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IMPACT OF MUSCULOSKELETAL PAIN ON HIGHER EDUCATION TEACHERS: PROTOCOL FOR SYSTEMATIC REVIEW OF OBSERVATIONAL STUDIES

IMPACTO DA DOR MUSCULOESQUELÉTICA EM PROFESSORES DO ENSINO SUPERIOR: PROTOCOLO DE REVISÃO SISTEMÁTICA DE ESTUDOS OBSERVACIONAIS

IMPACTO DEL DOLOR MUSCULOESQUELÉTICO EN DOCENTES DE EDUCACIÓN SUPERIOR: PROTOCOLO PARA UNA REVISIÓN SISTEMÁTICA DE ESTUDIOS OBSERVACIONALES

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ABSTRACT
This article is a systematic review protocol that will evaluate the incidence and distribution sites of musculoskeletal pain in higher education teachers. It will be a systematic bibliographic review study conducted according to the Cochrane methodology. Observational studies will be included, following the "PECO" methodology described below: Population: Teachers working in higher education and/or technical education. Exposure: Presence of musculoskeletal pain. Comparator: No musculoskeletal pain. Outcomes: incidence of musculoskeletal pain and Sites/regions of incidence of musculoskeletal pain. Observational studies that report metrics associated with the site of musculoskeletal pain in teachers working in Brazilian higher education will be included. The exclusion criteria will be: studies conducted with elementary and/or primary school teachers and conducted in other countries. The electronic databases Latin American and Caribbean Health Sciences Literature (LILACS), MEDLINE, IBECS, LIPECS, Sec. Munic. Saúde SP and Coleciona SUS on the Virtual Health Library, PEDro and Scielo websites until February 2025. Health Sciences descriptors (DECs) such as “musculoskeletal pain” and “teachers” will be used. It is expected that this study can help teachers who face work overload, long teaching hours and repetitive physical activities.

KEYWORDS: Musculoskeletal Pain. Cumulative Trauma Disorders. Faculty. Systematic Review.

RESUMO
O presente artigo versa de um protocolo de revisão sistemática que avaliará a incidência e os locais de distribuição da ocorrência da dor musculoesquelética em professores do ensino superior. Será um estudo bibliográfico de revisão sistemática realizado de acordo com a metodologia Cochrane. Serão incluídos estudos observacionais, seguindo a metodologia "PECO" descrita adiante: População: Professores atuantes no ensino superior e/ou ensino técnico. Exposição: Presença de dor musculoesquelética. Comparador: Não dor musculoesquelética. Outcomes: incidência de dor musculoesqueléticas e Locais/regiões de incidência de dor musculoesquelética. Estudos observacionais que reportarem métricas associadas ao local da dor musculoesquelética de professores atuantes no ensino superior brasileiro serão inseridos. Os critérios de exclusão serão: estudos realizados com professores do ensino básico e/ou fundamental e realizados em outros países. Serão

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consultadas as bases de dados eletrônicas Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS), MEDLINE, IBECS, LIPECS, Sec. Munic. Saúde SP e Coleciona SUS no sítio da Biblioteca Virtual da Saúde, PEDro e Scielo até fevereiro de 2025. Serão utilizados os descritores em Ciências da Saúde (DECs) tais como “dor musculoesquelética” e “docentes”. Espera-se que este estudo possa auxiliar os docentes que enfrentam sobrecarga de trabalho, longas jornadas de ensino e atividades físicas repetitivas.

PALAVRAS-CHAVE: Dor Musculoesquelética. Transtornos Traumáticos Cumulativos. Docentes. Revisão sistemática.

RESUMEN
Este artículo trata sobre un protocolo de revisión sistemática que evaluará la incidencia y los sitios de distribución del dolor musculoesquelético en docentes de educación superior. Será un estudio bibliográfico de revisión sistemática realizado de acuerdo con la metodología Cochrane. Se incluirán estudios observacionales, siguiendo la metodología “PECO” que se describe a continuación: Población: Docentes que trabajan en educación superior y/o educación técnica. Exposición: Presencia de dolor musculoesquelético. Comparador: No hay dolor musculoesquelético. Resultados: incidencia del dolor musculoesquelético y localizaciones/regiones de incidencia del dolor musculoesquelético. Se incluirán estudios observacionales que informen métricas asociadas a la localización del dolor musculoesquelético en profesores que trabajan en la educación superior brasileña. Los criterios de exclusión serán: estudios realizados con docentes de escuelas primarias y/o elementales y realizados en otros países. Las bases de datos electrónicas Literatura Latinoamericana y del Caribe en Ciencias de la Salud (LILACS), MEDLINE, IBECS, LIPECS, Sec. Munic. Saúde SP y Coleciona SUS en el sitio web de la Biblioteca Virtual en Salud, PEDro y Scielo hasta febrero de 2025. Se utilizarán descriptores de Ciencias de la Salud (DEC) como “dolor musculoesquelético” y “docentes”. Se espera que este estudio pueda ayudar a los docentes que enfrentan sobrecarga de trabajo, largas horas de enseñanza y actividades físicas repetitivas.

PALABRAS CLAVE*: Dolor musculoesquelético. Trastornos de trauma acumulativo. Profesores. Revisión sistemática.*

INTRODUCTION

Musculoskeletal pain is a widely prevalent health condition in the working population, significantly impacting various sectors, including education professionals. In the Brazilian context, higher education teachers face specific challenges associated with the demands of their profession, including long working hours, inadequate posture during lectures, excessive use of electronic devices, and high mental workload[1]. These conditions create an environment conducive to the development of musculoskeletal pain, especially in regions such as the spine, shoulders, and upper limbs. Studies show that the impact of musculoskeletal pain is not limited to physical suffering but also affects these professionals' quality of life and productivity [1,2].

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Extended and often fragmented working hours are among the main factors contributing to the emergence of musculoskeletal pain in higher education teachers. Many of these professionals accumulate tasks such as class preparation, research development, academic advising, and participation in academic events. This routine can generate physical and mental overload, favoring muscle tension and the onset of chronic pain. Additionally, the lack of regular breaks and adequate rest spaces in the university environment exacerbates the problem [3].

Another relevant factor is poor posture during work activities. Teachers often spend hours sitting or standing, performing repetitive movements such as typing or writing on the board. These postures can overload the spine and upper limbs, leading to persistent pain. Studies conducted in Brazilian universities indicate that the cervical region is one of the most affected, followed by the lumbar region and shoulders [4].

Inadequate ergonomics in workplaces is a critical factor that still does not receive the necessary attention from educational institutions. Musculoskeletal pain also has significant consequences for teachers' mental health. The relationship between chronic pain and psychological disorders, such as anxiety and depression, is well established in the literature [5].

In Brazil, where academic pressure often adds to the structural difficulties of universities, such as lack of resources and student overload, the combination of physical pain and mental suffering can lead to professional burnout. This scenario affects not only teachers' health but also the quality of the education provided [6].

At the institutional level, little attention is still given to prevention and management programs for musculoskeletal pain in higher education teachers. Although some Brazilian universities have implemented initiatives aimed at promoting occupational health, such as awareness campaigns and ergonomic evaluations, these efforts are still insufficient to meet the existing demand. Expanding these actions is essential to reduce the incidence of musculoskeletal pain and improve these professionals' well-being [4-6].

Therefore, the impact of musculoskeletal pain on higher education teachers in Brazil is a multifactorial problem that requires integrated solutions. It is crucial that higher education institutions invest in prevention and intervention policies, such as ergonomic training, adequate workspaces, and the incorporation of scheduled breaks into work routines. Furthermore, greater investment in research focused on teachers' occupational health is necessary to better understand risk factors and develop effective strategies to mitigate the impacts of musculoskeletal pain in Brazilian higher education. This

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study aims to identify the incidence and most affected regions of musculoskeletal pain in higher education teachers.

METHODS

This is a systematic bibliographic review study that will be conducted according to Cochrane methodology to identify the distribution sites of musculoskeletal pain occurrence in higher education teachers. This systematic review will follow PRISMA guidelines for its reporting.

Eligibility Criteria

The systematic review will assess the incidence of musculoskeletal pain in higher education teachers. Observational studies will be included following the "PECO" methodology:**Population**: Higher education and/or technical education teachers.**Exposure**: Presence of musculoskeletal pain.**Comparator**: No musculoskeletal pain.**Outcomes**: Incidence and regions of musculoskeletal pain occurrence.

Inclusion and Exclusion Criteria

Observational studies reporting metrics associated with musculoskeletal pain location in teachers working in Brazilian higher education will be included. **Exclusion criteria**: Studies conducted with elementary and/or primary school teachers and studies conducted in other countries.

Search Strategy

The following electronic databases will be consulted:Latin American and Caribbean Health Sciences Literature (LILACS),MEDLINE,IBECS,LIPECS,Sec. Munic. Saúde SP,Coleciona SUS on the Virtual Health Library website, PEDro and Scielo.

The search strategy will be developed for LILACS and modified as needed for other databases. Health Science descriptors (DECs) and Medical Subject Headings (MeSH) such as “musculoskeletal pain” and “teachers” will be used. There will be no language restrictions, but only studies on humans will be selected. The references of selected articles, including relevant review articles, will be reviewed to identify all relevant studies. Grey literature will be searched manually, and Google Scholar will be used. If necessary, the authors will be contacted for unavailable information.

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Study Selection and Data Extraction

Two researchers will independently review titles and abstracts for eligibility. Disagreements will be resolved by consensus or discussion with a third investigator. The PRISMA guidelines will be followed for the study selection flowchart.

Two researchers will independently extract relevant data from each full-text article using a standardized form based on the Cochrane Handbook, including publication year, country, number of participants, population, objectives, and instruments used for analysis. Selection accuracy will be compared, and discrepancies resolved by consensus or discussion with another investigator (RCR).

Risk of Bias Assessment in Observational Studies

Two investigators (ASAV and MRKR) will independently assess the risk of bias of eligible studies. Discrepancies will be resolved by consensus or discussion with another investigator (RCR). The Newcastle-Ottawa Scale (NOS)[9] will be used to assess the methodological quality of observational studies by two independent reviewers. Some discrepancies will be resolved by discussion with the third author. The scale consists of eight items covering three dimensions: 1) patient selection (four items); 2) comparability of the two study arms (two items); and 3) outcome assessment (three items). Subsequently, the risk of bias graph was created using RevMan software [10].

Data Analysis

A meta-analysis will be conducted using random-effects models and the Mantel-Haenszel method. Associations will be reported as relative risks (RR) with 95% confidence intervals (CI). Heterogeneity will be tested using Cochrane's $\chi 2$ test, and the degree of heterogeneity will be quantified with the I2 statistic and its 95% CI. Review Manager (RevMan) software will be used for all analyses (version 5.3; Nordic Cochrane Centre, Cochrane)[10].

Ethical Considerations

This systematic review is exempt from ethical analysis according to Article 1 of Resolution 510, April 7, 2016, as it is a review of the scientific literature.

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