

## Research Article

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## The Impacts of Obesity Related to the Stressors of Nurses

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### Introduction

In the era of globalization, the distribution of work activities, increased competitiveness in the labor market and fear of unemployment end up inducing workers to submit to terrible working conditions, with low wages, moral and sexual harassment, accumulation of functions, load excessive hours, among others. These factors can contribute to an imbalance in the emotional state, eating pattern, physical activity routine, sleep and, thus, leading to the emergence of psychological and metabolic diseases [1].

Specifics of the nurse's work, such as working shifts in rotating shifts that vary between morning, afternoon and night, with long working hours, in addition to patient care at the bedside, are factors that can negatively affect the lives of professionals and lead to consequences in their health such as obesity, sleep, mood and digestion disorders [2-4].

These associated factors are some of which we can classify as stressful elements in nurses' work and that cannot be ignored in the context of their quality of life at work. Risk factors associated with obesity among workers include social stressors, psychosocial work factors, working hours, night work and sedentary behavior.

Among the possible health problems, obesity is a prevalent disease, which has impacts on the individual's quality of life, and may even have limiting effects at work. Two studies indicate a prevalence of obesity of 44% and 54% among nurses and two other studies show a prevalence between 25 and 35% [5,6].

Nurses who are obese or with diseases associated with obesity may have difficulty performing some procedures that require certain physical aspects such as access to tight spaces, range of motion and mobility, cardiopulmonary resuscitation, assistance to patients in limited spaces such as bathrooms [7,8].

A study based on the 2002 National Health Interview Survey found that 9,636 obese workers had more than twice the work limitation of normal-weight workers. Workers with obesity had a prevalence of 6.9% of work limitations versus 3.0% among workers with normal weight.

discusses the prevalence of obesity among nurses compared to other health professionals who are less likely to work shifts and have disruptive work patterns that contribute to obesity [8,9].

With increasing levels of obesity among workers, employers are evaluating the impact of weight gain not only on health care costs but also on work-related injuries, absenteeism, presenteeism and therefore focusing on on-the-spot interventions to address this public health problem [10].

As for the interventions and strategies used to deal with obesity in nurses found in the literature, some studies focused on physical activity and dietary interventions. Other studies recommend changes in nurses' activity in the workplace (eg, walk meetings) or exercise routines incorporated into the workday [11]. There are also studies that recommend incentives or challenges to motivate nurses to increase their physical activity or consumption of fruits and vegetables and studies that suggest motivational strategies, such as setting goals, personalized health training or motivational emails [12,13].

The investment in the team's health, in turn, would benefit the health service in terms of sustainability and high-quality patient care, through positive impacts on productivity, retention and absence rates, through improved morale, satisfaction at work and well-being.

By understanding some of the organizational and psychosocial factors of these jobs, more targeted and perhaps more effective interventions can be carried out, which justifies this research. With this in mind, we sought, through this review, to identify the impacts of obesity related to stressors in the work of nurses in hospital institutions and with the information collected, prepare an e-book for these professionals, seeking to reduce the prevalence of this disease and draw attention for the biopsychosocial factors related to it.

### Methods

This is an integrative review, a research method for the incorporation of evidence in health, which enabled the search, critical assessment and synthesis of available evidence on obesity and stressors in the nurses' work context. This method is composed of six phases that are inherent to it: identification of the research question, literature search, categorization of studies, evaluation of studies included in the review, interpretation of results and presentation of the research review. Based on this review, an e-book was prepared with recommendations in order to develop the management of obesity and stressors in the workplace of nurses

in hospital institutions, seeking to prevent obesity and the risks related to it among these professionals [14].

For the review, the following research question was elaborated: What are the impacts of nurses' obesity on work relationships in hospital institutions? To conduct the search strategy, keywords corresponding to the question were used, with the Boolean operators AND and OR.

Figure 1: demonstrates the search strategies used in the databases selected for the review: LILACS, MEDLINE, PUBMED and SciELO.

**Figure: 1 Search strategy using Boolean Operators. Rio de Janeiro, RJ, Brazil**

Nursing	AND	Obesity	AND	Worker's health
workday	AND	Public hospitals	AND	
Worker's health	AND	Nursing work	AND	Nurse
Nurse	AND	occupational risk	AND	
hospitals	AND	College students	AND	Outsourcing
Nursing	AND	Worker's health	AND	Epidemiology

Stressors were not included in the search in the databases for the development of this integrative review, as we initially sought to understand the phenomenon of obesity, but after a critical reading of the articles incorporated in this review, the results of our research provided substantial evidence of the importance of stressors in the correlation with obesity from the perspective of the nurse's work and due to the relevance of these factors and their association with obesity, the research was redirected by the need to incorporate these factors into the theme.

The inclusion criteria adopted to guide the search and selection of publications were: articles published in national and international scientific journals between 2009 and 2019, in Portuguese, English or Spanish, locatable through the following descriptors; nursing, obesity, workers' health, working hours, public hospitals, occupational nursing, nurses, occupational risk, outsourcing, epidemiology and overweight.

After completing the search for articles in the databases, duplicate studies were removed and selection was performed according to the eligibility criteria. Data extraction took place using a standardized instrument designed by the author.

Based on the evidence found in this integrative review, an e-book was prepared in two phases: Analysis phase and Development phase, based on what was proposed by [15]. In the Analysis phase, the literature data collected in the first phase of this research, which was the integrative literature review, were considered. In the Development phase, the form of presentation of the content in topics containing texts and images, elaborated in the Power Point program, was conceived, with subsequent export of the content to the form of video.

## Results

970 articles were found in all databases selected for this research. After identifying and excluding duplicate studies, the titles and abstracts of the remaining articles were read to select the studies for full reading using the inclusion criteria. After a full evaluation, 15 articles were selected that characterized the sample of this study.

Figure 2: represents the number of articles found and included in the results according to the database. An article was repeated in three databases.

**Figure 2: Articles found following the Boolean operators. Rio de Janeiro, RJ, Brazil**

Data base	Articles found	Articles included
Lilacs	850	8
Medline	0	0
Scielo	70	1
Pubmed	50	6
Total	970	15

Of the 15 articles selected with this theme, 40% correspond to nursing workers, 20% correspond to eligible nurses, 13% correspond to temporary workers, 13% eligible nursing workers, 7% to night workers and 7% to health workers.

From this sample of 15 articles, the majority analyzed used questionnaires as a data collection instrument (47%), 20% used interviews, 20% were review articles and 13% used research in institutional documentation.

Regarding the scientific journals where the articles were published, studies in the same proportionality were found in the journals of USP (n=1), PUCRS (n=1), UERJ (n=1) and COFEN (n=1). In the Scielo database, 9 articles were found, corresponding to 60% of the sample, while two articles were found in Lilacs (13%).

Regarding the year of publication, most articles were published in the year 2010 (n=3), followed by 2014 (n=2) and 2015 (n=2) and one article per year in 2009, 2011, 2012, 2013, 2016, 2017, 2018 and 2021.

As for the methodology used in the articles, 53% are cross-sectional population-based, 20% are integrative review, 13% are quantitative and 7% are qualitative.

Figure: 3 presents a summary of the articles found in this integrative review.

**Figure 3: Summary of articles included in the review**

Author	Study Title	Kind of study/ Methodology	Study Population	Study Categorization	Summary of Results
FERNANDES et al., 2017	Workday and health in public hospital nurses according to gender	Cross-sectional, population-based study.	Eligible nurses.	They point to characteristics of the nurse's work, consequences and stressors.	Among women, the group corresponding to the longest working week was more likely to report their health assessment as regular, when compared to those with a short shift. Among men, those with average hours were more than twice as likely to rate their health as regular compared to short hours.
SILVA et al., 2016	Effects of work on the health of nurses working in clinical surgery	Cross-sectional, population-based study.	Nurses who work in clinical surgery at university hospitals.	They point to stressful factors in the work of nurses.	Considering the effects of work on the health of nurses, physical damage (pain in the legs and back) was identified as the highest average, followed by social damage (willingness to be alone and impatience with people) and psychological damage (bad mood and irritation with everything). An association was found between psychological damage and work accident; psychological damage and option for the work shift; social harm and physical activity.
VIEIRA et al., 2018	Precariousness of work in a teaching hospital and presenteeism in nursing	Qualitative, descriptive study, having as field a public hospital located in the city of Rio de Janeiro.	Temporary worker.	They point out characteristics of the work and its management.	There is a need for an institutional policy aimed at reducing work, which can minimize the occurrence of presenteeism and damage to performance and quality of service.
ALVES et al., 2015	The flexibilization of work relationships in health: the reality of a Federal University Hospital	Integrative literature review.	Outsourced worker at the teaching hospital.	They point out stressors at work in health.	The flexibilization of work relations became an obstacle within the scope of this university hospital, contributing to the precariousness of work and the lack of social protection for workers.
KINGS; BRAGA, 2015	Night work and its impacts on the health of the nursing team: an integrative review	Integrative literature review from September 23 to 25, 2013.	Nursing night worker.	They point out characteristics and mission or values of the nurse's work.	Occupational nurses should focus on building the promotion, prevention and recovery of workers' health, carrying out activities to identify and reduce health risks for this specific group.
MACHADO et al., 2014	Health problems reported by nursing workers	Cross-sectional population cohort study.	Nursing workers at a hospital in Bahia.	They point out the perception about the work of nursing.	The study evidenced the need for greater awareness of the work process and performance of preventive activities.
SILVEIRA et al., 2013	Overweight and obesity profile in nursing workers in intensive care and emergency units	Cross-sectional population cohort study.	Nursing workers in intensive and emergency units.	Characterization of obesity and notes on important questions about obesity and stressors.	In the investigated workers, a high percentage of overweight and obesity was evidenced. Changes in lifestyle habits, especially the inclusion of a healthy diet and the practice of physical exercise, are important and necessary measures for the prevention and control of cardiovascular diseases. considering the increasing increase in overweight and obesity in our society.

FELLI, 2012	Nursing working conditions illness reasons for reducing the working day to 30 hours	Integrative literature review.	Nursing worker.	Management and quality of the work environment, quality of life at work, stressors.	It was found that the nature of the object of nursing work and health institutions are typically unhealthy, as well as there are limitations to instituting new forms of organizing this work. However, it is possible to control unhealthy conditions, dangerousness, hardship and, therefore, wear and tear on workers, allowing for the recovery of the workforce and distancing exposure to loads by reducing the working day.
SILVA, 2011	The ability to work and fatigue among nursing workers	Cross-sectional population cohort study.	Nursing workers at the medical and surgical clinical units of the USP University Hospital.	They point to the quality of life at work and the quality of the built environment.	It was found that investment in improvements in the worker's lifestyle and in the work environment are essential measures to reduce fatigue levels and improve work.
MAURO et al., 2010	Nursing working conditions in the wards of a university hospital	Non-experimental study with a quantitative approach.	Nursing workers in the wards of a university hospital.	They point to the precariousness of the quality of life at work and work management.	It found that working conditions are inadequate and disadvantage the health of nursing workers. It allows the worker and the institution to discuss the occupational environment, seeking changes in the work process.
TEIXEIRA; MANTOVANI, 2009	Nurses with chronic diseases: the relationship with illness, prevention and the work process	Quantitative and descriptive research.	Nurses with chronic illnesses.	They point to the quality of life at work and stressors.	The health problems of the nurse worker deserve important attention in hospital work and in health as a whole. It offers conditions for readjustment in their living and working conditions, adaptation in less stressful functions, sectors and hours to better cope with external and internal stimuli, which is fundamental for the non-appearance or worsening of a chronic health condition.
MORAIS et al., 2014	The role of nurses in the multidisciplinary team facing overweight / obesity and in the work environment	Cross-sectional, population-based study.	Overweight or obese workers.	It deals with obesity and work management.	It is concluded that the role of nurses must be proactive in conjunction with a multidisciplinary team aiming at individual and collective monitoring of actions to control and prevent overweight and obesity. Just as it should accompany workers with a high BMI.
OLIVEIRA; WALNUT, 2010	Obesity as a risk factor for nursing professionals in a philanthropic institution	Cross-sectional, population-based study.	Obese nursing workers with altered pressure levels.	It deals with obesity and the difficulty in transforming the quality of life at work and the need for awareness and education about the dangers of obesity and stressors.	Although these professionals are aware of the seriousness of the disease and the importance of changing lifestyle habits, they still have difficulty with such behavior, which suggests the implementation of educational programs in the workplace.
MAGNAGO et al., 2010	Working conditions, sociodemographic characteristics and musculoskeletal disorders in nursing workers	Cross-sectional population-based study.	Nursing workers at a public university hospital in the interior of Rio Grande do Sul.	It deals with the quality of life at work.	The lumbar spine was the most frequent location reported by workers, indicating the need for a participatory proposal for the promotion of health and well-being in nursing work, involving hospital managers as well as workers.



BOLSONI-LOPES; FURIERI; ALONSO-VALE, 2021	Obesity and Covid 19: a reflection on the relationship of pandemics	Reflective study that contributes to a critical-reflective construction on the topic Obesity in interface with COVID 19.	Health worker.	It points out obesity as a health risk.	Obesity is a risk factor for the worsening of Covid-19, which is contributing to the overload of health services and requires special attention with health education within the scope of the Unified Health System.
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Entitled “Impacts of obesity and stressors in the hospital environment: the case of nurses”, the e-book consisted of 58 pages of text and figures related to the topic and was divided into the topics Introduction; Relevance of the Obesity Theme; Definition and Epidemiology of Obesity; Diagnosis of Obesity, with a table on the Classification of Nutritional Status by BMI; Stressing Factors in the Nurse’s Work; Literature review with a table to describe each article included in the review and graphs with the distribution of articles according to the professional category to which they refer, data collection method, data source, year of publication and methodological approach; Final Considerations and References.

Figure 4: summarizes the main stressors presented in the e-book that contribute to nurses’ obesity.

**Figure 4: Organizational and psychosocial stressors in the work of nurses that contribute to obesity. Rio de Janeiro, RJ, Brazil**

Stressors of nurses’ work that contribute to obesity	
Organizational Factors	Psychosocial Factors
Long-term computer use.	Lack of time to dedicate to the family, go to the gym and rest.
Double journey.	Physical and emotional wear and tear.
Reduced number of staff.	Difficulties in interpersonal relationships.
Low wages.	Conflicts to be managed.
Night work, with night workers being less likely to practice physical activities for leisure, associated with irregular meals, sleep deprivation and interruption of circadian rhythms.	The workforce of this professional category is predominantly female and obesity is higher among women when compared to men.
Lack of breaks in the workday.	
Work in shifts.	
Work conditions.	
Accelerated nature of work.	
Greater workload.	

## Discussion

Obesity is among the four main risk factors for cardiovascular disease in nurses. The nurse’s work involves several stressors that contribute to the development of bad habits and diseases, including obesity. These stressors of the profession were the subject of several studies included in this review, as they lead to a decrease in the quality of life of professionals, physical, social and psychological damage due to the work environment and quality of life at work [1,16,17].

There is a high percentage of obesity among nursing workers. The studies in this review do not directly assess the impact of obesity on the daily lives or routine of nurses, but rather on how the stressors of this profession play an important role in the development of obesity and other diseases such as musculoskeletal disorders, mental and psychological disorders and social. These stressors and the consequent illnesses caused by them lead to a decrease in the ability to work with restriction of functional activities such as transferring patients on stretchers or wheelchairs, implications on the quality of care, fatigue, in addition to absenteeism and leaves [17,18].

The main stressors to which the studies refer involve: reduced number of nurses to meet the demand of patients; excess of activities under the responsibility of these professionals; difficulties in delimiting the different roles between nurses, technicians and nursing assistants; lack of recognition of nurses by the general

public; emotional tension arising from direct patient care; long working hours; low pay; frequent need for two jobs; development of unpleasant tasks [1].

Working conditions such as reduction of personnel, outsourcing of the workforce, increased turnover of professionals with consequent discontinuation and disorganization of the work process in addition to biological, ergonomic and chemical risks lead professionals to become physically ill, with recurrent complaints of low back pain, in addition to promoting mental health damage such as tiredness, fatigue and nervousness, or can aggravate chronic health conditions [16,18,19,20]. Even when sick, many professionals do not stop working, but show a drop in income, overloading the team and decreasing the quality of care.

The articles demonstrate the correlation between obesity, stressors, quality of life at work, work management, nurses’ perception of their work and quality of the work environment, providing support for the preparation of the ebook with recommendations for managing obesity and stress factors for nurses in hospital institutions, as a tool that can consolidate new practices that seek to improve the quality of life at work and its management.

As for actions to improve the health of nurses in the light of working conditions, the studies advise that interventions be carried out in the organization of work, valuing professionals, improving salaries, reducing working hours, health promotion actions,

disease prevention and workers' health recovery, seeking to reduce multiple employment relationships, improve their lifestyle and work environment, reduce workers' exhaustion, fatigue and weariness and increase the quality of work [1].

These data show the need to assess the work process, the quality of life at work and the quality of the nurses' work environment, suggesting the performance of preventive activities, which motivated us to prepare the management ebook to minimize the context of obesity and of its stressors, increasing the quality of life of nurses' work and, consequently, of their life as an individual. Among the preventive measures are the encouragement of professionals to change their lifestyle, including healthy eating and physical exercise, mental health care, with an approach centered on the person, family and community instead of organizing around the disease, encouraging nurses to seek professional help in situations of anxiety and depression, in addition to improvements in the work environment so that it is a place that promotes physical health through healthy and mental habits through a pleasant and non-conflictual environment. In the field of nursing, there are many limitations to instituting new forms of work organization, but changes such as adapting functions, sectors and schedules, better remuneration for professionals, adequate staff sizing and reduction of weekly workload can prevent wear and tear and exhaustion of workers, enabling the recovery of the workforce, better coping with difficulties and preventing diseases [17].

The limitations of this study involve the selection of databases that were limited to the most important in the scientific literature. A difficulty in synthesizing the included studies was found due to the variety of topics covered by them. Furthermore, the methodological quality of the studies covered in this review was not assessed.

## Conclusion

Obesity among nursing professionals is related to stressful factors at work, which play an important role in the development of diseases, leading to a decrease in the quality of life of professionals. The studies evaluated demonstrate a correlation between obesity, stressors, quality of life at work, work management, nurses' perception of their work and quality of the work environment. Obesity leads to a decrease in the nurse's capacity for work, with restriction of functional activities such as transferring patients on stretchers or wheelchairs, implications for the quality of care, fatigue, in addition to absenteeism and recurrent absence.

Through this and other information collected in the literature review, an e-book was created aimed at nursing professionals.

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