

WORKLOADS AND NURSING WORKERS' HEALTH: INTEGRATIVE REVIEW*

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ABSTRACT: This study aimed to identify the effects of workloads on the health status of nursing workers. The search was conducted in November 2016, at four databases, and inclusion and exclusion criteria were established. At the end, 50 studies were selected. The results highlight work concepts, types and conditions, demonstrating their effects on the health status of the nursing team, which is manifested through illnesses that result in temporary absence from work (sick leaves) and absenteeism, stress, physical and emotional fatigue, risks of occupational accidents, among others. It is concluded that the identification of these effects allows the implementation of organizational actions targeted to the prevention of occupational accidents and diseases.

DESCRIPTORS: Workload; Worker's health; Absenteeism; Nursing.

CARGAS DE TRABALHO E A SAÚDE DO TRABALHADOR DE ENFERMAGEM: REVISÃO INTEGRATIVA

RESUMO: Este estudo tem como objetivo identificar a influência das cargas de trabalho na saúde do trabalhador de enfermagem. A busca foi realizada em novembro de 2016, em quatro bases de dados, estabelecendo-se critérios de inclusão e exclusão, sendo selecionados 50 estudos. Os resultados destacam os conceitos, tipos e condições de trabalho que predispõem as cargas de trabalho, evidenciando as consequências na saúde da equipe de enfermagem por meio dos adoecimentos, que acarretam afastamentos e absenteísmo, estresse, desgastes físicos e emocionais, riscos para acidentes de trabalho, entre outros. Conclui-se que a identificação dessas influências possibilita a implementação de ações organizacionais, de prevenção de acidentes e doenças relacionadas ao trabalho.

DESCRIPTORES: Carga de trabalho; Saúde do trabalhador; Absenteísmo; Enfermagem.

CARGAS DE TRABAJO Y LA SALUD DEL TRABAJADOR DE ENFERMERÍA: REVISIÓN INTEGRATIVA

RESUMEN: Estudio cuyo objetivo fue identificar la influencia de las cargas de trabajo en la salud del trabajador de enfermería. La búsqueda fue realizada en noviembre de 2016, en cuatro bases de datos, bajo los criterios de inclusión y exclusión, siendo seleccionados 50 estudios. Se destacan los conceptos, tipos y condiciones de trabajo que predisponen las cargas de trabajo, evidenciando las consecuencias en la salud del equipo de enfermería por medio de las enfermedades, las cuales resultan alejamiento y absentismo, estrés, desgastes físicos y emocionales, riesgos para accidentes de trabajo, entre otros. Se constata que la identificación de esas influencias posibilita la implementación de acciones organizacionales, de prevención de accidentes y enfermedades referentes al trabajo.

DESCRIPTORES: Carga de trabajo; Salud del trabajador; Absentismo; Enfermería.

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● INTRODUCTION

Nurses are the largest part of the hospital workforce. However, care delivery has limitations related to material resources and personnel available. Thus, because of the excessive workloads faced by the employees, work is tiring⁽¹⁾. Workloads are inherent to the work process and environment, exerting direct and indirect effects on workers' health, and therefore it is necessary to identify and understand its impact during the work process⁽²⁾.

Nursing workers are exposed to different workloads, which can be classified into biological burden e.g. exposure to blood and body fluids; chemical burden, caused by the use of drugs; mechanical burden, characterized by accidents with needles and sharp materials; physiological burden, especially related to work done in a standing position and poor posture, and mental burden, associated to inappropriate work conditions. These are some determining factors of workloads related to the sickening process of workers⁽³⁾.

Continuous exposure to workloads and the daily experience of feelings of pleasure and suffering generates stress, which may evolve to disease. Thus, workers must be aware of the peculiarities of the nursing profession and know the strategies to reduce work-related strain, to be able maintain good health conditions⁽⁴⁾.

The damage caused by such exposure are responsible for occupational accidents and temporary absence from work through sick leaves, which can be related to osteoarticular pain, twisting, fractures, dislocations, contusions and motor incapacity, mood swings, anxiety, depression, stress, insomnia and contagious infectious diseases⁽⁵⁾.

Therefore, the study of workloads allows the identification of problems arising from the work process that impact the health of workers, aimed to the implementation of actions targeted to health promotion and disease prevention among nursing workers. Therefore, this study aims to identify the effects of workloads on the health of nursing workers.

● METHOD

Integrative review carried out through six steps: 1) Definition of the guiding question; 2) establishment of inclusion/exclusion criteria; 3) definition of the information to be extracted from the articles; 4) analysis of the included studies; 5) interpretation of the results and; 6) presentation of the integrative review⁽⁶⁾.

The following guiding question was presented: What is the impact of workloads in the health of nursing workers? The collection of articles was done through search to databases Medical Literature Analysis and Retrieval System Online (MEDLINE), *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS), Scientific Electronic Library Online (SciELO) and Cumulative Index to Nursing and Allied Health Literature (CINAHL), in November 2016.

Controlled descriptors according to the classification of Health Sciences Descriptors (DeCS): Nursing, Workload and Absenteeism were used in the selection of the articles. Search was refined using Boolean operator AND, which allowed to perform the following combinations: Workload x Nursing; Absenteeism x Nursing. Such crossing aimed to verify the existence of scientific studies that prove the relationship between workload and absenteeism. Table 1 shows the results of the search for descriptors in the databases.

The following inclusion criteria were established: scientific articles in Portuguese, English or Spanish, full-texts, available online for free and published in 2010-2016. Regarding the exclusion criteria, theses and dissertations, texts whose abstracts were not available for a first appreciation were excluded and duplicated articles were considered only once.

Table 1 – Results of crossing of descriptors at the databases. Rio Grande, RS, Brazil, 2016

Databases	Descriptors	
	<i>Carga de trabalho x enfermagem</i>	<i>Absenteísmo x Enfermagem</i>
	Workload x Nursing	Absenteeism x Nursing
MEDLINE	168	41
LILACS	34	22
SciELO	351	135
CINAHL	5.152	738
Total	5.705	936
Total: 6,641		

In total, 6,641 articles were collected. Subsequently, the inclusion and exclusion criteria were applied, the abstracts and the full-text articles were read for selection of the sample. The sample was finally composed of 50 articles, as shown in Figure 1.

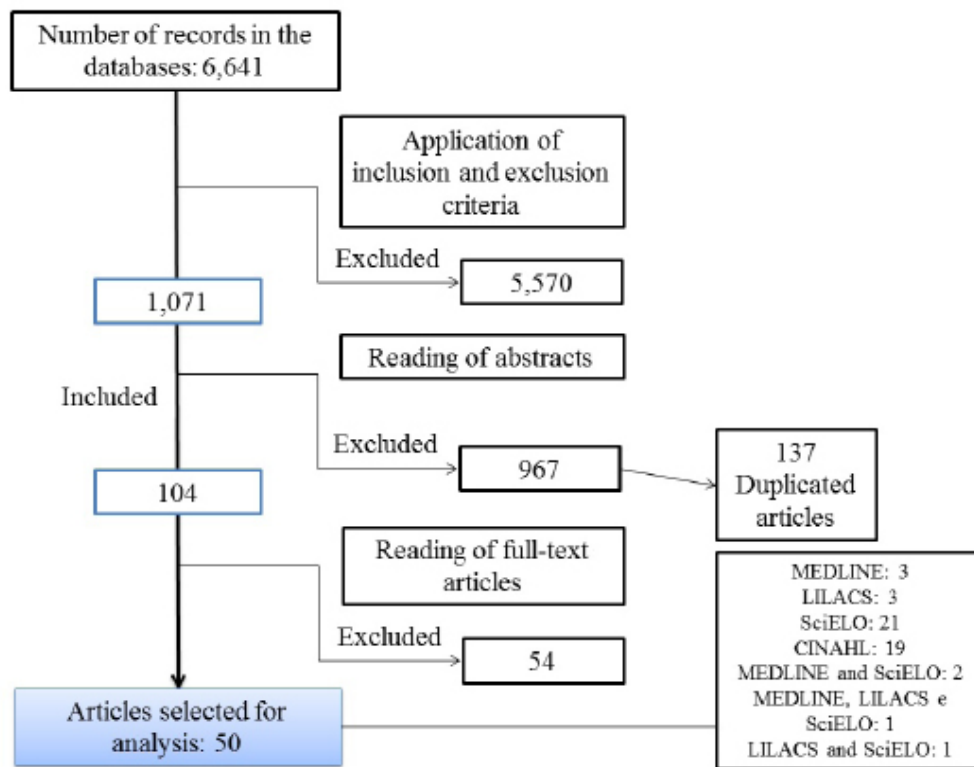


Figure 1 - Diagram of the sample selection. Rio Grande, RS, Brazil, 2016

Subsequently, the publications were analyzed with respect to titles of articles, database provider, journal, year of publication, country of origin, type of study and the level of evidence (LE).

The level of evidence characterizes the way in which evidence is classified hierarchically and according to the methodological approach adopted. Thus, evidence can be obtained, as follows: Level 1 (systematic review or meta-analysis of multiple randomized clinical trials); Level 2 (well-designed randomized clinical trials); Level 3 (well-designed control clinical trials without randomization); Level 4 (case-control and cohort studies); Level 5 (systematic reviews of descriptive and qualitative studies); Level 6 (descriptive or qualitative studies); Level 7 (opinion of authorities and/or reports of expert committees)⁽⁷⁾.

● RESULTS

Most of the 50 articles analyzed were published in 2013: 13 articles, followed by 2011, with 10 articles, and 2012 and 201, with nine articles each. According to the country of origin, 20 studies were conducted in Brazil; each of the following countries (Colombia, Spain and United States) contributed with three articles, and Chile, Africa and Australia, two articles each.

Regarding the journals, 23 studies were published in national journals and 27 in international journals. Regarding the methodology used, quantitative approach prevailed: 29 articles, followed by qualitative approach, in 10 articles. The level of evidence that most characterized the sample was level 6, with 43 articles. Chart 1 shows a summary of the studies analyzed in this review.

Chart 1 - Characterization of the studies according to journal, year and country of origin, type of study and level of evidence (LE). Rio Grande, RS, Brazil, 2016 (continues)

Journal	Year	Country	Type of study	LE
Rev. Latino-Am. Enfermagem ⁽⁸⁾	2013	Brazil	Quantitative	6
Int. Arch. Occup. Environ. Health. ⁽⁹⁾	2013	Poland	Quantitative	6
Ind. Health. ⁽¹⁰⁾	2013	Taiwan	Quantitative	6
Rev Gaúcha Enferm. ⁽¹¹⁾	2011	Brazil	Integrative Review	5
Av. enferm. ⁽¹²⁾	2010	Colombia	Qualitative	6
Rev. Portuguesa de Enf. de Saúde Mental ⁽¹³⁾	2014	Portugal	Quantitative	6
Ciênc. saúde coletiva. ⁽¹⁴⁾	2011	Brazil	Qualitative	6
Ciênc. saúde coletiva. ⁽¹⁵⁾	2011	Brazil	Qualitative	6
Rev. Latino-Am. Enfermagem ⁽¹⁶⁾	2011	Brazil	Qualitative	6
Rev. Latino-Am. Enfermagem ⁽¹⁷⁾	2014	Brazil	Quantitative	6
Rev. bras. epidemiol. ⁽¹⁸⁾	2012	Brazil	Quantitative	6
Av. enferm. ⁽¹⁹⁾	2013	Colombia	Bibliographic Review	5
Rev. Latino-Am. Enfermagem ⁽²⁰⁾	2010	Brazil	Quantitative	6
Rev. Latino-Am. Enfermagem ⁽²¹⁾	2013	Brazil	Quantitative- Qualitative	6
Rev. Esc. Enferm. USP ⁽²²⁾	2012	Brazil	Integrative Review	5
Rev. Gaúcha Enferm. ⁽²³⁾	2013	Brazil	Quantitative	6
Esc. Anna Nery ⁽²⁴⁾	2014	Brazil	Qualitative	6
Enfermería Global ⁽²⁵⁾	2014	Brazil	Quantitative	6
Cienc Cuid Saude ⁽²⁶⁾	2011	Brazil	Documentary	5
Rev. enferm. UERJ. ⁽²⁷⁾	2013	Brazil	Updating	7
Rev. Esc. Enferm. USP ⁽²⁸⁾	2012	Brazil	Quantitative	6
Colomb Med ⁽²⁹⁾	2011	Brazil	Updating	7
Acta paul. enferm. ⁽³⁰⁾	2011	Brazil	Qualitative	6
Gest. Prod ⁽³¹⁾	2012	Brazil	Qualitative	6
Salud UIS ⁽³²⁾	2013	Colombia	Qualitative	6
Rev. Latino-Am. Enfermagem ⁽³³⁾	2015	Chile	Quantitative	6
Enferm Nefrol ⁽³⁴⁾	2012	Chile	Review	5
Gac. Sanit. ⁽³⁵⁾	2012	Spain	Experimental	6
J. Adv. Nurs. ⁽³⁶⁾	2013	Austria	Quantitative	6
J Nurs Scholarsh. ⁽³⁷⁾	2014	South Korea	Quantitative	6
J. Adv. Nurs. ⁽³⁸⁾	2013	Australia	Qualitative	6
Int Nurs Rev. ⁽³⁹⁾	2015	Thailand	Quantitative	6
Nurs Outlook. ⁽⁴⁰⁾	2012	Spain	Quantitative	6

J. Adv. Nurs. ⁽⁴¹⁾	2011	Denmark	Quantitative	6
J Nurs Manag. ⁽⁴²⁾	2011	USA	Quantitative	6
J Nurs Manag. ⁽⁴³⁾	2015	Africa	Quantitative	6
J Clin Nurs. ⁽⁴⁴⁾	2013	Spain	Retrospective	6
Arch Psychiatr Nurs. ⁽⁴⁵⁾	2015	China	Quantitative	6
Health Policy ⁽⁴⁶⁾	2010	Canada	Documentary	6
Int J Nurs Stud. ⁽⁴⁷⁾	2014	Germany	Quantitative	6
Int J Nurs Pract. ⁽⁴⁸⁾	2015	Jordan	Quantitative	6
J Clin Nurs. ⁽⁴⁹⁾	2012	Africa	Quantitative	6
J Psychiatr Ment Health Nurs. ⁽⁵⁰⁾	2015	Ireland	Quantitative	6
J Adv Nurs. ⁽⁵¹⁾	2013	Norway	Quantitative	6
J Nurs Scholarsh. ⁽⁵²⁾	2012	Australia	Quantitative	6
Int J Nurs Stud. ⁽⁵³⁾	2013	USA	Quantitative	6
Nurs Econ. ⁽⁵⁴⁾	2011	USA	Quantitative	6
Rev. Esc. Enferm. USP ⁽⁵⁵⁾	2015	Brazil	Quantitative and qualitative	6
Saúde Debate ⁽⁵⁶⁾	2015	Brazil	Qualitative	6
Texto Contexto Enferm. ⁽⁵⁷⁾	2015	Brazil	Quantitative and qualitative	6

Regarding the outcome of the articles, they were analyzed, organized and synthesized for organization, interpretation and presentation of results, and the following categories were defined: 1. Concepts and identification of workloads; 2. Working conditions that predispose workers to workloads; 3. Effects of workloads on workers' health.

● DISCUSSION

CATEGORY 1 – Concepts and identification of workloads

The expression "workload" is related to the working conditions⁽¹¹⁾ and organizational factors⁽²⁶⁾ to which workers are exposed. Thus, workloads are present in work environments and processes of nursing workers, and can be identified as loads of internal materiality characterized by physiological and mental burdens, because they are manifested by a disorder or disease, and loads of external materiality (physical, chemical, biological and mechanical burdens), since they are detected in the workplace⁽²⁹⁾.

In a study conducted in 2009, at a university hospital, the nursing workers reported 160 workloads, of which, 37.5% were identified as physiological burdens, 36.2% as mental burdens, 14.4% as biological burdens, 7.5%, as mechanical burdens, 2.5% as physical burdens and 1.9% as chemical burdens⁽⁸⁾. In another university hospital, also in 2009, there were 128 cases of sickening related to work, and the most prevalent loads were physiological and mechanical, with 33.06% each⁽²³⁾.

A study conducted in seven public and university hospitals in Brazil also identified that exposure to workloads is related to health problems of the nursing staff, demonstrating the prevalence of physiological (36.8%), biological (27.2%), mechanical (25.9%) and psychological (18.9%) burdens⁽²¹⁾.

The workloads have predominant factors. In physical loads, these factors can be identified in the lack of physical space, confined areas, in the lack of equipment, poor maintenance, and in professionals remaining in a standing position for many hours or experiencing discomfort in the lower limbs⁽¹⁴⁾.

Mental burdens can be identified in stress related to psychological aggression, in monotonous and repetitive work, in the need for being permanently alert, in women's work, in the fast pace of work, in the lack of communication, among others⁽¹⁶⁾. Other determining factors of mental load are related to interpersonal relationships, considerable responsibilities assumed by professionals and risk of

contamination⁽¹⁴⁾. They can also be identified among shift work personnel and workers who perform many different activities⁽¹³⁾.

CATEGORY 2 – Work conditions predisposing to workloads

Exposure to mental load in nursing work can be related to the stress in the work environment^(10,22,47) and with excessive work⁽³⁶⁾ through cognitive and emotional demands.

The pace of work of nursing professionals is also reported in many scientific productions^(19,31,33,37), as well as the excessive workload of these employees^(15,17,19,27-28,32,34,39,42-43), understaffing⁽⁵⁵⁻⁵⁶⁾, and difficulties in interpersonal relationships⁽⁵⁵⁾. These are determining factors of mental load.

The physiological burdens can be related to physical efforts made by professionals who work in a standing position for long periods, who travel long distances in the hospital, as well as to ergonomic factors such as patient handling, lifting heavy objects and poor postures^(12,18,20,31), work in successive shifts⁽³⁵⁾, night shifts^(9,15,25,30,38,40,45-46,51).

Patient handling⁽⁴⁸⁾ and bed baths⁽⁵⁷⁾ can also affect the health of nursing workers, being considered physiological burdens. Thus, the use of elevators to lift patients may contribute to prevent physiological burden and reduce the physical demands of work^(36, 41).

Accidents with sharp instruments during the handling of materials, and physical aggressions^(44,52,54) are identified as mechanical loads. On the other hand, exposure to biological materials, in case of occupational accidents, indicates the presence of biological burden⁽²⁴⁾. Chemical burdens are characterized by exposure of nursing professionals to chemical agents and environmental pollution^(22,34).

Physical burdens are related to lack of materials^(12,50) and equipment^(43,45,49), noise of machinery⁽¹²⁾, maintenance and use of furniture⁽³¹⁾ and inadequate infrastructure⁽⁴⁹⁻⁵⁰⁾.

CATEGORY 3 – Effects of workloads on nursing workers' health

The main diseases/causes of reporting of temporary absence from work involve the osteo-conjunctive and muscular tissue system⁽⁸⁾, osteoarticular pain and traumas⁽²³⁾, diseases of digestive tract, eye conditions and mental disorders⁽²⁵⁾, musculoskeletal disorders⁽⁵⁷⁾ disorders of the lumbar region, neck, shoulder and upper part of the dorsum and distal upper extremities and lower limbs^(18,20,22,25), musculoskeletal pain⁽⁵³⁾ and back pain⁽⁴⁸⁾.

The workloads produce a negative impact on the physiological capacity of the workers⁽⁴⁰⁾, detected in the higher body mass index and high levels of depression among nursing workers⁽⁵¹⁾. The physiological stress reactions observed in nursing workers included back pain, fatigue, exhaustion, stiff neck and heartburn. However, the study failed to establish a correlation between workload and the aforementioned responses⁽¹⁷⁾.

Other consequences concern emotional distress^(11,16,23,27,33,36,39,49), associated to the occurrence of accidents and health problems⁽¹¹⁾, worry, lack of sleep, anxiety, fear, emotional imbalance, difficult relationship with the family⁽²⁴⁾, physical and emotional distress^(27,29,56). Memory failure, difficulty concentrating, fear of making mistakes⁽¹³⁾, and sleep disorders^(13, 37-38) are also effects of the workloads on nursing workers' health.

Stress^(12,19,32,37,45,47,50,54,57) is also a consequence of exposure to workloads. Other factors are related to work in night shifts, which disrupts the oxidant-antioxidant balance and/or generates oxidative stress⁽⁹⁾, as well as suffering^(10,14,15,52), Burnout syndrome^(34,37,40,44,50) among nursing professionals and increased risk for occupational accidents⁽²¹⁾. The implementation of a new system of work shifts, aimed to promote a more satisfactory workload distribution, would contribute to reduce the number of employees absent from work⁽³⁵⁾.

Physiological and mental burdens are the main causes of temporary absence from work among health professionals⁽⁸⁾. These loads are characterized by factors that favor absenteeism, such as long

working hours, unsatisfactory conditions and lack of equipment⁽⁴³⁾, as well as excessive work (46), great physical effort of nursing workers⁽⁴¹⁾, and night shifts^(25,46).

Exposure of nursing workers to workloads result in temporary absence from work^(23-24,56) and absenteeism^(8,25-26,41,43,46,55), affecting the quality of life of these workers^(28,30,34) and producing a negative impact on the quality of care and patient safety^(30,39,57).

● FINAL CONSIDERATIONS

The study found that the work process and environment of the nursing team are pervaded by conditions that predispose to workloads, and these loads have impact on the workers' health.

Therefore, in line with the objective of the present study, the main effects of workloads on nursing workers' health are occupational diseases and accidents, physical and mental distress and absenteeism.

It is concluded that workloads harm the health of nursing workers and impact patient safety. Hence, organizational actions aimed to prevent occupational diseases and accidents are needed to reduce workloads and promote the health of nursing workers.

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