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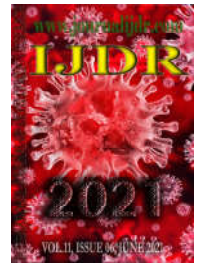
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RESEARCH ARTICLE

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FACTORS RELATED TO NURSING WORK THAT CONTRIBUTE TO ILLNESS: AN INTEGRATIVE REVIEW

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ABSTRACT

The illness of nurses is intrinsically related to their work environment. Thus, the aim of the present study was to identify the factors that contribute to the illness of nursing professionals in their work process. This is a literature review of articles published in Portuguese language from 2015 to 2020. Articles indexed in the Scientific Electronic Library Online (SciELO) Brazil and Virtual Health Library portal were used for the bibliographic survey. The exclusion criteria adopted were duplicate articles, studies performed in other countries, and studies that were not related to the topic. Factors such as stress, double employment, musculoskeletal diseases, physical load, emotional load, inadequate work environment, and long working hours significantly contribute to health problems and the frequent risks of worker illness. The subject is relevant because when working conditions interfere with the productive limitations of an individual, professional teams are overworked due to absenteeism, i.e., sick leave, which can evolve into permanent retirement or, often, early retirement. To mitigate this situation, functional readaptation should involve the reallocation of nurses to milder environments based on the limitations presented, favoring an increase in the self-esteem and appreciation of nurses.

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INTRODUCTION

The word "work" refers to the activities performed by human beings with the objective of achieving a goal and that enable the individual to realize their dreams (Sachuk & Araújo, 2007). It is also through work that skills are developed and improved. Properly paid work becomes pleasurable and contributes to self-esteem, personal satisfaction, and professional fulfillment (Neves *et al.*, 2018). Worker health problems are expressed by several factors associated with the work environment, i.e., by physical and mental loads and by the risks inherent to their work activity, which can directly or indirectly affect productivity (Carvalho *et al.*, 2017). Institutionally, nursing teams are composed of nurses, nursing technicians and nursing assistants, and they are the pillars for providing care to individuals, the community, and society.

The characteristics of the nursing profession include the prevention, promotion, and recovery within the health-disease binomial (Pimenta *et al.*, 2020a). In Brazil, nursing professionals, especially those who work in hospitals, have long working hours. Work schedules are commonly established by shifts, during which these professionals perform various activities and/or jobs (Silva *et al.*, 2006). This can lead to exhaustion and consequent illness and may also affect the quality of care provided to patients (Dias *et al.*, 2019). Nursing professionals typically have arduous workdays, with low pay and without regulations regarding the workday or the minimum wage (Dias *et al.*, 2019). The division of labor is based on professional category, and thus, this division of duties makes nursing work hierarchical and dependent on professional training (Laitano *et al.*, 2019). However, irrespective of professional category, nursing professionals experience increased workloads and emotional stress arising from direct contact with pain, death and unpleasant tasks, leading these professionals having greater exposure to factors that

cause health issues and accidents (Santos *et al.*, 2019a; Santos *et al.*, 2019b). The nursing workload is 44 hours per week in the private sector, as determined by the Consolidation of Labor Laws (CLT, for its acronym in Portuguese - Decree-Law 5.452/43)). In the public sector, some states and municipalities have adopted nursing workloads of 30 hours per week (Laitano *et al.*, 2019). According to the Brazilian Nursing Association (ABEN, 2005), the regulation of the workday of health workers (nurses, nursing technicians and assistants) at 30 hours per week was a guideline approved at the 12th National Health Conference, which was held in Brasília from December 7-11, 2003, by the Ministry of Health. Currently, bill 2295/2000 is being processed in the National Congress, which sets the working hours of nursing professionals at 6 hours per day and 30 hours per week. Since 2013, after having been approved by the Constitution and Justice Commission, this project has been waiting for the plenary session of the Chamber of Deputies. The process has been ongoing for many years because a final vote has not occurred in the plenary because of the lack of a definitive agreement between the professionals, the government, and the private sector, which will benefit little because the proposal will result in more hiring.

In the hospital environment, nursing teams are susceptible to occupational risks related to chemical, biological and ergonomic factors, favoring their illness and removal from work activities. Absenteeism resulting from health factors is one of the challenges faced by nursing management regarding the planning and development of a service schedule. The replacement of a team member sometimes is unfeasible, for example, if the absence is communicated at the end of the workday, on weekends or at the beginning of a shift. This challenge negatively affects the division of labor among the team and causes an overload of tasks for the members of the team, directly impacting the care provided to the client, and absenteeism and leave of absences are constant in nursing services. Thus, the objective of this study is to evaluate the factors that contribute to the illness of nursing professionals, given the various tasks they perform.

METODOLOGY

This is an analytical literature review. Data were collected from articles published from 2015 to 2020 in the Scientific Electronic Library Online (SciELO) Brazil and Virtual Health Library (VHL) databases. Based on literary references, the following Descriptors in Health Sciences/Medical Subject Headings (DeSC/MeSH) were used (in Portuguese): “Nursing”, “Workload”, “Occupational Health”, “Occupational Diseases” and “Readaptation to Employment”. The set of descriptors was organized using the Boolean operators AND and OR. The sample presented and discussed included publications that were selected from a prior reading of the titles and abstracts and that met the following inclusion criteria: (1) publication source (publication in the aforementioned databases); (2) language of publication (publications in Portuguese); (3) year of publication (articles published within the aforementioned five-year interval); (4) scientific production model (only scientific articles were selected); and (5) publication theme (theme consistent with the objective of the study). The exclusion criterion was the presence of duplicate articles in the databases searched. A total of 870 articles were retrieved from all the databases. A total of 77 articles that met the abovementioned criteria were selected. The criterion of article duplicity excluded 59 articles. After reading the objectives of the articles, 18 that meet the research objectives were selected (Figure 1).

RESULTS AND DISCUSSION

The texts that address the theme of this study are provided in Table 1. Factors such as stress, double employment, musculoskeletal diseases, physical and emotional loads, work environment, and long working hours contribute significantly to health problems and frequent risks of worker illness (Siqueira *et al.*, 2019). With less evidence, the occupational injuries attributed to chemical and biological agents are related to the inappropriate use or absence of personal protective



Figure 1. Searches carried out in the databases.

equipment, whose proper use can mitigate occupational injuries (Santos *et al.*, 2020a). Although both males and females perform activities equally within a nursing team, nursing professionals are predominantly female, and it can be inferred that work activities associated with household chores contribute significantly to occupational diseases (Santos *et al.*, 2020a). Critical care units have the highest prevalence of occupational diseases, as these sectors require activities to be performed quickly and dexterously, with effective communication between team members; however, in the nursing profession, there is a scarcity of material and human resources. Because of this shortage, more time is required to provide patient care, generating greater strain on the entire team (Silva *et al.*, 2017; Silva *et al.*, 2018). Demands in the work environment can trigger occupational stress, which is inherent to any profession that is exposed to environmental stressors, such as noise and factors intrinsic to work, the work environment, and interpersonal relationships. Members of a nursing team are susceptible to such stress because all these factors can occur in a hospital unit. Nursing is directly responsible for the care provided to patients, the organization of hospital units, and various administrative and bureaucratic tasks. Nursing teams are more exposed to the risks of stress and illness within a hospital because they face inadequate working conditions in an unhealthy environment where they are overworked and often complete repetitive tasks (Martinez *et al.*, 2017; Santana *et al.*, 2020).

Physical load is related to the division of labor in the activities performed in shifts (morning, afternoon, or night), double shifts, overtime, and work without breaks, resulting in fatigue, stress, and irritation. In addition, due to daily physical effort, the repetition of tasks, and standing, these workers may suffer from physical and mental exhaustion. Notably, the number of working hours can be exceeded by several factors inherent to the planning of daily activities, such as time spent on the shift change, delay by colleagues, and unexpected and urgent situations related to patients (Dias *et al.*, 2017; Cargnin *et al.*, 2019). Psychological load is a notable factor with respect to “stress in the work environment” because emotional aspects of the daily work routine, e.g., experiencing the suffering and death of patients, lead nursing professional to develop coping strategies and mechanisms (Mariano & Carreira, 2016). Stress and psychosomatic and psychosocial diseases may contribute to the high rate of occupational accidents and decreased performance and productivity. Stress can be understood as the interrelationship between a person and the environment, which is perceived by the person as depleting their coping resources, putting their well-being at risk (Lima *et al.*, 2018). Nursing professionals account for the second highest number of disability pensions and have high rates of absenteeism, and temporary leaves of absence evolve into permanent retirement and often early retirement. Functional readaptation favors the reallocation of workers to perform work activities in milder environments based on the limitations presented, which benefits the self-esteem and appreciation of professionals (Cacciari *et al.*, 2017).

Table 1. Studies that focus on factors related to nursing work that contribute to illness

Year	Title	Authors	Journal	Objective	Methodological approach	Main findings
2016	Notification of health problems among nursing workers in university hospitals	Guimarães, A. L. O.; Felli, V. E. A.	<i>Rev Bras Enferm</i> [Internet]	Evaluate issues related to the health of nursing professionals and describe their consequences.	Epidemiological study	Most of the findings related to health problems were due to sick leave, work accidents, and absences. The diseases that most justified these absences were those of the musculoskeletal, respiratory, and nervous systems, in addition to infectious and parasitic diseases.
2016	Perception of quality of life in patients with work-related musculoskeletal disorders	Dosea GS, Oliveira CCC, Lima SO	<i>Cienc Cuid Saude</i>	Analyze the quality of life of people with work-related musculoskeletal disorders.	Case series with a quantitative approach	Most participants reported that they perform everyday tasks with great difficulty and that pain interferes with work performance. Most of them emphasized that their emotional state has a negative impact on their relationship with work and daily activities.
2016	Health status and occupational profile of readapted and readjusted workers at a public university	Ciconato A, Cariacari P, Haddad MCFL, Rossaneis MA, Birolim MM	<i>Espaç Saúde</i>	Identify the health status and occupational profile of readapted workers at a public university.	Cross-sectional study	Readaptation contributes to a reduction in sick leave and early retirement. Readaptation can be a measure that allows a worker to reestablish his/her health and remain working at a productive age.
2017	Analysis of work capacity and stress among nursing professionals with musculoskeletal disorders	Petersen RS, Marziale MHP	<i>Rev Gaúcha Enferm.</i>	Evaluate the sociodemographic aspects, work capacity, and stress of nursing professionals affected by musculoskeletal disorders.	Cross-sectional study	A moderate work capacity was related to musculoskeletal comorbidities. In addition, stress affected 56% of participants and capacity was correlated with stress and social support.
2017	Productivity versus workloads in the nursing working environment	Carvalho DP, Rocha LP, Tomaschewski-Barlem JG, Barlem ELD, Cecagno D, Dalmolin GL	<i>Rev Esc Enferm USP</i>	Correlate the loss of productivity of nursing professionals with workload in a university hospital.	Descriptive study	The nursing professionals had an average loss of productivity of 6.38%. The sites with the highest loss of productivity were the surgical clinic and the medical clinic. The loss of productivity was correlated with both chemical and mechanical exposure.
2017	Factors associated with work accidents in the nursing team	Dias ICCM, Torres RS, Gordon ASA, Santana EAS, Serra MAA	<i>Rev Enferm UFPE on line</i>	Verify conditions that are associated with occupational accidents in a nursing team in an orthopedics department.	Cross-sectional study	The authors noted that 57.6% of the nursing staff reported the occurrence of occupational accidents in the last 3 months. In addition, > 1 employment relationship and sleep disorders were associated with occupational accidents.
2018	Illness among nursing workers in the hospital context	Baptista ATP, Souza NVDO, Gallasch CH, Varela TCMML, Noronha IR	<i>Rev Enferm UERJ</i>	Identify the health reasons that lead nursing professionals to take leaves of absence for > 15 days or undergo functional readaptation.	Documentary research	Leaves of absence were mainly attributed to mental disorders and musculoskeletal conditions. The main reasons that led the professionals to undergo functional readaptation were musculoskeletal diseases and mental disorders.
2018	Work-related mental disorders among nursing professionals: a Brazilian integrative review	Fernandes MA, Soares LMD, Silva JS	<i>Rev Bras Med Trab.</i>	Survey Brazilian studies to identify the causal relationship between mental disorders and the work of nursing professionals.	Integrative review	Mental disorders impair family, social, personal, and work life, among other aspects. In this survey, the large volume of activities, staff deficits, the high number of patients, and the psychological pressure in the work environment contributed to the emergence of mental disorders.
2019	Temporary absences from work due to mental illness and behavioural disorders in nurse professionals	Oliveira DM, Alencar NMBM, Costa JP, Fernandes MA, Gouveia MTO, Santos JDM	<i>Rev Cuid (Bucaramanga 2010)</i>	Report the causes of absence from work due to mental disorders among nursing professionals.	Cross-sectional and descriptive study	Depression was responsible for most leaves of absence (predominantly females between 31 and 40 years of age). The inpatient department was responsible for the largest number of leaves of absence due to mental disorders.
2019	Burnout syndrome in nurses working in neonatal intensive care unit	de Araújo ALB, Andrade Maia CS, Chaves LCMR, Batista JB	<i>Motricidade</i>	Investigate the prevalence of burnout syndrome in nurses working in neonatal intensive care units.	Descriptive, exploratory study	The nurses who participated in the study did not have high levels of burnout syndrome. However, when the dimensions of Questionnaire for the Evaluation of Work-Related Burnout Syndrome were analyzed separately, some professionals exhibited risk factors for illness.
2019	Non-specific low back pain and its relation to the nursing work process	Cargnin ZA, Schneider DG, Vargas MAO, Machado RR	<i>Rev Latino-Am Enfermagem</i>	Correlate low back pain with workload, exhaustion, and risk of illness.	Cross-sectional study	There was a relationship between working conditions and low back pain. The participants were at moderate risk of developing occupational disease.

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2019	Capacity index for work and the nursing team	Rodrigues DDM, Aquino RL, Antunes DE, Costa MM, Oliveira PC, Aragão AS	<i>Rev Enferm UFPE</i> on line	Analyze the Work Ability Index to identify conditions associated with work ability.	Integrative review	Workload, mental overload, and musculoskeletal diseases were the main factors that impacted the ability to work and loss of work, in addition to being fundamental determinants of ergonomic diseases.
2020a	Profile of the nursing team of university outpatient units: worker health considerations	Santos KM, Tracera GMP, Zeitoune RCG, Sousa KHJF, Nascimento FPB	<i>Esc Anna Nery</i>	Identify the sociodemographic, work, and health profile of the nursing staff of specialized outpatient units.	Quantitative, descriptive study	There was a predominance of women aged > 50 years and married professionals with children. A higher percentage of workers had an employment relationship and workload between 31 and 60 h/week. Among the chronic diseases, stress, osteoarticular diseases, and varicose veins stood out.
2020	Working conditions and depression in hospital emergency service nurses	Silva, M. R. G.; Marcolan, J. F.	<i>Rev Bras Enferm</i> [Internet]	Analyze factors related to working conditions for depression in emergency nurses.	Descriptive exploratory study	There was a high frequency of depression. The precarious work environment negatively impacted the care and development of depressive symptoms.
2020b	Common mental disorders in nursing technicians of a university hospital	Santos FF, Brito MFSF, Pinho L, Cunha FO, Rodrigues Neto JF, Fonseca ADG, Silva CSO	<i>Rev Bras Enferm</i> [Internet]	Verify the prevalence of mental disorders in nursing technicians and the associated factors.	Cross-sectional, analytical study	Half of the nursing technicians had mental disorders. These disorders were related to both economic and occupational factors.
2020	Factors related to the risk of illness of nursing staff at work in a psychiatric institution	Sousa KHJF, Zeitoune RCG, Portela LF, Tracera GMP, Moraes KG, Figueiró RFS	<i>Rev Lat Am Enfermagem</i>	Identify the associations between work capacity, health conditions, and risks of illness in nursing professionals.	Cross-sectional analytical study	The main factors related to the risk of illness were complaints of insomnia, night work, and excessive working hours.
2020	Burnout syndrome in nursing professionals	Costa SMS, Cerqueira JCO, Peixoto RCBO, Barros AC, Silva KCA, Sales PVM	<i>Rev Enferm UFPE</i> on line	Identify the prevalence of burnout syndrome in nursing professionals at an emergency hospital.	Quantitative, descriptive, cross-sectional study	Most participants (79.2%) had a moderate level of depersonalization in the three dimensions (emotional exhaustion, depersonalization, and professional fulfillment) of the Maslach Burnout Inventory.
2020	Pain and disease among the nursing team	Siqueira VB, Luna AWN, Melo DC, Silva LQP, Gama MP, Oliveira MLNP.	<i>Rev Enferm UFPE</i> on line	Verify the prevalence of pain and illness related to work activity and reported by nursing teams.	Quantitative, analytical, cross-sectional study	There were prevalence rates of 69.3% and 34.2% for pain and illness associated with work, respectively, especially low back pain and varices. There was a prevalence rate of 19.3% for anxiety among the participants, and they were 20 times more likely to report pain.

The low wages earned by nursing professionals contribute to individuals having multiple employment relationships and, consequently, excessive working hours, which are important factors linked to illness. The demand of the nursing profession is strenuous, with a high workload, requiring prolonged standing and, thus, increasing occupational risk associated with double employment and neglect of self-care; this makes nursing professionals susceptible to metabolic syndrome, weight gain in response to incorrect eating habits, and a lack of physical activity (Domingues *et al.*, 2019; Siqueira *et al.*, 2019). Ergonomic factors, inadequate posture, and poor working conditions are related to musculoskeletal diseases, which account for the highest frequency of sick leave and may be related to the exposure of workers to mechanical and physical loads in the work environment, for example, patient mobilization, lack of measures to reduce physical effort, and inadequate body posture associated with personal risk factors, such as advanced age (Brey *et al.*, 2017). Leaves of absence for all professionals for purposes of medical treatment are supported by law – labor laws. However, absenteeism due to illness, which is often prolonged, affects the division of labor within a nursing team, leading to overworked team members (Guimarães & Felli, 2016; Moreira *et al.*, 2018).

Functional readjustment is a strategy that aims to reallocate professionals to other duties and responsibilities compatible with their health condition when there are changes in their physical or mental state. Such readjustments lead to limitations in functional capacity, as indicated in article 24 of Law No. 8.112/1990 (Brasília, 1990). The functional readjustment of health professionals is of great importance because it contributes to the perception of nursing professionals that they can function in other areas within the nursing environment that require less physical stress. This new inclusion in the work environment stimulates the self-esteem of nursing professionals (Campos *et al.*, 2019). The work environment comprises several factors in the context of events related to the illness of nursing professionals. However, work environments can be modified by empathetic managers, partnerships between professional associations, allowing greater mobilization, and legislation, which are all essential for maintaining employment, quality of life and, consequently, excellence in the care provided to the population (Dias *et al.*, 2019). In turn, nursing work is pleasurable in places where such work is valued, teams are composed of sufficient numbers of professionals, the workload is adequate, there are incentives for professional qualification, and remuneration is adequate (Pimenta *et al.*, 2020b).

Finally, a healthy work environment contributes positively to the safety, health, and well-being of the entire team. The importance of the relationship between work and the health-disease process of employees can be evidenced through the implementation of employee health service for work-oriented issues, aiming to better monitor professionals and promote and ensure good practices in health and work relations as well as quality of life. This may mitigate exposure to occupational risks through the prevention of diseases and accidents and, therefore, ensure physical and mental health, providing a healthy work environment. It is also important for professionals and managers to foster a self-care culture because the lack of such an approach negatively impacts the quality of care provided to patients (Xavier *et al.*, 2017).

CONCLUSIONS

Although the hospital environment is familiar to the members of multidisciplinary teams, it was evidenced that nursing professionals are exposed to risk factors that contribute to their illness. The adoption of improvements in working conditions is urgent because the illness of workers is closely related to the work environment and can result in consequences, such as reduced work capacity. However, there is a dissonance between quality of life and illness among nursing professionals because there are no effective public policies focused on these professionals or legislation that regulates hours worked and adequate remuneration. Such topics should be addressed more thoroughly in the literature because the interference of working conditions with production reflects the increased workload of professionals resulting from absenteeism (sick leave). Notably, the earlier, more intense, and more frequent the exposure to intense work demands, the greater is the risk of early functional aging. Stressors within the physical and psychosocial work environment are consistently identified as conditions that negatively affect work ability, including that of hospital workers.

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