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The impact of the covid-19 pandemic on the quality of life of teleworkers: scoping review protocol  
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## SCOPING REVIEW PROTOCOL

### The impact of the COVID-19 pandemic on teleworkers' quality of life: A scoping review protocol

### O impacto da pandemia COVID-19 na qualidade de vida dos teletrabalhadores: protocolo *scoping review*

### El impacto de la pandemia de COVID-19 en la calidad de vida de los teletrabajadores: protocolo de revisión de alcance

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#### ABSTRACT:

**Objective:** To map the scientific evidence regarding the impact of teleworking on quality of life before, during and after the COVID-19 pandemic. **Inclusion criteria:** All studies that assessed the impact of teleworking before, during and after the pandemic will be considered; written in Portuguese, English, Spanish and French and available in free full text. **Methodology:** This is a scoping review protocol, in accordance with the Joanna Briggs Institute methodology and the PRISMA-ScR<sup>®</sup> recommendations for registration. The search was carried out in the following databases: CINAHL<sup>®</sup>; MEDLINE Complete<sup>®</sup>; Nursing & Allied Health Collection: Comprehensive<sup>®</sup>; Cochrane Central Register of Controlled Trials<sup>®</sup>; Library, Information Science & Technology Abstracts and MedicLatina<sup>®</sup> (via EBSCOhost). The articles will be selected by two independent reviewers using the Rayyan platform, resorting to a third reviewer in case of disagreement. The data from the studies will be extracted using tools built by the authors for this purpose.

**DESCRIPTORS:** COVID-19; Quality life; Teleworking

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#### RESUMO:

**Objetivo:** Mapear a evidência científica relativa ao impacto do teletrabalho na qualidade de vida antes, durante e após a pandemia COVID-19. **Critérios de inclusão:** Serão considerados todos os estudos que avaliaram o impacto do teletrabalho antes, durante e após a pandemia, redigidos em português, inglês, espanhol e francês e disponíveis em *free full text*. **Metodologia:** Trata-se de um protocolo de revisão de escopo, de acordo com a metodologia do Joanna Briggs Institute e as recomendações do PRISMA-ScR® para registro. A pesquisa foi realizada nas seguintes bases de dados: CINAHL®, MEDLINE Complete®, Nursing & Allied Health Collection: Comprehensive®, Cochrane Central Register of Controlled Trials®, Library, Information Science & Technology Abstracts e MedicLatina® (via EBSCOhost). A seleção dos artigos será realizada por dois revisores independentes pela plataforma Rayyan, recorrendo-se a um terceiro revisor em caso de discordância. Os dados dos estudos serão extraídos através de ferramentas construídas pelos autores para o efeito.

**DESCRITORES:** COVID-19; Qualidade de vida; Teletrabalho.

#### RESUMEN:

**Objetivo:** Mapear la evidencia científica sobre el impacto del teletrabajo en la calidad de vida antes, durante y después de la pandemia de COVID-19. **Criterios de inclusión:** Se considerarán todos los estudios que evaluaron el impacto del teletrabajo antes, durante y después de la pandemia; escritos en portugués, inglés, español y francés y disponibles en texto completo gratuito. **Metodología:** Este es un protocolo de revisión de alcance, de acuerdo con la metodología del Instituto Joanna Briggs y las recomendaciones de PRISMA-ScR® para el registro. La búsqueda se realizó en las siguientes bases de datos: CINAHL®, MEDLINE Complete®, Nursing & Allied Health Collection: Comprehensive®, Cochrane Central Register of Controlled Trials®, Library, Information Science & Technology Abstracts; y MedicLatina® (a través de EBSCOhost). La selección de los artículos será realizada por dos revisores independientes utilizando la plataforma Rayyan, recurriendo a un tercer revisor en caso de desacuerdo. Los datos de los estudios se extraerán utilizando herramientas creadas por los autores para este fin.

**DESCRIPTORES:** COVID-19; Calidad de vida; Teletrabajo.

## INTRODUCTION

Teleworking is a practice that has evolved over time due to the fuel crisis that took place in the 1970s around the world, forcing people to stay home due to high transportation costs <sup>(1)</sup>. Three fundamental points define teleworking: the need for a work space that is separate from the company environment to guarantee privacy and concentration; minimum technological requirements, such as a computer and Internet; and remote communication, eased by tools such as video calls and email messages <sup>(1)</sup>. It offers a variety of benefits for workers, organizations and society in general, including better work/family balance, flexibility, reduced commuting costs and improved quality of life. However, it carries along potential risks for organizations, including a negative impact on productivity and sustainability issues <sup>(1)</sup>. It presents a series of risks for workers, including physical and psychological

isolation, lack of technological support, external distractions, stress, difficulty in career progression, unfavorable ergonomic conditions, lack of visibility at work, prejudice, excessive working hours and workload, domestic noise, increased unemployment risk and psychological exhaustion.

According to the World Health Organization (WHO), quality of life is an individual's perception of life, taking into account culture, values, goals and personal concerns. Work-related Quality of Life (WRQoL) refers to workers' well-being and is generally associated with organizational conditions and practices that provide safety, satisfaction and opportunities for growth, allowing them to feel valued and developed as individual human beings <sup>(2)</sup>. The quality of life concept is complex and multifaceted, influenced by historical, socio-cultural, psychological, environmental and work-related factors. Several authors highlight the need for a careful approach when investigating the factors that contribute to the perception regarding quality of life. It is important to clearly define the elements to be measured, as quality of life is an ambiguous and subjective term, varying from person to person <sup>(3)</sup>. Four types of classifications have been proposed to organize the existing definitions of quality of life, namely: global definitions, which are broad and focus on satisfaction and happiness; component definitions, which divide the concept into operational parts, both objective and subjective; definitions focused on one or more specific components; and combined definitions, which specify one or more components without fully analyzing the social context <sup>(2)</sup>. Currently, we are seeing growing interest in the topic of WRQoL, especially due to the transformations in work dynamics influenced by the COVID-19 pandemic. Moreover, the relevance of this topic is undeniable, as work plays a central role in most people's lives <sup>(2)</sup>.

The COVID-19 pandemic has drastically transformed work dynamics, boosting teleworking worldwide. Public health measures have led to a rapid transition to remote work, challenging organizations to provide technological infrastructure and ergonomic support for employees. The necessary prolonged telework period during the pandemic has exacerbated isolation and the burnout risk, but it has also led to valuable lessons for organizations in terms of health and safety <sup>(4)</sup>.

A preliminary search was carried out in information sources involving a synthesis of diverse evidence in health, such as the International Prospective Register of Systematic Reviews (PROSPERO<sup>®</sup>), which found some published reviews <sup>(5,6)</sup> and systematic review protocols <sup>(7)</sup> on the topic. However, the scoping review protocol herein proposed is intended to be more comprehensive than existing reviews and review protocols because it is not limited to any geographical context <sup>(6,7)</sup>. The time frame defined in the research was five years, as the reviews must be valid and reliable for them to be useful. Thus, recent scientific evidence is essential for health decision-making <sup>(8)</sup>, considering this pre-pandemic period. The post-pandemic period was also analyzed, starting on May 5<sup>th</sup>, 2023, when the World Health Organization declared the end of the health emergency for COVID-19 worldwide.

Therefore, the objective of this scoping review protocol will be to map the scientific evidence in relation to the impact of teleworking on quality of life before, during and after the COVID-19 pandemic. The review question for this study was as follows: Which was the impact of the COVID-19 pandemic on teleworkers' quality of life?

## METHODOLOGY

### Study design

This review will be conducted according to the JBI® Collaboration methodological framework for scoping reviews. This protocol was written in accordance with the guidelines set forth in the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR®) (9).

### Inclusion criteria

The eligibility criteria for this scoping review protocol were developed considering the PCC acronym (Participants, Concept and Context), which is the one used for this type of review (10). A description of these criteria can be found in Chart 1.

Chart 1. Eligibility criteria for the scoping review protocol

PCC component	Description of the criterion
Population	All studies focusing on teleworkers in at least one of the periods before, during and after the COVID-19 pandemic will be considered.
Concept	Quantitative and qualitative studies that have been implemented and evaluated teleworkers' quality of life will be considered.
Context	All studies that refer to the impact of teleworking before, during and after the pandemic will be considered.
Types of evidence sources	All articles written in Portuguese, English, Spanish and French and available in free full text will be included. The time frame considered the five-year period before the pandemic, as well as during and after the pandemic.

Source: The authors, 2023.

### Search strategy

A three-stage database search was initially planned to find relevant studies for the purpose of this review. 1) A preliminary search was carried out on MEDLINE® (via EBSCOhost®) and on the

Cumulative Index to Nursing and Allied Health Literature (CINAHL®) (via EBSCOhost®). The keywords (free text words, expressions, etc.) of interest contained in the titles, abstracts and indexing terms of the relevant studies were used to devise a general search strategy. The AND and OR Boolean operators will be used, employing AND to identify studies between the topics and OR for synonyms, according to the combinations between the descriptors, as shown in Chart 2. The following Boolean phrase was created: (“*covid-19*” OR “*coronavirus*” OR “*2019-ncov*” OR “*sars-cov-2*” OR “*cov-19*”) AND (“*quality of life*” OR “*well being*” OR “*well-being*” OR “*health-related quality of life*”) AND (“*teleworking*” OR “*telework*” OR “*remote working*” OR “*telecommuting*” OR “*flexible workplace*”). 2) In stage 2, the search strategy developed in the previous stage was adapted for each information source, according to the particularities of each one, as shown in Chart 2. 3) In stage 3, the reference lists and citations of all the studies selected for data extraction will be searched to identify additional studies.

Chart 2. Records from the searches carried out on all information sources

<b>Information source</b>	<b>Query</b>	<b>Records found</b>	<b>Search date</b>
CINAHL®	(“ <i>covid-19</i> ” OR “ <i>coronavirus</i> ” OR “ <i>2019-ncov</i> ” OR “ <i>sars-cov-2</i> ” OR “ <i>cov-19</i> ”) AND (“ <i>quality of life</i> ” OR “ <i>well being</i> ” OR “ <i>well-being</i> ” OR “ <i>health-related quality of life</i> ”) AND (“ <i>teleworking</i> ” OR “ <i>telework</i> ” OR “ <i>remote working</i> ” OR “ <i>telecommuting</i> ” OR “ <i>flexible workplace</i> ”)	64	10/05/2023
Medline®	(“ <i>covid-19</i> ” OR “ <i>coronavirus</i> ” OR “ <i>2019-ncov</i> ” OR “ <i>sars-cov-2</i> ” OR “ <i>cov-19</i> ”) AND (“ <i>quality of life</i> ” OR “ <i>well being</i> ” OR “ <i>well-being</i> ” OR “ <i>health-related quality of life</i> ”) AND (“ <i>teleworking</i> ” OR “ <i>telework</i> ” OR “ <i>remote working</i> ” OR “ <i>telecommuting</i> ” OR “ <i>flexible workplace</i> ”)	129	10/05/2023
Nursing & Allied Health Collection: Comprehensive®	(“ <i>covid-19</i> ” OR “ <i>coronavirus</i> ” OR “ <i>2019-ncov</i> ” OR “ <i>sars-cov-2</i> ” OR “ <i>cov-19</i> ”) AND (“ <i>quality of life</i> ” OR “ <i>well being</i> ” OR “ <i>well-being</i> ” OR “ <i>health-related quality of life</i> ”) AND (“ <i>teleworking</i> ” OR “ <i>telework</i> ” OR “ <i>remote working</i> ” OR “ <i>telecommuting</i> ” OR “ <i>flexible workplace</i> ”)	13	10/05/2023

<i>Cochrane Central Register of Controlled Trials®</i>	<i>("covid-19" OR "coronavirus" OR "2019-ncov" OR "sars-cov-2" OR "cov-19") AND ("quality of life" OR "well-being" OR "well-being" OR "health-related quality of life") AND ("teleworking" OR "telework" OR "remote working" OR "telecommuting" OR "flexible workplace")</i>	1	10/05/2023
<i>Library, Information Science &amp; Technology Abstracts®</i>	<i>("covid-19" OR "coronavirus" OR "2019-ncov" OR "sars-cov-2" OR "cov-19") AND ("quality of life" OR "well-being" OR "well-being" OR "health-related quality of life") AND ("teleworking" OR "telework" OR "remote working" OR "telecommuting" OR "flexible workplace")</i>	13	10/05/2023
<i>MedicLatina®</i>	<i>("covid-19" OR "coronavirus" OR "2019-ncov" OR "sars-cov-2" OR "cov-19") AND ("quality of life" OR "well-being" OR "well-being" OR "health-related quality of life") AND ("teleworking" OR "telework" OR "remote working" OR "telecommuting" OR "flexible workplace")</i>	2	10/05/2023

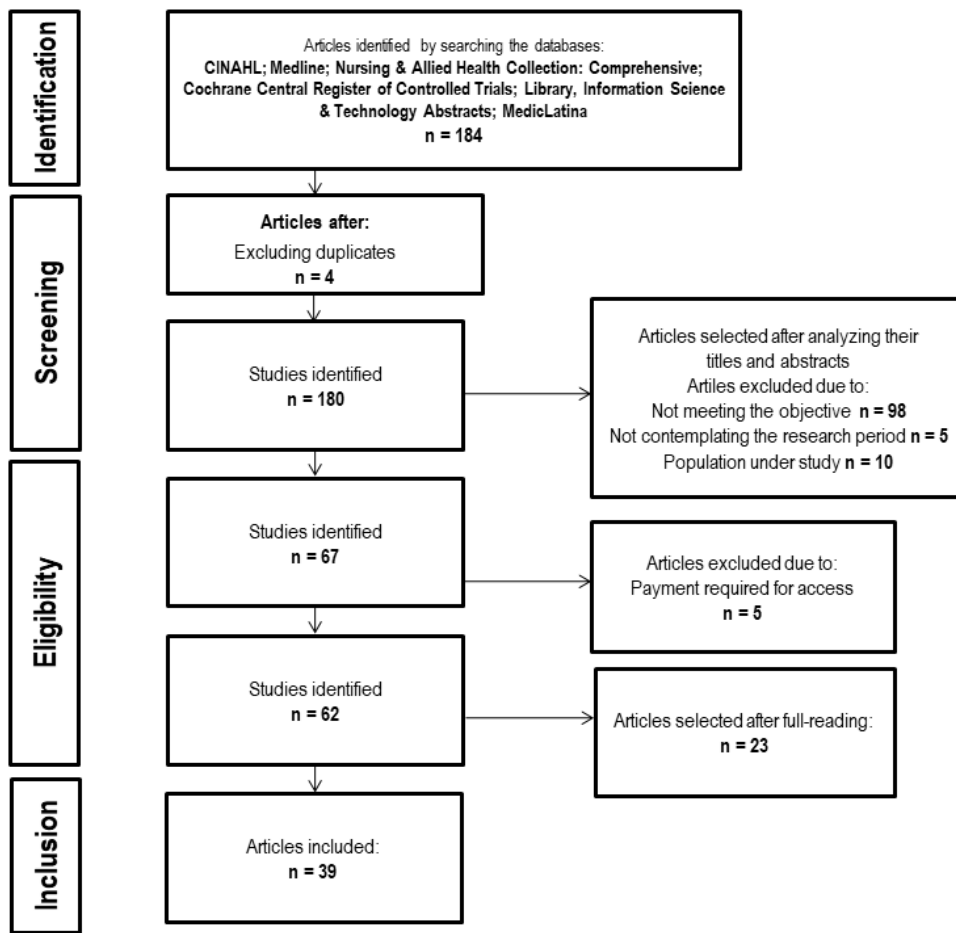
Source: The authors, 2023.

### Information sources

The search strategy and identification of studies was carried out in October 2023 on the following electronic databases: CINAHL® (via EBSCOhost®); MEDLINE Complete® (via EBSCOhost®); Nursing & Allied Health Collection: Comprehensive® (via EBSCOhost®); Cochrane Central Register of Controlled Trials® (via EBSCOhost®); Library, Information Science & Technology Abstracts (via EBSCOhost®); and MedicLatina® (via EBSCOhost®).

### Selection of the studies

The records identified in the databases will be exported to the Rayyan® – Intelligent Systematic Review platform<sup>(11)</sup>, where the studies will be selected. The initial selection will be based on identification and removal of duplicates, followed by an analysis of the titles and abstracts. The remaining studies from the previous stage will then be analyzed by carefully reading the full texts to check their eligibility. The reasons for excluding full-text studies that do not meet the inclusion criteria will be recorded and described in the scoping review. The entire selection process will be carried out by two independent reviewers. Any and all discrepancies arising between the reviewers at each stage of the selection process will be solved through discussion or with a third reviewer. The selection process will be documented using a PRISMA flow diagram, as shown in Figure 1<sup>(9)</sup>.



**Figure 1.** Flowchart of the process to identify, select and include the studies, based on the PRISMA recommendation.

Source: The authors, 2023.

### Data extraction

Data extraction will be carried out in accordance with the JBI<sup>®</sup> recommendations <sup>(10)</sup>. The data extracted from the studies will include a data extraction tool developed by the authors themselves, which is made up of the following generic data items: authors; publication year, geographical location and context; study type and design; research objectives and question; sample size; and gender, as identified in Chart 3. In order to extract data on work characterization, Chart 4 was prepared, consisting of the following items: study identified, topics identified and concepts relevant to the review question. Finally, Chart 5 aims at extracting data related to WRQoL, such as environmental context, social environment, living conditions, personal satisfaction, and culture and society.

**Chart 3.** Generic data extraction tool

<b>Characterization of the information source</b>	
<b>Extraction item</b>	<b>Information to extract</b>
Author	Last name of each study author
Publication year	Year when the material was published
Geographical location and context	Main author's country of origin and context in which the study was carried out
Study type and design	Describe the study design reported by the author
Research objectives and question	Check the relevance of the research objectives and question of the publications
Sample size	Significance of the sample
Gender	Sample distribution according to gender

Source: The authors, 2023.

**Chart 4.** Work characterization data extraction tool

<b>Characterization of the information source</b>		
<b>Extraction item</b>	<b>Information to extract</b>	
Study identified	Through the bibliographical references	
Topics identified	Results of qualitative and quantitative studies	
Concepts relevant to the review question	Type of work	Characterization of the type of work
	Type of teleworking	Characterization of teleworking
	Durability	Teleworking duration

Source: The authors, 2023.

**Chart 5.** WRQoL data extraction tool

<b>Characterization of the information source</b>	
<b>Extraction item</b>	<b>Information to extract</b>
Environmental context	Check the study context
Social environment	Describe the study environment
Vital conditions	Social stratification of the studies
Personal satisfaction	Check the participants' satisfaction level
Culture and society	Identify the different cultures present in the studies

Source: The authors, 2023.

## Data presentation

A total of 39 articles were identified, which will be presented in a descriptive and narrative way according to the evidence charts prepared by the researchers, with the possibility of being further refined during the review to improve interpretation of the results. Data presentation and interpretation will be guided by the JBI® recommendations <sup>(10)</sup> for scoping reviews, by resorting to Chart 6. The studies will be assessed using version 5 of the Professional Quality of Life Scale (ProQOL5) (Stamm, 2010) translated and validated for the Portuguese population by Carvalho and Sá (2011) <sup>(12)</sup>.

Chart 6. Data extraction tool developed for workers' quality of life

WRQoL indicators	Quantitative/Qualitative studies		
	Before	During	After
Compassion Fatigue			
Burnout			
Compassion Satisfaction			

Source: The authors, 2023.

## FINAL CONSIDERATIONS

Given the changes in today's world in relation to health and the impact exerted by the COVID-19 pandemic on WRQoL, it becomes fundamental to map its impact, more specifically on teleworkers, as that they are exposed to various factors. In different roles, the stress, motivation and satisfaction levels can vary in different jobs and organizational segments. The scientific evidence selected and analyzed will help to reflect on the best and most up-to-date practices in this area, allowing to clarify the contributions. This is why organizations should promote the implementation of WRQoL and job satisfaction programs, taking into account each person's particularities. It is hoped that this scoping review will contribute to formulating new research questions that will allow developing systematic reviews on the impact of teleworking during the COVID-19 pandemic.

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