

Notification of health problems among nursing workers in university hospitals

Notificação de problemas de saúde em trabalhadores de enfermagem de hospitais universitário
Notificación de problemas de salud en trabajadores de enfermería de hospitales universitarios

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ABSTRACT

Objective: to identify the health problems of nursing workers and describe their consequences. **Method:** an epidemiological, descriptive study with a quantitative approach. The survey was conducted through the Health Monitoring System for Nursing Workers (SIMOSTE) in three university hospitals in São Paulo within a 12-month period. **Results:** a total of 970 records related to health problems were identified; most of these were related to sick leave, occupational accidents with leave, absences, and occupational accidents without leave, with a predominance of musculoskeletal and respiratory system diseases, infectious and parasitic diseases, and nervous system diseases, among others. A total of 4,161 days of work were lost because of the mentioned health problems. **Conclusion:** the results evidence the need to propose preventive strategies to mitigate and reduce health problems in nursing workers. **Descriptors:** Nursing; Workers' Health; Health-Disease Process; Workers' Health Surveillance; Health Promotion.

RESUMO

Objetivo: identificar os problemas de saúde de trabalhadores de enfermagem e descrever suas consequências. **Método:** estudo epidemiológico, descritivo, de abordagem quantitativa. O levantamento foi realizado por meio do Sistema de Monitoramento da Saúde do Trabalhador de Enfermagem (SIMOSTE), em três hospitais universitários em São Paulo, no período de 12 meses. **Resultados:** foram identificados 970 registros relativos a problemas de saúde, sendo a maioria por licença médica, acidentes de trabalho com afastamento, faltas e acidentes de trabalho sem afastamento, predominando as doenças do sistema osteomuscular, respiratório, infecciosas e parasitárias, do sistema nervoso, entre outras. Um total de 4.161 dias de trabalho foi perdido em decorrência dos problemas de saúde apontados. **Conclusão:** diante dos resultados, é imperativa a necessidade de proposição de estratégias de prevenção, a fim de amenizar e reduzir os agravos à saúde dos trabalhadores de enfermagem. **Descritores:** Enfermagem; Saúde do Trabalhador; Processo Saúde-Doença; Vigilância em Saúde do Trabalhador; Promoção da Saúde.

RESUMEN

Objetivo: identificar los problemas de salud de trabajadores de enfermería y describir sus consecuencias. **Método:** estudio epidemiológico, descriptivo, de abordaje cuantitativo. El relevamiento fue realizado a través del Sistema de Monitoreo de Salud del Trabajador de Enfermería (SIMOSTE), en tres hospitales universitarios de São Paulo, en un período de 12 meses. **Resultados:** fueron identificados 970 registros relativos a problemas de salud, siendo la mayoría de ellos por licencia médica, accidentes de trabajo con licencia, faltas y accidentes de trabajo sin licencia; predominando las enfermedades del sistema osteomuscular. Fue perdido un total de 4.161 días de trabajo como a consecuencia de los problemas de salud mencionados. **Conclusión:** ante los resultados, es imperativa la necesidad de proponer estrategias de prevención, a efectos de minimizar y reducir los problemas de salud de los trabajadores de enfermería. **Descriptor:** Enfermería; Salud Laboral; Proceso Salud-Enfermedad; Vigilancia de la Salud del Trabajador; Promoción de la Salud.

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INTRODUCTION

Nursing workers play a key role in the health care process in health institutions, establishing relationships with all professionals and working as a link in the multidisciplinary team. However, adversities in the organization and social relations of the work environment as well as the way the work process occurs affect the health-disease relation, leading to mental and physical illness.

The health-disease processes are expressed in the biophysical bodies of nursing workers through the strain resulting from exposure to the workloads⁽¹⁾.

Despite the poor conditions of its scenario, nursing still presents some growth in the labor market. Graduate nurses hold the second position in the ranking of higher education careers that generated more jobs in Brazil; nursing technicians and assistants hold the first position in the ranking for mid-level careers⁽²⁾. There are several possibilities for integration in the market, including clinics, industries, and hospitals. However, the scarcity of professionals in the market does not guarantee recognition of the work conditions that determine the different forms of illness experienced by nurses.

Studies have evidenced a morbidity profile for nursing workers consisting of musculoskeletal, cardiovascular, and respiratory diseases, mental and behavioral disorders, exposure to biological fluids, infections, and infectious-contagious and parasitic diseases, among others^(1,3-5).

In view of this scenario, the Workers' Health Surveillance Program needs to be consistent and must identify the health profile of the worker population, considering an analysis of the health situation; the characterization of the territory; and the social, economic, and environmental profiles. In addition, it is necessary to: intervene in the determining factors of risks and harms to the health of the worker population, with the aim of eliminating, mitigating, and controlling them; assess the impact of the adopted measures to eliminate such harms; support the decision-making processes of the bodies of the UHS and competent bodies within the three governmental spheres; and use the different information systems⁽⁶⁾.

It is important to emphasize the fact that one of the major challenges in this area consists in the lack of information, as the currently implemented national systems do not consider the records about the injuries that have occurred, specifically in nursing workers, in an appropriate manner.

Monitoring the health of workers represents a valuable management tool for early detection of abnormal conditions and to identify, monitor, and intervene in health problems at work⁽⁷⁾.

With this intention, the Monitoring System for Nursing Workers' Health (SIMOSTE) was developed and validated based on a research project under development in the national scenario in order to identify health problems of nursing workers⁽⁸⁾.

This system is fed with information obtained from health institutions through different notification sources, such as work accidents communications (CAT) and absences due to sick leave. It provides indicators on the dynamics of work and health problems and their consequences, considering the

specificities of nursing workers and enabling the collection of data on other workers⁽⁸⁾.

Therefore the SIMOSTE was used to achieve the objectives of the study, that is, to identify the number of notifications of health problems in nursing workers who work in university hospitals and to characterize the notifications according to data of the professional International Statistical Classification of Diseases ICD-10 group by major groups, type of leave, and time spent (in days) in order to support prevention strategies and proposals.

METHOD

Ethical aspects

The study was submitted to the Research Ethics Committee of the School of Nursing of USP-EEUSP and approved (SIS-NEP CAAE: 0132.0.196.198-11).

Design, site, and period of the study

This was an epidemiological, descriptive study with a quantitative approach, developed in three general (public and university) hospitals in the city of São Paulo. Research was conducted in the period of June 2012 to May 2013.

Population/sample

Medical and surgical units were selected to represent the other hospital units according to indications of the nursing boards. The non-probabilistic sampling by convenience⁽⁹⁾ consisted of 459 nursing workers: 126 nurses; 119 nursing assistants; and 214 nursing technicians.

Study Protocol

Data collection was performed from management reports in the Human Resources services, and from the institutional corporate records of the workers through a data collection tool, the software SIMOSTE, which consists of an online system to collect the institutional data of workers and their health problems. The variables identified were: number of workers; professional category; age; date of birth; weekly working hours; gender; work contract; wage range; health problems experienced; and type and period of leave.

Analysis of results and statistics

Data were systemized and statistically analyzed through the use of relative and absolute frequencies. The diseases were grouped according to the International Statistical Classification of Diseases (ICD-10) by major groups⁽¹⁰⁾ with the aim of a better understanding of the morbidity profile of nursing workers with international comparisons. The results were presented in tables.

RESULTS

A total of 970 work-related notifications occurred within the one-year period, related to 459 workers an average of 2.1 occurrences per worker. These data reveal that within the analyzed period there were 511 relapses resulting from the

maintenance of a sick leave or a new sick leave on the part of the same workers.

The characterization points out a higher frequency of notifications from female workers (97.63%) in comparison to male workers (2.37%), as shown in Table 1. This frequency results from the fact that nursing is a profession usually related to women.

In relation to the professional category, nursing technicians registered a higher number of notifications (47.01%), followed by nursing assistants (33.50%), totaling 80.51%. This result was in fact expected, as health care activities are mostly performed by these professionals. However, when considering the work force exposed by this category, it was observed that nursing assistants notified 2.7 times (n = 119), followed by technicians with 2.1 times (n = 214), and nurses with 1.5 times (n = 126), proportionally.

In relation to the salary range, higher salaries have a direct relation with reduced number of employment contracts. A prevalence of salaries ranging between R\$2,001.00 and R\$3,000.00 (38.66%) was found, which is considered a low wage for the workload, followed by salaries of up to R\$1,000.00 (32.68), corresponding to a very low wage for the predominant workload, which ranged between 21 and 40 hours/week (78.97%). This justifies the fact that 41.96% of the respondents had more than one employment contract sometimes up to three (13.81%), according to Table 1.

In relation to the age group, it was observed that most workers (44.64%) were aged between 30 and 39 years, followed by the age group between 40 and 49 years (28.35%).

Regarding the employment contract, all are supported by the Consolidation of Labor Laws (100%).

Table 2 shows the strain suffered by nursing workers. A prevalence of problems related to musculoskeletal system diseases (31%), respiratory system diseases (20.3%), infectious and parasitic diseases (9.5%), nervous system disorders (6.7%), and mental and behavioral diseases (6.6%), among others, was observed.

Table 1 – Characterization of notifications according to gender, professional category, number of contracts, salary range, weekly workload, and age group, São Paulo, Brazil, 2012-2013

Characteristics	General total	
	n	%
Gender		
Female	947	97.63
Male	23	2.37
Professional category		
Nurse	186	19.18
Nursing technician	456	47.01
Nursing assistant	325	33.50
Nursing attendant	3	0.31

To be continued

Table 1 (concluded)

Number of contracts		
1	563	58.04
2	273	28.15
3	134	13.81
Salary range (in R\$)		
Up to 1,000	317	32.68
Between 1,001 and 2,000	36	3.71
Between 2,001 and 3,000	375	38.66
Between 3,001 and 4,000	164	16.91
Between 4,001 and 5,000	34	3.50
Between 5,001 and 6,000	44	4.54
Weekly workload (in hours)		
Between 21 and 40	766	78.97
Over 40	204	21.03
Age group (in years)		
Between 20 and 29	171	17.63
Between 30 and 39	433	44.64
Between 40 and 49	275	28.35
Between 50 and 59	76	7.83
Between 60 and 69	15	1.55
Total	970	100.00

Table 2 – Characterization of notifications according to ICD-10 group, by major groups and total number of notifications. São Paulo, Brazil, 2012-2013

ICD	Total of notifications	
	n	%
Musculoskeletal system diseases	301	31.0
Respiratory system diseases	197	20.3
Infectious and parasitic diseases	92	9.5
Nervous system diseases	65	6.7
Mental and behavioral disorders	64	6.6
External causes (trauma)	60	6.2
Diseases of the eye and adnexa	60	6.2
Digestive system diseases	48	4.9
Circulatory system diseases	28	2.9
Disorders of the genitourinary system	21	2.2
Diseases of the ear and mastoid process	21	2.2
Skin and subcutaneous tissue diseases	13	1.3
Total	970	100.0

Musculoskeletal diseases represented 301 notifications; 173 cases were related to back pain.

Of the 197 notifications of respiratory system diseases, 29 were due to influenza, 29 to upper airway infections, 27 to tonsillitis, and 21 were due to acute sinusitis.

Infectious and parasitic diseases presented 92 notifications: 85 were due to diarrhea and gastroenteritis of infectious origin.

Regarding nervous system diseases, of the 65 notifications a total of 39 were related to headache and 21 to migraine.

Mental and behavioral disorders presented 64 notifications: 24 depressive episodes and 18 cases of anxiety disorder.

External causes accounted for 60 notifications: 10 related to superficial injury of the wrist and hand; nine related to superficial injury of the ankle and foot; nine related to dislocation, sprain, and strain of joints and ligaments at the ankle and foot level; and four related to superficial injury of the leg.

Regarding diseases of the eye and adnexa, which presented 60 notifications, we found a predominance of conjunctivitis (n=59) related to the handling of patients.

Of the 48 notifications related to the digestive system, 14 were gastritis and duodenitis and 12 were gastroenteritis and noninfectious gastroenteritis and colitis.

In relation to the other notifications, circulatory system diseases (n=28) presented a predominance of hypertension (n=10), and disorders of the genitourinary system (n=21) presented a prevalence of urinary tract disorders (n=11). Of the 21 notifications of diseases of the ear and mastoid process, 10 were related to inner ear disorders. Finally, of the 13 notifications of diseases of the skin and subcutaneous tissue, six were due to cellulitis.

Within the period of the study the total number of registered notifications was 970 for 4,161 days not worked, representing an average of 4.3 days per notification, as shown in Table 3.

In the present study, most notifications occurred due to sick leave (93.3%), work accidents with leave (5.4%), absenteeism (0.8%), and work accidents without leave (0.5%), as shown in Table 3.

A total of 4,161 days were lost due to work-related health problems. Of these, 56.9% were due to sick leave and 42.9% were due to work accidents. Absences represented 0.2% of the days not worked.

In general, sick leave presented a higher number of notifications and days lost. However, work accidents demanded a greater period of time for the full reestablishment of the worker's health, with average of 34.3 days/notification.

Table 4 shows the variation of days lost with notifications of health problems in nursing workers.

In this sense, the higher incidence occurred due to diseases of the musculoskeletal system, with 1,254 days lost, followed

by mental and behavioral disorders (n=964), consequences by external causes/trauma (n=699), respiratory system diseases (n=308), diseases of the eye and adnexa (n=252), infectious and parasitic diseases (n=166), circulatory system diseases (n=150), nervous system diseases (n=135), digestive system diseases and diseases of the skin and subcutaneous tissue (n=79), diseases of the ear and mastoid process (n=48), and genitourinary system diseases, which represented the lowest number of days not worked (27 days).

Table 4 – Characterization of notifications according to ICD-10 group, by major groups and total number of days lost, São Paulo, Brazil, 2012-2013

ICD	Total of days lost	
	n	%
Musculoskeletal system diseases	1254	30.1
Mental and behavioral disorders	964	23.2
Consequences by external causes (trauma)	699	16.8
Respiratory system diseases	308	7.4
Diseases of the eye and adnexa	252	6.1
Infectious and parasitic diseases	166	4.0
Circulatory system diseases	150	3.6
Nervous system diseases	135	3.2
Digestive system diseases	79	1.9
Skin and subcutaneous tissue diseases	79	1.9
Diseases of the ear and mastoid process	48	1.2
Disorders of the genitourinary system	27	0.6
Total	4161	100.0

DISCUSSION

Notifications due to health problems in nursing workers point to a higher incidence in female workers. This was in fact expected, as nursing is a profession predominantly performed by women. Analysis of the data from the registrations of nursing professionals in the Federal Council of Nursing corroborates this, showing that the female presence (87.35%) exceeds the male presence (12.65%) in the total of nursing workers in Brazil⁽¹¹⁾.

In the technical and social division of nursing work, the nurse predominantly performs the management while the other members of the team are responsible for assisting the patients, thus justifying the higher incidence of health problems in nursing assistants (33.50%) and technicians (47.01%) found in this study.

Corroborating this finding, a study that analyzed the factors associated with absenteeism due to self-reported diseases in nursing workers presented similar results; nurses assume

Table 3 – Characterization of the notifications according to type and period (in days) of leave, São Paulo, Brazil, 2012-2013

Type of leave	n	Period	Days/notification
Total: sick leave	905	2368	2.6
Total: work accidents with leave	52	1785	34.3
Total: illness-related absence	8	8	1.0
Total: work accidents without leave	5	0	-
Total of notifications	970	4161	4.3

leadership roles in the team, requiring more diligence and presenting a lower risk of contamination and disease as they work in tasks of an administrative nature. In turn, technicians presented a high demand for care work and higher level of exposure to diseases in the hospital context⁽¹²⁾.

Data on salary range, workload, and number of employment contracts evidenced the work overload experienced by these workers, as they need to have more than one employment contract due to the low remuneration. A Brazilian study on the professional perspectives corroborates this information, emphasizing the fact that nursing represents one of the professional categories that has suffered significant wage losses over the last years⁽²⁾.

Such a situation is aggravated by the fact that the weekly workload of nursing workers usually exceeds 44 hours, as they have to cover absences, vacation, days off, and sick leave. Therefore it is confirmed that the effective weekly working hours represent another generator of exhaustion due to the exacerbated use of the workforce⁽¹³⁾.

Younger adults, aged between 30 and 39 years, presented more health problems. In addition to revealing the time of exposure necessary for the early appearance of strain affecting nursing workers, these data may also support the development of preventive actions and strategies aimed at the health of these professionals.

The variety and severity of the health problems of nursing workers are evidenced by the biophysical strain processes to which they are subjected due to the nature of the job and the conditions necessary to perform the work⁽¹⁴⁾.

The present study evidenced a high incidence of notifications due to musculoskeletal diseases (31%). A study conducted with all workers in a university hospital in North Carolina (USA) found that one-third of musculoskeletal injuries resulted from the handling of patients during the care process, including lifting, transferring, repositioning in the bed or chair, transportation in the bed or chair, and avoiding falls, among others. The highest rates of injuries were identified in hospital nurses (50%) and nursing assistants (23.1%); in turn, nursing assistants presented the highest rate of accidents⁽¹⁵⁾.

Another American study pointed out that a considerable number of workers are forced to remain standing for long periods, without walking or sitting, during the work shift. This fact is usual for nursing staff. It may cause foot pain, leg swelling, varicose veins, muscle fatigue, lower back pain, stiff neck and shoulders, and other health problems⁽¹⁶⁾.

A study suggests the influence of psychosocial demands on the musculoskeletal system, pointing out that these cultural and psychosocial demands may affect sensitivity to pain, affecting the attention to symptoms and increasing the number of reports of symptoms of musculoskeletal disorders and/or perception of their causes⁽¹⁷⁾.

This is corroborated by an Iranian study that identified a significant association between musculoskeletal injuries and stress in the work environment. In addition, the study found a significant association between work-related stressors, such as work demands, having control of the developed activities, the roles of the individual, changes, and reports of

musculoskeletal injuries, especially in the following regions: neck; shoulders; back; and waist⁽¹⁸⁾.

Regarding mental diseases, a predominance of notifications involved depressive episodes (37.5%) and anxiety disorders (28.1%). A study developed with the nursing staff of a university hospital in Goiânia found that mood disorders accounted for a significant part of the leave. In addition, most of the population in the study worked in direct care to patients, providing a service whose characteristics include high psychological demands, low social support, and little control over the work⁽¹⁹⁾.

Health workers usually report health changes caused by their work. A national study identified distinct problems that are usually verbalized by them, including anguish, sleep deprivation, weight loss and/or gain, and pain, possibly resulting from the work itself or its excess. It was also pointed out that inappropriate environments, poorly organized activities, lack of validation of the workers, insufficient participation in decision-making processes, excessive demands, low wages, and performance of repetitive activities that contribute to incorrect postures in undesirable work situations may favor illness⁽²⁰⁾.

These situations are closely related to work accidents, which represented 6.2% of the notifications in the present study a number that could be reduced by preventive measures implemented by employees and employers to contribute to the improvement of labor and health conditions.

The occurrence of respiratory diseases appears as the second leading cause of notifications (20.4%); it is related to contact with pathogens such as viruses, bacteria, microorganisms, and fungi. These problems may also be associated with the high demands of the work, leading to a reduction in the immune response of the workers. According to a study on financial expenditures for medical leave among health professionals, 12% of the expenditure with absenteeism-disease is related to biological strains, especially tonsillitis⁽²¹⁾.

Health professionals are exposed to pathogenic microorganisms, including the human immunodeficiency virus (HIV) which presents a risk of transmission of 0.3% after exposure to infected blood. The adoption of preventive measures such as compliance with standard precautions and antiretroviral chemoprophylaxis after exposure to contaminated material is necessary⁽²²⁾.

Respiratory diseases are undervalued by the workers and their employers; they consider these as temporary problems, as they demand few days of leave. However, emerging diseases such as influenza (H1N1) have been considered a global threat; emerging acute respiratory syndromes may represent important risks for health workers, particularly those in nursing, in epidemic situations⁽²³⁾.

In relation to diseases of the nervous system, headaches accounted for 60% of the notifications. A study on headache in nursing workers pointed out that pharmacological treatment is used by 86% of the studied population. General analgesics were the most frequently mentioned drugs⁽²⁴⁾. These findings reinforce the search for self-medication, masking the symptoms that usually need to be investigated in view of the vulnerability of the nursing worker to illness.

In China the prevalence of primary headache in nurses is higher than in the general population⁽²⁵⁾. In relation to the financial impact, headache accounts for approximately 20% of the absenteeism-disease in Brazilian health institutions⁽²¹⁾.

Problems related to the genitourinary system are expressed through disorders of the urinary tract, with 52% of the notifications, an aspect that is also evidenced in other studies^(1,4). These may be associated to factors such as contamination of hands, low water intake during work shifts, and urinary retention due to the demand of the activities, all of which contribute to the occurrence of urinary tract infections⁽¹⁾.

Following the recommendations of the Ministry of Health for surveillance units⁽²⁶⁾, in the present study the compulsory notifiable diseases, such as work-related musculoskeletal disorders, human influenza, pneumonia, and mental and behavioral disorders, were not registered as work-related diseases. This evidences the difficulty of operationalizing policies for workers' health and the absence of an effective follow-up to assess the effectiveness of these policies in health institutions.

Research on the theme in nursing workers evidenced underreporting in approximately 75-85% of cases^(1,27).

Despite advances in information on work-related diseases, it is necessary to bear the different existing challenges in mind, particularly in view of the informality of nursing work social relations, in which cooperative contracts that deprives workers of their social rights are quite usual. This informality hinders the construction of public policies as well as the adoption of preventive strategies for the problems related to them.

In this study, taking into account the one-year period of data collection, a total of 4,161 working days were lost due to the health problems of nursing workers the equivalent of 11.4 years of work lost in one year. Sick leave prevailed with a total of 6.5 years, followed by work accidents, representing a loss of 4.9 years, and other absences with eight lost days.

Research on expenditures related to absenteeism-disease in health professionals reported major losses related to musculoskeletal diseases (48%) and mental and behavioral disorders; depression alone accounted for 15% of the losses⁽²¹⁾.

Corroborating these data, another study on absenteeism-disease in nursing workers found that the group of musculoskeletal system diseases and mental and behavioral disorders, with 41.5% (4,957) and 28.4% (3,393) respectively, represented the two groups with the greatest impact on the number

of days of leave. A total of 11,948 lost days were identified, that is, 32 years of work lost in one year⁽⁴⁾.

The aforementioned strain processes may lead to the worst consequence the death of the worker. Although not found in the present research, a study that investigated causes of death in nurses pointed to cancer and suicide with higher rates than the general population. Cancer was related to the exposure to chemical loads and night shifts, while suicide was found to be related to the psychic loads at work⁽²⁸⁾.

Workers' health represents an essential human right⁽²⁹⁾. Therefore, it is necessary to diagnose and monitor the health problems related to the nursing work process in order to identify reliable statistics that support specific interventions to this group that may reduce the exposure to workloads that result in strain processes and their consequences.

The collection of secondary data in the institutional records comprises a limitation of this study; it hindered the assessment of relations of causality and intensification of workloads in the generation of strain processes. In view of the reports of the workers, such collection would certainly be possible. Furthermore, the possibility of dialogue between workers and health institutions is important so that both can find strategies to restore the health of professionals.

CONCLUSION

The present study enabled an understanding that the health of nursing workers is at risk. This situation is evidenced by long working hours, multiple employment contracts, low wages, high number of sick leave days, accidents, and days lost, as well as by poor work environment conditions. The dynamics of work of the staff in the hospital institutions exposes the workers to inappropriate conditions that consist in determining factors of the reported health problems.

The SIMOSTE was assessed as a system that is able to achieve the objectives of the research, and the collected data provide support for the continued assessment of the health of workers. These should be monitored and compared on an annual basis upon implementation of preventive measures. Therefore, further studies on the theme are necessary, taking into account the reports of workers. In addition, political will is required for the incorporation of such measures by the studied institutions.

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