Systematic Review of the Impact of Teleworking Conditions Based on Psychosocial Risks in Times of Covid-19

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Abstract

In the face of the SARS-CoV-2 pandemic, declared in Peruvian territory as of March 2019, many of the jobs were forced to drastically change their way of working, opting for teleworking in order to continue their operations. Remote work had a strong impact on the work conditions of Peruvian workers, increasing stress due to the modification of work schedules and in some cases even increasing working hours, due to the limited sample and the emerging characteristic of psychosocial risk assessment, there is not much information about the impact of this work modality on the quality of life of the workers who experience it. The methodology used was a systematic review of the literature related to teleworking. Most of the articles used are from important databases such as Scopus and Web of Science. A total of 52 articles were obtained and used to write this article. For the analysis of the information, the data obtained were categorized into factors and dimensions.

Key Words
Teleworking, psychosocial risks, safety and health at work.

1. Introduction
The pandemic has caused a sudden increase in workload, as well as major changes in working arrangements and conditions, such as telecommuting. Many organizations where telecommuting was virtually non-existent moved overnight to an unknown work system (Eurasia Review, 2020). This study focuses on the analysis of the psychosocial

risk of teleworking during the Covid 19 pandemic. The main objective of the text is to determine exposure to psychosocial risk, specifically the impact on mental health and productivity of teleworkers in Peruvian companies. The pandemic forced remote work. The lack of preparation for the implementation of telecommuting of companies is one of the most important problems that several companies around the world still experience.

According to the International Labor Organization (ILO, 2016) it is defined as "Psychosocial risk factors are those aspects of the design and management of work and their social and organizational contexts that can cause psychological or physical harm. Whereas hazard refers to the intrinsic property or potential capacity of an agent, process or situation (including work organization and work practices) to cause harm or adverse health effects at work, risk designates the combination of the probability of a dangerous event and the seriousness of the damage to the health of a worker caused by said event. Thus, psychosocial risk refers to the possibility or probability that a person will be harmed or experience adverse health effects if exposed to a psychosocial hazard."

"The term health, in relation to work, covers not only the absence of illness or disease, but also the physical and mental elements that affect health and are directly related to safety and hygiene at work" (Convention of the ILO on safety and health of workers) In this sense, according to the WHO, Mental health can be defined as "a state of well-being in which the person performs their capacities and is able to cope with the normal stress of life, to work productively and to contribute to their community" (WHO, 2018). "Work-related stress occurs when the demands of the job do not match or exceed the capabilities, resources, or needs of the worker, or when the knowledge and skills of an individual worker or group to cope with those demands are not adequate. match the expectations of a company's organizational culture. (ILO, 2016).

In the face of the Covid-19 pandemic, the way many companies work changed drastically, opting for teleworking to prevent the spread of the pandemic. The pandemic has aggravated exposure to psychosocial risks for people who work from home. In this sense, "people who work from home are exposed to specific psychosocial risks, such as isolation, blurred boundaries between work life and family life, and increased risk of domestic violence, among others. Fear of job loss, pay cuts, layoffs and reduced benefits have many workers questioning their future. Job insecurity, financial loss, and unemployment can have a serious impact on mental health. These and other psychosocial risks may arise or be exacerbated as a result of the COVID-19 crisis." (ILO, 2020).

Exposure to these psychosocial risks is related to increased stress levels and causes problems with physical and mental health and productivity. This can include low mood, low motivation, exhaustion, anxiety, depression, irritability, exhaustion, and suicidal thoughts and can be evidenced by behavioral changes, changes in activity level, and increased unhealthy behaviors such as increased consumption of tobacco, alcohol, and drugs as a resource to deal with the situation.

As a point against, the social distancing that has been chosen in many in many countries to control the COVID-19 pandemic has significantly reduced physical exercise. Being the physical exercise used by people as a healthy tool to manage stress and anxiety levels.

The productivity of employees at work is also affected, showing greater absenteeism, less dedication, concentration and reduced productivity. Stress directly impacts worker productivity by affecting work efficiency and accuracy. A high level of stress and fatigue can reduce the efficiency and effectiveness of the task, resulting in losses for the company.

1.1. Objectives
The present work seeks to create a framework that serves as a guide for future research. For this, the following research question is formulated: What was the impact on the productivity of teleworkers based on psychosocial risks during the Covid19 pandemic?

2. Literature Review
The present study was conducted with the need to measure the impact that had on the changing working conditions caused by the current pandemic. According to Juan Sandoval-Reyes (2021), the explanation of how stress impacts the relationship between working remotely and work–life balance, and between working remotely and job satisfaction. Stress acts as a complementary partial mediator, and, in doing so, it clarifies how remote work demands negatively affect the perception of work–life balance and job satisfaction. As a result of the increasing importance of telework

due to the COVID-19 pandemic and other societal and organizational developments like the globalization of business, expensive office space, or lack of office space in large cities, this study investigated whether the effects of telework on job stress are universally effective. The findings provide evidence against the universality of telework effectiveness. First, employees' beliefs about telework strongly vary in dependence on their power distance and individualism orientations. Second, spending more time working from home only reduces job stress when employees do not believe that telework will lead to social isolation. (Adamovic, 2022). For those who were able to change from traditional work during the pandemic in some countries in Latin America, remote work demands increased perceived stress, reduced work–life balance and work satisfaction, and increased productivity and engagement. (Sandoval-Reyes et al. 2021). During the first year of the pandemic, one of the consequences of lockdown was the staying-at-home of all members of the household, thus increasing the possibility of assuming more family responsibilities and affecting the balance between life and work (Sandoval-Reyes,J, 2021). On the other hand, learning how to manage remote work can decrease the perception of family-work conflict. In addition, organizations should support employees' time management skills, enabling them to divide the two spheres and give each of them the right attention at the right time, with a view to the right to disconnection and physical and mental recovery of each worker (American College of Occupational and Environmental Medicine, 2021). Occupational physicians may play a central role in that process even by health promotion campaigns (healthy diets, tobacco smoking cessation) and supporting employers in the risk assessment (Simone 2021).

Learning how to manage remote work can decrease the perception of family-work conflict. In addition, organizations should support employees' time management skills, enabling them to divide the two spheres and give each of them the right attention at the right time, with a view to the right to disconnection and physical and mental recovery of each worker. (Teresa Galanti, Gloria Guidetti, Elisabetta Mazzei, Salvatore Zappala, and Ferdinando Toscano, 2021).We cannot lose sight of the fact that several interviewees who are mothers reported exhaustion and difficulty working. This finding raises a relevant issue for the near future discussion on the expanded implementation of telework in the post-pandemic context: although this work model can bring gains for some employees and employers, its homogeneous adoption for the workforce as a whole, disregarding the particular features of the different domestic/family arrangements, can further aggravate the inequalities between workers (Alessandra de Sá Mello da Costa, Ely Laureano Paiva, Marcus Vinícius Peinado Gomes and Vinicius Brei,2020).

The perceived stress affects men's productivity more acutely than women's productivity(Soubelet-Fagoaga, I.; Arnoso-Martinez, M.; Elgorriaga-Astondoa, E.; Martínez-Moreno, E.2022).Though, Autonomy and self-leadership have a positive relationship with productivity and work engagement. So, they may represent two relevant resources, able to sustain WFH productivity and engage- ment during the COVID-19 pandemic, and to potentially bring favorable outcomes for both organizations and employees. In practical terms, promoting autonomy and self-leadership may be a solution to improve the efficacy of remote work programs and related implications in terms of WFH engagement (Sandoval-Reyes,J.; Idrovo-Carlier, S.; Duque-Oliva, E.J., 2021).

3. Methodology

The methodology used in this research is based on a systematic mapping of the literature relevant to psychosocial risks and telework. The main reason why this methodology was selected is that to date there is no precise information

On psychosocial risk Peruvian teleworkers, and, in turn, most of the publications associated with these issues are scattered in different high-impact journals without a clear correlation between them. Figure 1 describes the methodology used step by step (Table 1 and Table 2).
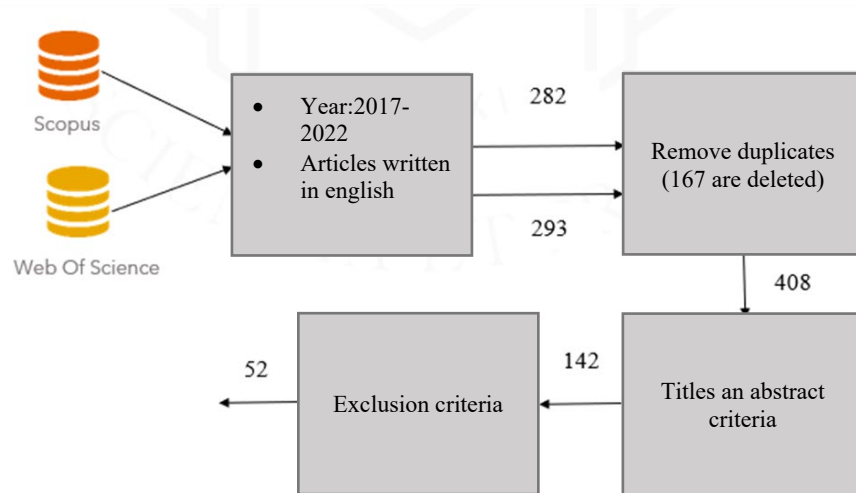
Figure 1. Systematic mapping sequence

Table 1. Search String

N°	String
1	("Telework") AND ("Covid 19") OR ("Telework" AND "Psychosocial Risk") OR ("Telework" AND "Occupational health")
2	("Psychosocial Risk" AND "Covid 19"AND "Telework")
3	("Telework" AND "Occupational Health")

Table 2. Exclusion Criteria

N°	Definition
C1	Articles focused on the study of a specific modality different from Teleworking
C2	Articles focused on the pre Covid-19 stage
C3	Articles that do not have any contribution on issues of psychosocial risks, and what this includes

4. Data Collection

The researchers, after carrying out a review of the literature, proceeded to carry out a subjective survey to find out the perception of the workers according to the sample already presented.

4.1. Sample population and/or participants

The population of the study will be made up of all the workers in the telecommuting modality of Metropolitan Lima. This filter leaves us with a total population of 220,000 individuals. As an inclusion criterion, the participants should be hired full-time, have a totally remote shift and have more than six months under that work modality. Intentional non-probabilistic sampling will be used, sending the research questionnaires randomly to participants in social network groups.

At a confidence level of 95% and a margin of error of 5%, the sample consisted of 384 participants using the following formula:

$$n= \frac{z^2(p*q)}{e^2 + (z^2(p*q))} \over N$$

Figure 2. Formula Survey

where,
n: The sample
z: Standard deviation
p*q= sample error
N: total population (Figure 2)

4.2. Techniques and instruments

The data will be collected using the questionnaire technique (Table 3), which is made up of 22 items with responses graded from 1 to 4 under a scale of frequency (Always, Often, Only Sometimes and Never) and intensity (In To a great extent, To a good extent, To some extent, Not at all).

The proposed model is composed of four dimensions of two, three or four variables each, as shown below.

Table 3. Variables For Survey

Dimensions	Variables	Indicators
Labor Productivity	Quantitative Requirements	Amount Of Overtime
	Pace Of Work	Efficiency Level
	Insecurity Regarding Working Conditions	Consumption Of Psychotropics
	Uncertainty Due To The Pandemic	Anxiety Level
Familiar Scope	Double Presence	Level Of Absenteeism
	Development Possibilities	Level Of Work Motivation
	Direction Of Work	Level Of Work Motivation
Organization And Coordination	Peer Social Support	Level Of Work Motivation
	Recognition	Level Of Work Motivation
	Social Support From Superior	Level Of Work Motivation
	Leadership Quality	Level Of Work Motivation
Psychological Demands	Emotional Demands	Stress Level
	Demand To Hide Emotions	Health Condition

4.3. Validity criteria

The research will follow the principles of methodological rigor when checking the assumptions of validity and reliability of the data obtained.

To analyze the validity, an exploratory factorial analysis will be carried out, verifying the validity of the construct. In addition, the convergent and discriminant internal validity will be verified. For the reliability analysis, the McDonald's Omega coefficient is blocked. In addition, informed consent will be used in all participants, offering information about the purpose of the research and their role as study subjects.

5. Results and Discussion

In Table 4, the 8 journals with the highest impact included in the study are presented below in descending order of importance, according to the SCImago Journal Rank (SJR) as of 2022. In addition, the highest quartile achieved by the journal, its respective Hirsch index and the average number of citations achieved in 2020 per paper published between 2020, 2021 and 2022 are presented, the latter indicator being, for various sources, the impact factor of a journal.

Table 4. Highest impact journals included in the study

Magazine	SJR	Best Quartile	H-Index	Cites / Doc. (2 Años)
Rae-Revista De Administración De Empresas	0.26	Q2	18	1.233
European Review For Medical And Pharmacological Sciences	0.768	Q2	73	6.65
Journal Of Service Management	2.851	Q1	69	18.46
Journal Of Clinical Medicine	1.04	Q1	75	8.68
Journal Of Occupational And Environmental Medicine	1.233	Q1	116	3.31
Journal Of Clinical Medicine	1.04	Q1	75	8.68
Journal Of Applied Psychology	7.373	Q1	306	16.43
International Journal Of Environmental Research And Public Health	0.918	Q1	138	7.86

5.1. Graphical Results

The main thematic axes identified in the works were captured. To find this information, the VosViewer software allows a qualitative analysis of the key terms and their visual representation by means of a graph. From the sample of 52 articles analyzed, it was found that 53 key terms appeared more than 3 times among the keywords in the titles of the articles. The most important for the study appear among the main ones, with more than 25 appearances and links each. Also as shown in the Figure 3.

Figure 3. VosViewer of keywords

Of the analyzed sample, of 52 articles, 34 key terms were found, which appear 3 times or more between keywords or article titles. The most relevant for the study appear repetitively, with 15 repetitions or more. In addition, as shown in Fbleigure 4, psychosocial risks and their cluster are related to impact and are, in turn, closely related to stress; Burnout syndrome; professional isolation; exhaustion; and family-work conflict.

Likewise, when observing cluster 1 in red, the Covid-19 is related to commitment, resources, work commitment, validation and resources. On the other hand, analyzing cluster number 2 and 4, health and teleworking are also related to technologies, workplace, demands, work, meta-analysis, role of moderator and performance.
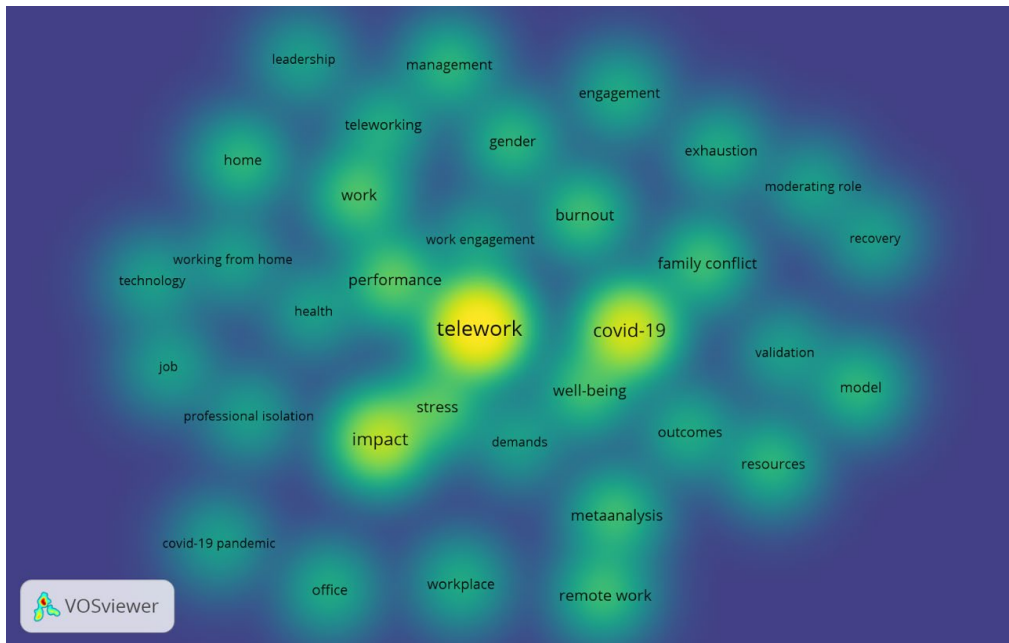

Figure 4. Heat Matp of keywords

As can be seen in the Figure 4, most of the articles focus on the terms highlighted in orange, such as telework, covid-19, impact and stress.

Next, the findings obtained after the review about each exposed dimension are detailed, immediately afterwards they will be discussed in the point 5.3.

Wellness
A cross-sectional study (da Costa Lemos, 2021), reported on the influence of Teleworking in relation to the work-family conflict, which is aggravated mostly in the situation of women who are mothers of families, housewives and teleworkers, the which found difficulties compared to another audience when dividing their activities.

Satisfaction with life and work
A longitudinal study found a relationship between these 2 variables, where it is noted "if employees have few beliefs about isolation in teleworking, they will feel more optimistic about the effects of teleworking on learning, cooperation and interpersonal relationships and the communication with bosses and co-workers" (Adamovic 2022). Sandoval Reyes (2021) makes an independent differentiation of each of these variables where he first points out: "Teleworking reduces interpersonal interactions and weakens ties with other workers, which makes workers feel less connected and supported"; On the other hand, in relation to job satisfaction, Sandoval Reyes (2021) points out: "Teleworking is negatively related to work commitment and that job demands and resources mediate these relationships"

Stress
Soubelet (2022) defines stress as: "a particular relationship between the individual and the environment that is evaluated by the individual as threatening or overwhelming for his resources and that endangers his well-being"
Lunde (2022) points out that: "Workers who were allowed to work partially from home reported less stress on days from home, but found no significant differences between home and office"

5.2. Results

The survey was carried out on 384 participants, which represents a sample of what becomes our object of investigation, whose characteristics were previously described throughout the work. By applying this survey (Table 5), each worker will obtain a score regarding the variable described. With the given score, each worker can be placed in a certain level of risk (high, medium or low), what is shown below is the average of the given percentage (Table 6).
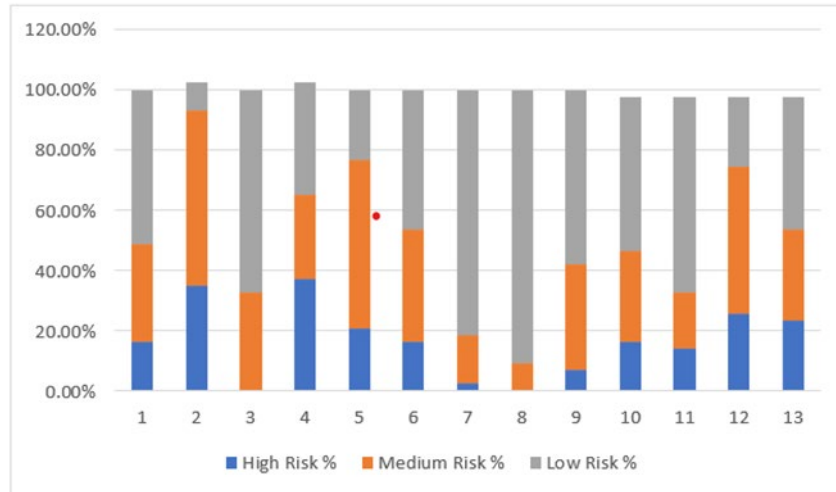

Figure 5. Results Graph

According to the Figure 5, the sample studied shows that the participants have a more notable high risk (blue), whereit exceeds 20% (Rhythm of work, Uncertainty due to pandemic, double presence, possibilities of development, Emotional demands and requirement to hide emotions), these variables must be taken into account for the purpose of the investigation. Next, the findings obtained after the review about each exposed dimension are detailed, immediately afterwards they will be discussed.

Table 5. Results Survey

	Quantitative Requirements (1)	Pace Of Work (2)	Insecurity Regarding Working Conditions (3)	Uncertainty Due To The Pandemic (4)	Double Presence (5)	Development Possibilities (6)	
High Risk %	16.28%	34.88%	0.00%	37.21%	20.93%	16.28%	
Medium Risk %	32.56%	58.14%	32.56%	27.91%	55.81%	37.21%	
Low Risk %	51.16%	9.30%	67.44%	37.21%	23.26%	46.51%	
	DIRECTION OF WORK (7)	PEER SOCIAL SUPPORT (8)	RECOGNITION (9)	SOCIAL SUPPORT FROM SUPERIOR (10)	QUALITY OF LEADERSHIP (11)	EMOTIONAL DEMANDS (12)	DEMAND TO HIDE EMOTIONS (13)
High Risk %	2.33%	0.00%	6.98%	16.28%	13.95%	25.58%	23.26%
Medium Risk %	16.28%	9.30%	34.88%	30.23%	18.60%	48.84%	30.23%
Low Risk %	81.40%	90.70%	58.14%	51.16%	65.12%	23.26%	44.19%

Table 6. Literature Review Findings

DIMENSION	Authors	Findings
LABOR PRODUCTIVITY	(Lars-Kristian et al. 2022); (Iduzki et al. 2022)	- When evaluating the relationship of teleworking with the health of employees, it is necessary to take into account that the worker must be voluntary and the intensity. It is indicated that the reported stress may be affected differently when the work is performed during normal working hours, outside of normal working hours. - Regarding the economic threat and the instability regarding the future of work, the concern detected among employees and its tendential explanatory role in the appearance of stress among those who worked face-to-face (particularly among those with care responsibilities) suggests that it is important for organizations to evaluate the best strategies to provide workers with the greatest possible job security in situations such as the one recently experienced
FAMILIAR SCOPE	(Mladen 2022); (Kerman et al. 2021); (Galanti et al. 2021)	- Working from home often increases job autonomy, but too much autonomy can be a stressful experience when it increases the employee's workload and makes the job too complex and demanding. - Employees may struggle with work and home boundary violations due to co-location of work and home, increasing unfinished tasks in both domains and decreasing satisfaction with investment in the domain. - Employees may become less engaged, less motivated when their work environment becomes more upset. The family-work conflict, on the other hand, has shown significant and unfavorable effects.

ORGANIZA TION AND COORDINA TION	(J. H. Coun et al. 2021)	• The COVID-19 pandemic challenged leaders to create an engaging work environment where employees feel supported and can perform to the best of their abilities, despite your inability to meet with them. face to face. • When the leadership style does not provide employees with greater freedom of decision and autonomy, this will negatively affect the innovative work behavior of employees
PSYCHOLO GICAL DEMANDS	(Sandoval-Reyes et al. 2021); (De Sio et al. 2021)	• Organizations should provide the psychological support their employees need using mitigation strategies such as telemedicine (psychology) and informal support groups. Likewise, governments and companies must develop policies that safeguard the well-being —physical and mental— of workers in the new circumstances. • In the early 2000s they reported that telecommuting has a significant emotional impact on employees, with negative emotions such as loneliness, annoyance, worry and guilt appearing.

6. Conclusion

This systematic review investigated recent information related to teleworking regarding psychosocial risks in the context of Covid-19. In general, there were few studies that addressed the specific study of psychosocial risks under this modality. On the other hand, the results used for this article showed that the following variables are significant according to the perception of the population studied: work pace, pandemic uncertainty, double presence, development possibilities, emotional demands and the requirement to hide emotions. These findings will help employers identify points to improve in the organization for a better work environment.

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