

## Prevalence of occupational diseases in women in Universities: Review Article

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### Abstract

**Introduction:** The research hereby presented is about the disease process of the working woman, understood from a socio-historical perspective of the worker. When talking about workers, specifically about women, various factors influence their entry into the job market. It can be perceived that the work division by gender contributes to the inequalities between women and men in several ways, particularly when it comes to health. When not dealing with the existing differences between social gender conditions, these can affect in the comprehension of work for women, in their working conditions and consequently, in matters related to the health prevention at work. **Objective:** To identify the prevalence of occupational diseases within women in universities. **Methods:** This systematic review was elaborated taking as a basis the PRISMA Statement methodology, retrieving articles from the Scopus and Web of Science electronic databases, and associating the prevalence of occupational diseases within women in universities. **Obtained** The obtained information was analyzed along with the official data provided by the International Labour Organization-ILO and the World Health Organization-WHO. **Discussion.** Searches provided outcomes about the evidence on the technologies, benefits and even discussions on how the working conditions particularly affect women and represent potential causes of diseases that can negatively impact the quality of life at work, and therefore, prove the need of comprehensive data collection with the aim of contributing to modify that reality. Within studies, initial considerations promote the possibility of deepening knowledge with new searches. **Conclusions:** Results demonstrate the importance of perceiving the diseases within specific professional categories, hereby represented by the health professionals, professors, and administrative technicians. The article brought the contribution of studies that prove the importance of perceiving the female worker's profile, considering besides age, the associated diseases as well as the diseases that despite not being declared as occupational, perturb the work environment and need to be deepened as such. From the studied articles, this work proves the need for extending the searches oriented to perceive the factors that cause the highest percentages of diseases within women.

**Keywords:** Prevalence, Occupational diseases, Women, Universities.

### INTRODUCTION

The research consists of a reflection on the process of illness of women university workers. According to the report of the International Labour Organization (The International Labour Organization, 2018), it points out that women tend to have more responsibilities. As can be seen in the ways in which they enter the labour market and other aspects of their living and working conditions, reconciling them with their own and their families' reproductive activities has implications for health care. The different effects of risks and illnesses differ between men and women, both in the possible higher rates of illness, which can impact on reproductive health risks, the physical demands of heavy work, the ergonomic design of workplaces, the length of the working day and domestic tasks. These issues require a more gender-sensitive approach to research and prevention. The European Agency for Safety and Health at Work considers that the gender approach to safety and health at work cannot be considered neutral, as it has contributed to forms of illness and has harmed women and left a vacuum in specific policies and legislation. Given this fact, it was defined that this theme would have a place in the Research Priorities in the field of occupational safety and health in Europe: 2013-2020 (Centro Temático – Segurança e Saúde no Trabalho, Sas, & Suarez, 2014). When dealing with occupational diseases to which women are exposed, it is necessary to consider that there are important differences between men and women, the entire work process deserves to be recognized, as well as the social factors that measured labor relations, economic and cultural issues. The understanding of these interrelationships is only possible with the use of gender and equity as categories of analysis of the work environment, which may make it possible to break with the idea of thinking about the health of women workers from the perspective of maternity or fragility. It is necessary to perceive norms as these relationships occur and, if sexist paradigms predominate, or

otherwise walks in the evolution towards the promotion of equality between men and women, essential for the construction of balance in relationships and working conditions. When we refer to the illness of women and labour relations, it is necessary to integrate the gender dimension in all research topics. It is of fundamental importance when we consider that there are still differences in social relations between the sexes, which leads to social inequalities. The agenda remains and is far from achieving equity. Current research on the use of women's time is predominantly on the responsibility of domestic work and they devote more time to this type of task. What proves in the resulting survey in the Annual Socioeconomic Report of Women of 2013, this affirms that among people aged 16 years or more, 68% of women declare to perform domestic chores, in opposition to 32% of men. In addition, among employed women, the dedication to domestic work is 22.3 hours per week, as opposed to 10.2 hours dedicated by men, which means that the total day of women, adding paid and unpaid work, is on average 58.5 hours per week, while that of men and 52.7 hours per week (Areias & Guimarães, 2004). Understanding gender is to understand the complex social processes through which people are defined and connected and how this evolution occurs over time. This process is intrinsic to all instances of society, whether institutional or not (Manandhar, Hawkes, Buse, Nosrati, & Magar, 2018). To pay attention to gender equality is also to think about economic growth. The data show that there has been great progress towards legal gender equality in the last decade, in 131 economies and 274 reforms of laws and regulations, which has made it possible to lead to an increase in gender equality. However, achieving gender equality requires more than just changes in laws. Even with all the changes that have occurred, a typical economy only gives women three-quarters of men's rights in the areas measured (average overall score is 74.71), indicating that a typical economy only gives women three-quarters of men's rights in the areas measured. To be truly and effectively implemented, changes must be sought, among others, ingrained cultural norms and attitudes ("Women, Bus. Law 2019," 2019). When considering this information, this study aims to know research that can bring data on the prevalence of occupational diseases in women in universities.

## METHODOLOGY

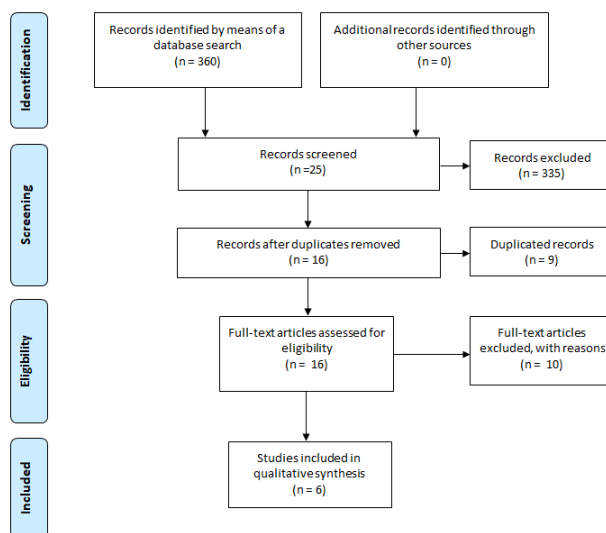
This systematic review was developed using the Prisma Statement tool (Moher, 2015), using the Mendeley manager. The Scopus and Web of Science databases were used to search for a combination of key words with the following combination: prevalence + disease + occupational in woman; prevalence + disease + occupational + woman + university from the objective of the study. The survey was conducted in the period from January 3 to 4, 2019. From the initial study, restrictions were made on articles that did not specify the issue of occupational diseases in women at universities, which include university hospitals and university training centers. The eligibility criterion covered the time interval from 2015 to 2018. The English language. The type of document were articles, and the sources were systematically reviewed and revised. The manual was read in a document of the International Labour Organization – ILO, Bulletin of the World Health Organization and Women and Business and the Law 2019. Lines below, Table 1 details the applied keywords and the respective number of articles resulted from them.

**Table 1.** Databases: Scopus and Web of Science

KEYWORDS	*SCOPUS	TOTAL	2015 TO 2019	AFTER ABSTRACT READING
Prevalence and disease occupational and women and universities		124	31	7
Disease occupational and women and worker universities		162	39	7
<b>KEYWORDS</b>	<b>*WEB OF SCIENCE</b>	<b>TOTAL</b>	<b>2015 to 2019</b>	<b>AFTER ABSTRACT READING</b>
Prevalence and disease occupational and women and universities		40	13	5
Disease occupational and women and worker universities		34	07	6
<b>Total</b>		25		
<b>Duplicates</b>		09		
<b>Read studies</b>		16		
<b>Studies excluded in total</b>		10		
<b>Studies included in the review article</b>		06		

\*DATE OF SEARCH: 3.1.2019

Figure 1 shows the Prisma Flowchart 2009 (Adapted) with the mapping of all the researches developed, resulting in the articles included for this review. Table 2 shows the included articles in this research.

**Figura 1.** Prisma 2009 Flow Diagram (adapted)

**Table 2.** Articles included in the systematic review.

1 <sup>st</sup> AUTOR	YEAR COUNTRY	TITLE (ORIGINAL)	TYPE OF STUDY	PREVALENCE/ILLNESS
<b>Nazmiye Koyuncu, Özgür Karcioglu</b>	2018 EEUU	Musculoskeletal complaints in healthcare personnel in hospital: An interdepartmental, cross-sectional comparison	Cross-sectional prospective study	Female gender, high income, university degree, nursing or medical work, and advanced age may demonstrate a higher prevalence of EMF in the hospital's PCS.
<b>Flavia D'agostin &amp; Corrado Negro</b>	2017 Italy	Symptoms and musculoskeletal diseases in hospital nurses and in a group of university employees: a cross-sectional study.	Cross-sectional study	The study confirmed the multifactorial origin of MSDs and showed that physical and psychosocial work factors (type of work, characteristics of physical burdens) and individual factors (female, advanced age) were associated with the prevalence of MSDs.
<b>Malin Lohela- Karlsson Et Al</b>	2018 Sweden	Perceived health and work-environment related problems and associated subjective production loss in an academic population.	Cross-sectional study	The prevalence of health problems only or a combination of work environment and health problems was higher among women than men (p-value < 0, 5).
<b>Arvidsson I, Et Al.</b>	2016 Sweden	Cross-sectional associations between occupational factors and musculoskeletal pain in women teachers, nurses, and sonographers.	Planned Prospective Cohort Study.	In women, the effect of working with computers at UEMSP has been considerably increased in the presence of emotionally demanding work, and can also be tempered by low recognition at work, contradictory demands at work and low support from the supervisor.
<b>Leão, Sylvia H. De S. Et, al</b>	2015 New Zealand	Voice problems in New Zealand teachers: a national survey.	Cross-sectional Epidemiological Survey	Women embarking on a teaching career can anticipate more voice problems than their male teaching colleagues; and therefore voice education is particularly vital for women entering the profession.
<b>Yun, M. J., Kim, Y. K., Kang, D. M., Kim, J. E., Ha, W. C., Jung, K. Y., &amp; Choi, H. W.</b>	2018 Republic of Korea	A Study on Prevalence and Risk Factors for Varicose Veins in Nurses at a University Hospital	Questionnaire and ultrasound examination	This study is significant in that an objective diagnosis of VVs preceded the analysis of the risk factors for VV incidence, thus verifying objectively that VVs are associated with occupations requiring prolonged hours of working in a standing position.

## RESULTS AND DISCUSSION

The searches bring information on the evidence of technologies, benefits and even discussions on how the working conditions particularly affect women, who denote potential reasons for diseases that could negatively alter their quality of life at work. Consequently, there is a need for deepening in collected information, with the goal of changing that reality. Within the first study, college graduation, nursing, and advanced-age doctors demonstrate a higher prevalence of musculoskeletal complaints (MSC) in the healthcare workers (HCWs) at a hospital (Koyuncu & Karcioglu, 2018). Musculoskeletal symptoms, in addition to the female gender condition and the ageing issue in the prevalence of the Work-Related Musculoskeletal Disorder-WMSD, the study of D'Agostin & Negro (2017), confirms the factors: psychosocial, the issue of female gender and ageing, in the prevalence of those diseases. The investigation from (Arvidsson et al.,

2016), affirms that both physical and psychosocial factors are associated with pain even though their studied groups present situations differently. In relation to professors, they indicate that there was a lower physical workload and improvements in the working environment should be guided to psychosocial aspects. On the other and, the surgical team in hospitals and the ultrasonographers can be benefited from preventive measures related to the physical workload, considering a reduction of hand strength demands among nurses. The work on the Prevalence of Symptoms and the Risk of the Obstructive Sleep Apnea Syndrome (OSA), evidencing a higher percentage of women (representing 67%) has an added value for (Cadelis & Fayad Y Monteagudo, 2016) to develop a screening on the OSA that could be later implemented within Occupational Health. In fact, the author states that it is not yet considered as an occupational disease. Reviewing the studies of (Lohela-Karlsson, Nybergh, & Jensen, 2018), female academic personnel demonstrate a higher prevalence of health problems resulted from a combination of the work environment factors and even evidence a higher severity on those health issues when compared to men. In the work developed by (Leão, Oates, Purdy, Scott, & Morton, 2015), it is stated that women with teaching careers can have more voice problems than their male colleagues. Authors do not discuss the causes for this fact. However, they indicate that the next research phase will be focused on investigating the potential factors leading to voice problems within professors in field conditions. The work of (Kim et al., 2017) studies varicose veins in nurses from a University Hospital. This investigation was developed to determine the occupational risk factors for VVs and their prevalence among the nursing workforce, considered as a high-risk occupational group. The author affirms that although the research was developed with a 90% of women and there were not conditions for comparison with men; there are indicators from past investigations (referenced in the article) that point out a higher risk for women.

## CONCLUSIONS

The articles read and analyzed demonstrate a greater perception of the prevalence of diseases in female workers at universities, represented here by women: health professionals, teachers and administrative technicians and incidence of diseases in certain professional categories, considering besides age, associated diseases. It also made it possible to perceive a disease that is not considered occupational, but that suggests studies in this direction, as it permeates the work environment and lacks deepening as such. This study is the first of some studies intended to make and contribute to the perception of the illness of female university workers and consequently considering the improvement in working conditions.

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