolve around the amount of time away from work, communication, interpersonal relationships, influence of the extra-work environment on work, control over work, rewards, work demands, leadership and social relations, making the work more demanding and strenuous, generating a greater psychosocial risk and negatively affecting general and mental health.

**Descriptors:** mental stress; psychological effects; emotions. (Source: UNESCO Thesaurus).

### RESUMEN

La actual investigación presenta como objetivo analizar la incidencia del teletrabajo en docentes universitarios de la Escuela Superior Politécnica de Chimborazo (ESPOCH), Ecuador, durante la pandemia COVID-19. De tipo descriptivo no experimental transversal, en una población de 92 trabajadores. Los factores psicosociales de riesgo identificados en este estudio tanto a nivel extralaboral como intralaboral, giran en torno a la cantidad de tiempo fuera del trabajo, comunicación, relaciones interpersonales, influencia del entorno extralaboral en el trabajo, control sobre el trabajo, recompensas, demanda del trabajo, liderazgo y relaciones sociales haciendo del trabajo más demandante y esforzado, generando un mayor riesgo psicosocial y afectando negativamente la salud general y mental.

**Descriptor:** estrés mental; efectos psicológicos; afectividad. (Fuente: Tesoro UNESCO).

Received: 06/16/2022. Revised: 06/28/2022. Approved: 07/27/2022. Published: 01/10/2022.

Research articles section



## INTRODUCTION

The occupational risks to which teachers are exposed during teleworking, we can mention psychosocial risks associated with mental health; ergonomic risks associated with musculoskeletal disorders, while during the pandemic by COVID-19, there was an increase in working hours and work overload, teachers say they feel tired physically and mentally, many of them have presented ailments and discomfort for the constant time spent sitting in front of their computers (Montealegre-Ramón, *et al.* 2022).

Likewise; it was found that, during the pandemic, teachers under telework, had an incidence of 48.2% (54) teachers who performed telework in public universities and 44.2% (73) of teachers in private universities presented some occupational risk (musculoskeletal risk, psychosocial risk, locative risk or visual risk). 37.9% (105) presented musculoskeletal occupational risks, 22.4% (62) locative risk, 19.5% (54) psychosocial occupational risk and 8.7% (24) visual risk (Reyes-Narváez, *et al.* 2021). Being a subject that can not be isolated by the fact that much of the teleworking was done from the homes of teachers, alarming situation because they could be implicit other risk factors in health, being important to explore new populations of study in order to know their experience during this stage of work.

Based on the above, the present investigation presents as objective to analyze the incidence of telework in university teachers of the Polytechnic Superior School of Chimborazo (ESPOCH), Ecuador, during the pandemic COVID-19.

## METHOD

This descriptive non-experimental cross-sectional study was conducted during the month of December 2021 in the teachers of the science faculty of the Escuela Superior Politécnica de Chimborazo, Ecuador. A population of 92 employees of the institution, appointed and occasional teachers, was selected. Teachers who were studying abroad were excluded from this study.

The battery of instruments for the evaluation of psychosocial risk factors of the Ministry of Colombia was applied, based on the questionnaires of intra- and extra-work psychosocial risk factors in workers. The questionnaire focused on questions to obtain information regarding conditions external to the work environment, as well as evaluating the conditions of the work itself, its organization and the environment in which it is developed.

The questionnaires were applied online using the FORMS program, which is part of the Microsoft Office 365 package. Prior to obtaining the consent of the authorities, the objective of the study was explained, as well as indicating that it is voluntary. The Excel spreadsheet was used for data analysis and the creation of tables and graphs.

## RESULTS

The overall sample consisted of 92 university teachers. The majority age group was between 30 and 40 years old (42.39%) followed by 51 to 60 years old (30.43%). Regarding gender, the highest proportion was represented by the female sex with 61%. In relation to academic preparation, 100% had a third level degree or higher.

The highest proportion of the workers in the study were married (72.83%), followed by single (20.65%), divorced and widowed (3.26%) respectively. A total of 22.82% of the participants reported having no economic dependents and 77.18% of the workers reported between 1 and 5 dependents.

Regarding the housing characteristics of the participants, it was found that 59.78% of the workers had their own home, while 16.30% reported living in rented housing and 23.91% in family housing.

With regard to occupational data, it was found that the highest proportion of people had been with the company for one year or more (82.61%) and the lowest (17.39%) corresponded to workers with less than one year of seniority.

The most reported type of contract was indefinite term (56.52%), however, there were also



occasional contracts (43.48%).

*Results of the evaluation of extra-occupational psychosocial risk factors*

53.26% of teachers are in an adequate situation with respect to family relationships, while 16.30% are at low risk where no intervention is necessary, 16.30% of teachers are also at medium risk with respect to this dimension, 10.87% are at high risk and 3.26% are at very high risk.

27.17% of teachers are in an adequate situation with respect to communication and interpersonal relations, while 13.04% are at low risk where no intervention is necessary, 6.52% of teachers are at medium risk with respect to this dimension, 35.87% are at high risk and 17.39% are at very high risk.

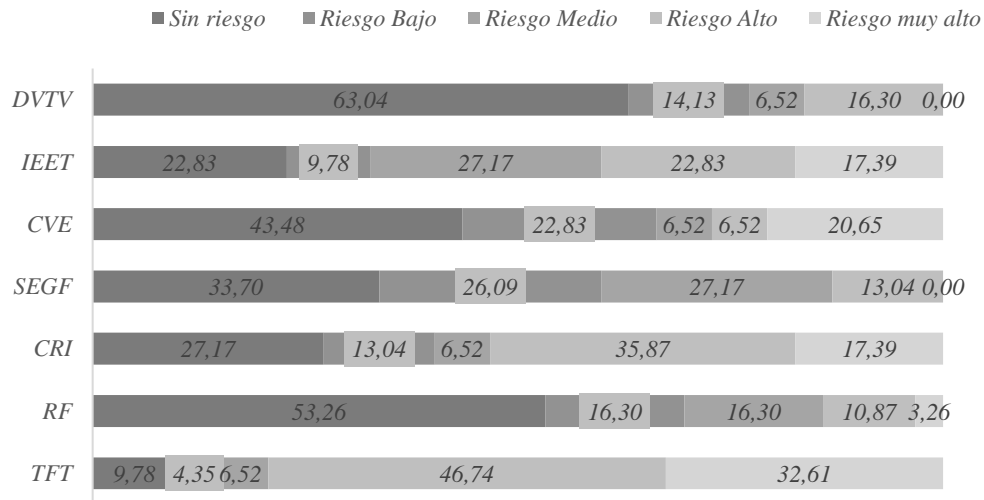
33.70% of teachers are in an adequate situation with respect to the economic situation of the family group, while 26.09% are in low risk where it is not necessary to intervene, as well as 27.17% of teachers are in medium risk with respect to this dimension, 13.04% are in high risk and 0% are in very high risk.

43.48% of teachers are in an adequate situation with respect to the characteristics of the dwelling and its environment, while 22.83% are at low risk where no intervention is necessary, and 6.52% of teachers are at medium risk with respect to this dimension, 6.52% are at high risk and 20.65% are at very high risk.

22.83% of teachers are in an adequate situation with respect to the influence of the outside work environment on work, while 9.78% are in a low risk where it is not necessary to intervene, as well as 21.17% of teachers are in a medium risk with respect to this dimension, 22.83% are in a high risk and 17.39% are in a very high risk.

63.04% of teachers are in an adequate situation with respect to housing-work-housing displacement, while 14.13% are at low risk where no intervention is necessary, and 6.52% of teachers are at medium risk with respect to this dimension, 16.30% are at high risk and 0% are at very high risk.

As shown in Graph 1, the factors at risk are time away from work with a high risk of 46.74% and a very high risk of 32.61%; communication and interpersonal relations with a high risk of 35.87%; characteristics of the home and its environment with 20.65%; influence of the outside work environment on work with a very high risk of 17.39%.



Graph 1. Consolidated summary of psychosocial risk outside the workplace. Source: Own elaboration.

*Results of the evaluation of psychosocial risk factors within the workplace*

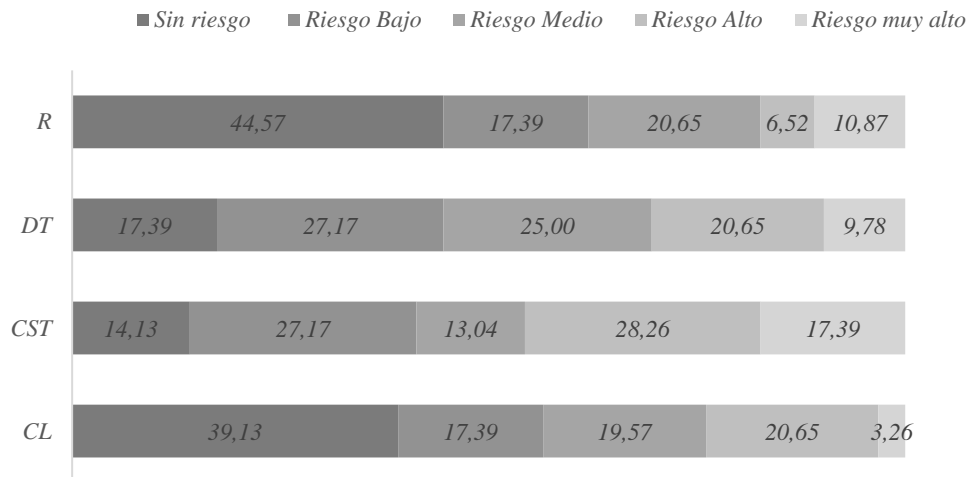
39.13% of teachers are in an adequate situation with respect to leadership and social relations at work, while 17.39% are at low risk where intervention is not necessary, 19.57% of teachers are at moderate risk with respect to this dimension, 20.65% are at high risk, and 3.26% are at very high risk.

14.13% of teachers are in an adequate situation with respect to control over their work, while 27.17% are at low risk where it is not necessary to intervene, and 13.04% of teachers are at moderate risk with respect to this dimension, 28.26% are at high risk and 17.39% are at very high risk.

17.39% of teachers are in an adequate situation with respect to work demand, while 27.17% are at low risk where intervention is not necessary, as well as 25% of teachers are at moderate risk with respect to this dimension, 20.65% are at high risk and 9.78% are at very high risk.

44.57% of teachers are in an adequate situation with respect to rewards, while 17.39% are at low risk where it is not necessary to intervene, 20.65% of teachers are at moderate risk with respect to this dimension, 6.52% are at high risk and 10.87% are at very high risk.

As shown in Figure 2, the factors at risk are control over work with a high risk of 28.26% and very high risk of 17.39%; rewards with a very high risk of 10.87%; job demand and leadership and social relations at work are at 20.65%, which is considered a high risk.



Graph 2. Consolidated summary of psychosocial risk in the workplace. Source: Own elaboration.

## DISCUSSION

The results obtained are consistent with the study of (Lizana, *et al.* 2021), who indicate that the perception of quality of life of Chilean teachers has been affected by the COVID-19 pandemic. These findings could be related to work overload due to teleworking or to feelings of uncertainty, loneliness and fear that the pandemic and its associated confinements will worsen. As can be seen, when teleworking in teaching is not developed with an effective planning of time, use of response to the concerns of students, can affect the teacher in his emotional assessment.

The previous position; is corroborated by (Lizana, & Vega-Fernández, 2021), who indicate that teachers had to reinvent their work routine according to telework during the pandemic of COVID-19, a work format that negatively impacts the physical and mental health of people; therefore, in their study a total of 78.7% of teachers reported having increased their working hours during the pandemic of COVID-19 due to telework and 86% indicated negative effects on their work-family conciliation. Pandemic work hours and negative work-family balance increased the risk of reduced Mental Component Summary (OR: 1.902; OR: 3.996, respectively). Teachers presented low median quality of life scores, especially in the Mental Component Summary, suggesting that it would be beneficial to promote better workload distribution for teachers in emergency contexts, considering the adverse effects of teleworking.

Regarding the mental component, we have that the study of (Estrada-Muñoz, *et al.* 2021), evidence that 11% of teachers reveal technoanxiety and 7.2%, technofatigue. Combining both manifestations, we find that 6.8% of teachers are stressed by technoanxiety; fatigue and anxiety factors are higher among female teachers. From this approach and intertwining with (Lizana, & Vega-Fernández, 2021), as well as the current results where it is evident with respect to control over work that 28.26% are at high risk and 17.39% are at very high risk, this affects the emotional stability of the teacher, causing fatigue and stress (Penado-Abilleira, *et al.* 2021), (Wang & Li, 2019).

It is noteworthy that the mental affectation, not only impacted by telework itself, but, being confined to the home or place of residence, teachers had to share family roles simultaneously with work, therefore; they struggled to fulfill different roles simultaneously, develop new routines and manage the boundaries between the areas of life (Syrek, *et al.* 2022), being these intervening factors to be taken into account in the planning of teleworking hours. In complement, (Gawrych, *et al.* 2022), state that the most vulnerable group of teachers turned out to be young women who work in a large city and mostly teach remotely. Sustainable systems of support and care tailored



to the needs of teachers should be developed. Some essential predictors of mental health deterioration among teachers should also be considered when designing long-term prevention strategies, a similar situation highlighted by (Wong, et al. 2021).

## CONCLUSION

The psychosocial risk factors identified in this study, both at the extra-work and intra-work level, revolve around the amount of time away from work, communication, interpersonal relationships, influence of the extra-work environment on work, control over work, rewards, work demands, leadership and social relations, making the work more demanding and strenuous, generating a greater psychosocial risk and affecting negatively the general and mental health, the personal, familiar life, of the workers, the leaders and middle managers of the institution are the called ones to realize an intervention based on designing and implementing measures of promotion, prevention and improvement of the conditions of the health of the teleworkers.

## FINANCING

Non-monetary

## CONFLICT OF INTEREST

It does not exist conflict of interest with persons or institutions linked to the investigation.

## ACKNOWLEDGMENTS

Universidad Regional Autónoma de Los Andes. UNIANDÉS, Ambato - Ecuador.

## REFERENCES

- Estrada-Muñoz, Carla, Vega-Muñoz, Alejandro, Castillo, Dante, Müller-Pérez, Sheyla, & Boada-Grau, Joan. (2021). Technostress of Chilean Teachers in the Context of the COVID-19 Pandemic and Teleworking. *International journal of environmental research and public health*, 18(10), 5458. <https://doi.org/10.3390/ijerph18105458>
- Gawrych, Magdalena, Cichoń, Ewelina, & Hintze, Beata. (2022). Predictors of teachers' mental health - implications for practice. *Postępy psychiatrii neurologii*, 31(1), 15–24. <https://doi.org/10.5114/ppn.2022.115238>
- Lizana, Pablo, & Vega-Fernández, Gustavo. (2021). Teacher Teleworking during the COVID-19 Pandemic: Association between Work Hours, Work-Family Balance and Quality of Life. *International journal of environmental research and public health*, 18(14), 7566. <https://doi.org/10.3390/ijerph18147566>
- Lizana, Pablo, Vega-Fernández, Gustavo, Gómez-Bruton, Alejandro, Leyton, Bárbara, & Lera, Lydia. (2021). Impact of the COVID-19 Pandemic on Teacher Quality of Life: A Longitudinal Study from before and during the Health Crisis. *International journal of environmental research and public health*, 18(7), 3764. <https://doi.org/10.3390/ijerph18073764>
- Montealegre-Ramón, Génesis, Mendoza-Granda, Yanira, & Jaya-Pineda, Iddar. (2022). Repercusiones del Teletrabajo durante la Pandemia del Covid-19 en el Ámbito Educativo. Caso de la Universidad Técnica de Machala. *Economía Y Negocios*, 13(2), 145–163. <https://doi.org/10.29019/eyn.v13i2.1078>
- Penado-Abilleira, María, Rodicio-García, María, Ríos-de Deus, María., & Mosquera-González, María. (2021). Technostress in Spanish University Teachers During the COVID-19 Pandemic. *Frontiers in psychology*, 12, 617650. <https://doi.org/10.3389/fpsyg.2021.617650>
- Reyes-Narváez, Silvia Elizabet, Nuñez-Zarazú, Llermé, León-Huerta, Bibiana María, Lezameta-Blas, Ursula, Valderrama-Ríos, Olga Giovanna, & Ponte-Valverde, Segundo Ignacio.



- (2021). Teletrabajo en el contexto Covid-19 y su impacto en la salud de docentes universitarios [Teleworking in the context of Covid-19 and its impact on the health of university teachers]. *Vive Revista de Salud*, 4(12), 166-178. <https://doi.org/10.33996/revistavive.v4i12.117>
- Syrek, Christine, Kühnel, Jana, Vahle-Hinz, Tim, & de-Bloom, Jessica. (2022). Being an accountant, cook, entertainer and teacher-all at the same time: Changes in employees' work and work-related well-being during the coronavirus (COVID-19) pandemic. *International journal of psychology : Journal internationale de psychologie*, 57(1), 20–32. <https://doi.org/10.1002/ijop.12761>
- Wang, Xinghua, & Li, Bo. (2019). Technostress Among University Teachers in Higher Education: A Study Using Multidimensional Person-Environment Misfit Theory. *Frontiers in psychology*, 10, 1791. <https://doi.org/10.3389/fpsyg.2019.01791>
- Wong, Kai, Sulaiman, Tajularipin, Ibrahim, Abdul, Kunchi Mohd, A. G., Hassan Hussin, O., & Wan Jaafar, Wan. (2021). Secondary school teachers psychological status and competencies in e-teaching during Covid-19. *Heliyon*, 7(11), e08238. <https://doi.org/10.1016/j.heliyon.2021.e08238>

Bajo la Licencia Creative Commons 4.0 de Reconocimiento-NoComercial-CompartirIgual 4.0