

# Health problems of nursing workers in a public educational institution

AGRAVOS À SAÚDE DOS TRABALHADORES DE ENFERMAGEM EM UMA INSTITUIÇÃO PÚBLICA DE ENSINO

PROBLEMAS A LA SALUD DE LOS TRABAJADORES DE ENFERMERÍA EN UNA INSTITUCIÓN EDUCATIVA PÚBLICA

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## ABSTRACT

**Objective:** To identify the issues occurred with nursing workers through a Health Monitoring System for Nursing Workers (SIMOSTE) and to describe the consequences of those problems. **Method:** This is a quantitative, exploratory and descriptive study realized in a teaching hospital in the west region of the city of São Paulo. **Results:** From the SIMOSTE, 1.847 occurrences were registered in a six month period. Within the main occurrences, medical licenses, work related accidents with and without removals; psychiatric consultations and psychotherapy were highlighted. **Conclusion:** The data points out to the need for the development of new health vigilance actions to notify accidents and illness related to work, besides the prevention of issues.

## DESCRIPTORS

Nursing  
Occupational health  
Epidemiologic surveillance

## RESUMO

**Objetivo:** Identificar os agravos ocorridos com os trabalhadores de enfermagem por meio do Sistema de Monitoramento da Saúde dos Trabalhadores de Enfermagem (SIMOSTE) e descrever as consequências desses agravos. **Método:** Trata-se de um estudo de natureza quantitativa do tipo exploratório descritivo que foi realizado em um hospital-escola situado na zona oeste do município de São Paulo. **Resultados:** A partir do SIMOSTE foram registradas 1.847 ocorrências no período de 6 meses. Entre as principais ocorrências destacam-se as licenças médicas, os acidentes de trabalho com e sem afastamentos, os atendimentos psiquiátricos e psicoterapia. **Conclusão:** Os dados apontam para a necessidade do desenvolvimento de novas ações de vigilância em saúde voltadas para a notificação dos acidentes e das doenças relacionadas ao trabalho, além da prevenção dos agravos.

## DESCRITORES

Enfermagem  
Saúde do Trabalhador  
Vigilância epidemiológica

## RESUMEN

**Objetivo:** Identificar los problemas de salud producidos en el personal de enfermería por medio del Sistema de Vigilancia de la Salud de los Trabajadores de Enfermería (SIMOSTE) y describir las consecuencias de esos problemas. **Método:** Estudio exploratorio cuantitativo y descriptivo realizado en un hospital universitario situado en el oeste de la ciudad de São Paulo. **Resultados:** En SIMOSTE se registraron 1.847 incidentes ocurridos en un periodo de 6 meses. Entre los eventos más importantes se destacan las licencias médicas, los accidentes laborales con y sin baja laboral, atención psiquiátrica y psicoterapia. **Conclusión:** Los datos apuntan a la necesidad de desarrollar nuevas acciones de vigilancia en salud dirigidas a la notificación de los accidentes y de las enfermedades profesionales, además de su prevención.

## DESCRIPTORES

Enfermería  
Salud laboral  
Vigilancia epidemiológica

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## INTRODUCTION

In the field of worker's health, the monitoring of injuries/harms allow managers and occupational health workers to identify risks, accidents and diseases related to the worker's health. This knowledge is important because it characterizes the illness of workers profiles, for the management of health information, to implement health programs and safety at work, as well as to provide support in the organization and structure of health services<sup>(1)</sup>.

In accordance with the Ordinance 3120/98, the Workers' Health Surveillance comprehend a continuous and systematic action over time, to detect, to research and analyze determinants and conditioning factors for health problems related to processes and work conditions. Thus, technological, social and organizational aspects should be contemplated with the purpose of planning, execution and assessment of interventions about those factors, for its reduction or elimination<sup>(2)</sup>.

The Worker's Health Surveillance composes a group of practices articulated above sectors, which specificity is centered in the relationship of health, environment and work processes and in this one, with assistance aiming the improvement of the worker's quality of life and health. It still does not constitute an unlinked and independent area of health vigilance as a whole, but on the other hand, it intends to add to the group of actions from the health vigilance, strategies to produce knowledge and mechanisms of interventions about work processes<sup>(2)</sup>.

In relation to health field workers, members of nursing teams are highlighted not only by the quantitative context, but by the actual context, indicating a high number of accidents and diseases related to work, with the prevalence of musculoskeletal disorders caused by work; and mental and behavioral disorders<sup>(3)</sup>.

In this worrying scenario, the under notification of data regarding the workers' health problems is observed, the under registration of accidents with biological fluids, late diagnosis of musculoskeletal problems, within other issues that, over its exposition can cause diverse disabilities to nursing professionals.

Thus, investigations, the notification of work related accidents and the early detection of damages are within the main requirements for vigilance action, as they contribute for the development of more appropriate and directed actions<sup>(4)</sup>.

The use of technological tools is a way to capture health problems of workers and its determinants that generate potential wear, as well as monitoring the health of those workers by indicators<sup>(5)</sup>.

Hence, the software *Health Monitoring System for Nursing Workers* (SIMOSTE) aims to provide instruments to managers of health institutions for health vigilance of nursing workers by not only capturing typical accidents, but health problems of nursing workers and its

determinants, which can generate accidents, diseases and other wear processes that compromise the quality of life at work and the provided assistance<sup>(5)</sup>.

Therefore, considering the continuous vigilance as indispensable to know the health status of nursing workers and to plan measures to promote better work conditions, the objective of the present study was to identify the occurrences (work related accidents with and without removals, medical licenses and psychological consultations) of nursing workers by the SIMOESTE and to describe its consequences.

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## METHOD

This is an exploratory, descriptive study with a quantitative approach. It was conducted in a teaching hospital in the west region of the city of São Paulo. The referred hospital is located in a total area of 352.000 square meters, with 2.200 beds distributed in six specialized institutes (Central Institute, Psychiatric Institute, Orthopedic and Traumatology Institute, Children's Institute, Heart Institute and Radiology Institute), two auxiliary hospitals (Auxiliary Hospital of Suzano and Auxiliary Hospital of Cotoxó), a rehabilitation division and an associate hospital. The nursing team from this institution is composed by 4.272 workers, approximately. The study population is adequate for the registered occurrences in the Corporative Institutional Registry from workers of Specialized Services in Safety Engineering and in Labor Medicine in the period of December of 2012 to March of 2013. For data collection, the SIMOSTE software was used, in which the occurrences were registered, detailed as work related accidents with and without exclusion, medical licenses and psychological consultations. The collected data was statistically analyzed by relative and absolute frequency and presented as tables. This is a sub project of the SIMOSTE implementation, approved by the Ethics in Research Committee from the Nursing School of the Universidade de São Paulo nº 718/2008.

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## RESULTS

In the period of December of 2012 to March of 2013, the SIMOSTE captured 1.847 occurrences involving nursing workers assisted at the Specialized Services in Safety Engineering and in Labor Medicine.

In relation to age groups, most of workers (64.21%) were between 30 to 49 years, followed by 356 (19.27%) between 50 to 59 years. A small parcel of notified population – 216 (11.69%) – were between 20 to 29 years old, 51(2.76%) between 60 to 69 years. It was also verified the inexistence of data referred to age in 38 (2.06%) records (Table 1). The population with more health problems was the young adults, as revealed by this data.

The major part of nursing workers attended were female – 1.689 (91.45%) – and 158 (8.55%) were male (Table 1). This difference in gender can be explained by the nursing contingent being almost all constituted by women.

Regarding professional category, the nursing assistants adds 80.94% of occurrences, 17.38% were nurses and 1.68% were technicians (Table 1).

**Table 1** - Distribution of captured occurrences by SIMOSTE presented by age group, gender and professional category – São Paulo, 2012/2013

	N°	%
<b>Age Group</b>		
20 to 29 years	216	11.69
30 to 39 years	626	33.89
40 to 49 years	560	30.32
50 to 59 years	356	19.27
60 to 69 years	51	2.76
Without information	38	2.06
<b>Total</b>	<b>1.847</b>	<b>100</b>
<b>Gender</b>		
Male	158	8.55
Female	1.689	91.45
<b>Total</b>	<b>1.847</b>	<b>100</b>
<b>Professional Category</b>		
Nurse	321	17.38
Nursing Technician	31	1.68
Nursing Assistant	1.495	80.94
<b>Total</b>	<b>1.847</b>	<b>100</b>

Table 2 shows the wear processes captured by the SIMOSTE in accordance with the International Statistical Classification of Diseases and Health Related Problems (CID-10). It can be observed that musculoskeletal diseases were the most prevalent (34.70%), followed by the diseases of the respiratory system (13.05%), consequences by external causes- traumas (12.67%), infectious and parasitic diseases (10.32%), mental and behavioral disorders (7.76%), and eyes and annexes diseases (6.61%) (Table 2).

**Table 2** - Distribution of wear captured by SIMOSTE, following the grouped CID-10 – São Paulo, 2012/2013

	N°	%
Musculoskeletal diseases	641	34.70
Diseases of the respiratory system	241	13.05
Consequences by external causes (traumas)	234	12.67
Infectious and parasitic diseases	191	10.32
Mental and behavioral disorders	144	7.76
Eyes and annexes diseases	122	6.61
Symptoms, signs and abnormal findings of clinical and laboratory exams, not classified in other part	74	4.00
Diseases of the nervous system	66	3.57
Diseases of the circulatory system	55	2.97
Influencing factors of health status and contact with health services	27	1.45
Contact with exposition to communicable diseases (Biologic Accident)	25	1.35
Skin and subcutaneous tissue diseases	11	0.72
Diseases of the digestive system	9	0.48
External causes of morbidity and mortality	6	0.30
Endocrine, nutritional and metabolic diseases	1	0.05
<b>Total</b>	<b>1.847</b>	<b>100</b>

Regarding the prevalence of musculoskeletal diseases, within the 641 occurrences, 350 were correspondent to dorsalgias.

In relation to the prevalence of respiratory system diseases, from the 241 occurrences, 45 were related to acute infections of the upper airways with multiple locations and not specified, 42 related to influenza [flu] due to a non-identified virus, 35 to acute sinusitis and 31 to acute tonsillitis.

From the 234 occurrences related to consequences by external causes (traumas), considering the most prevalent, 41 corresponded to superficial trauma on the wrist and hand, 27 to superficial trauma on the leg, 21 to dislocation, articulation and ligaments sprain and distention at ankle and foot level, 19 superficial ankle and foot trauma, 18 wrist and hand injuries and 15 superficial shoulder and arm trauma.

Within the 191 occurrences of infectious and parasitic diseases, the higher prevalence ones were diarrhea and gastroenteritis with presumed infectious origin, totalizing 150 occurrences, and 22 occurrences of infections by the herpes virus (simple herpes).

Regarding the occurrences related to mental and behavioral disorders, depressive episodes (52), recurrent depressive disorder (29) and other anxiety disorders (25) were prevalent.

In relation to eyes and annexes diseases, all occurrences (122) were related to conjunctivitis.

The 1847 occurrences were distributed as 1.600 (86.63%) referred to medical licenses, 147 (7.96%) to work related accidents with removal, 50 (2.71%) to psychological consultation and 50 (2.71%) to work related accident without removal (Table 3).

**Table 3** - Distribution of removals captured by SIMOSTE in accordance to the type of occurrence – São Paulo, 2012/2013

Type of occurrence	N°	%
Psychological consultation	50	2.71
Work related accident with removal	147	7.96
Medical license	1.600	86.63
Work related accident without removal	50	2.71
<b>Total</b>	<b>1.847</b>	<b>100.00</b>

The distribution of occurrences by institute demonstrated the Central Institute presenting the higher number of occurrences – 1.045 (56.50%) –, followed by the Heart Institute 354 (19.7%), Children's Institute 155 (8.23%) and Orthopedic and Traumatology 143 (7.74%) (Table 4).

**Table 4** - Distribution of occurrences captured by SIMOSTE by institute – São Paulo, 2012/2013

Institute	Nº	%
Central Institute	1.045	56.50
Heart Institute	354	19.17
Institute	Nº	%
Children's Institute	155	8.23
Orthopedic and Traumatology Institute	143	7.74
Psychiatric Institute	59	3.20
Radiology Institute	31	1.62
Auxiliary Hospital of Suzano	28	1.52
Auxiliary Hospital of Cotoxó	22	1.19
Administration Building	7	0.38
Physical Medicine and Rehabilitation Institute	2	0.11
Auxiliary Hospital of Sapopemba	1	0.05
<b>Total</b>	<b>1.847</b>	<b>100</b>

## DISCUSSION

Studies showed the age group with higher index of sickness is between 19 and 45 years, and the same happens with the data in Table 1, being 33.89% between 30 and 39 years and 30.32% between 40 and 49 years. The female gender prevalence, 91.45% is due to the higher number within the studied scenario and from the professional category. In relation to the professional category with the higher number of occurrences, the medium level workers are the most affected, considering those, the most prevalent in the nursing teams in a national scenario<sup>(6-7)</sup>.

In relation to the problems, work related musculoskeletal disorders (WRMD) are predominant and represent the main group of health problems within the occupational diseases in our country<sup>(8)</sup>.

A study conducted in United States estimated the population prevalence and the total number of American workers that are exposed to physical ergonomic risks, as vibration, work in a tight space, on the knees, with flexion or body twist, climbing, and with repetitive movements. The repetitive movement was prevalent within the ergonomic risks (27%) in the American population. Thus, a big part of the work force of the USA is exposed to ergonomic risks known to be associated to musculoskeletal lesions<sup>(9)</sup>.

A research conducted with nursing workers analyzed 1.249 notification records of work accidents; it found 637 accidents by exposition to biological fluids, 592 were severe accidents and 20 were notifications by REL/WMSD. Regarding the evolution of cases, it was verified that 564 (95.2%) of workers had temporary incapacity, 23 (3.8%) were cured and returned to work and 3 (0.5%) had partial incapacity. In the study, 20 workers registered REL/WMSD, being 14 (70%) females, a fact which deserves attention, because only 1 (5%) of the studied workers were discharged. The results confirmed that the exposition is an aggravation to the worker's health and the monitoring of expositions requires special attention<sup>(10)</sup>.

The diseases from the respiratory system were highlighted in the present study, showing the exposition of nursing workers to biological fluids during the manipulation of patients with infect contagious diseases, as well as the lack of adherence to equipment with individual protection and the practice of washing hands. A recent study revealed in 2003, in Ontario, that there was a big acute respiratory syndrome outbreak showing the faults in the health services that contributed to the infection dissemination and death of two nurses. The authors argued that after few years, those faults were corrected and the health services in Ontario can be not prepared for a H1N1 outbreak<sup>(11)</sup>.

The mandatory use of disposable masks – N95 for workers when in contact with infected patients by the H1N1 virus (confirmed and/or suspected) requires attention, as the orientation of the Occupational Safety and Health Administration foresees that in situations where the employers do not provide sufficient quantities of disposable masks, the professionals can deny to provide care to those patients<sup>(12)</sup>.

The medical licenses arising from external causes (traumas) represented 234 (12.67%) from the total of occurrences. A research that analyzed the frequency and severity of aggressions and lesions in psychiatric nurses observed that physical violence against those who work in psychiatric sectors increased in the last years. Between the 110 nurses of 5 studied institutions, 80% of those workers were already assaulted, 65% were hurt and 26% were severely injured. Within the included lesions, were fractures, eye lesions and permanent incapacity<sup>(13)</sup>.

Concerning infectious diseases, studies conducted with workers who suffered occupational exposition to biological fluids demonstrated that those professionals manifested feelings as desperation, fear, anxiety, preoccupation and, since the accident until the wait for the exam results, a main part of them react in a similar way, that is, the wait for results is as distressful as the accident itself, becoming necessary the development of preventive measures<sup>(14)</sup>.

The risks and the accidents with biological fluids can bring temporary and/or permanent physical and/or mental incapacity to workers. But many work related accidents do not need removals. In the present study, for example, in the studied period, it was found 50 occurrences of work related accidents without removals<sup>(15)</sup>.

Corroborating with other researches, in the present study, the mental and behavioral disorders appear with the fifth higher occurrence in nursing workers. A study with 15 members of a nursing team from an intensive care therapy identified the vulnerability of those workers to the involvement with psychotropic substances. The results showed the involvement occurring due to high levels of stress, the work overload, the chargers from headship and the dissatisfaction in the work or family environment. In the studied insti-

tutes, the working hours of the nursing professionals is 40 hours and many of them perform a double journey, in consequence, it was observed 18 occurrences due to stress<sup>(16)</sup>.

The most pointed mental and behavioral disorders categories by the literature are the common mental disorders, which include depression, anxiety disorders and stress. The same happen with workers in the present study, because in a short period of time it was found 52 (2.82%) depression disorder episodes and 2 cases (1.57%) of recurrent depressive disorder<sup>(17)</sup>.

Thus, nursing is recognized as one of the occupations with high risk of stress and illness. The musculoskeletal disorders win a growing higher proportion within those professionals. Stress and psychosocial aspects work related are important risk factors to be identified and comprehended in a labor environment<sup>(18)</sup>.

Regarding the post-traumatic stress, a study identified that socio-demographic, biologic, psychological characteristics, characteristics of morbidity and exposition to traumatic occupational and non-occupational events, the work and job characteristics were associated to post-traumatic stress disorders in workers of emergency services<sup>(19)</sup>. The present study confirmed the high incidence of post-traumatic stress, presenting 18 occurrences (0.97%).

It was evident that mental disorders can be related to work, inadequate labor environments, ways of how activities are organized, the low value of workers, the dissatisfactory participation in decisions, within other factors, being able to affect not only nursing workers, but from other careers not related to health<sup>(20)</sup>.

It is important to note that other symptoms can be the *allowed* exacerbation of a mental disorder, and protects the worker from discrimination, however, it contributes to the under notification of a severe problematic in the world of work. The example of that is the headache caused by stress and consequently, to the indiscriminate use of drug therapy. The headache, following the CID (R15), appears notified as signs, symptoms and abnormal findings of clinical lab exams, not classified in other part, and not as a disease of the nervous system, which favors its under notification and the no association to the labor environment<sup>(21)</sup>.

For the return in the labor environment of workers with mental disorders, the development of strategies is necessary for the worker to be understood by the other team members, to count with the supervisors support for this return to be healthy, minimizing suffering<sup>(22)</sup>.

The quality of the nursing assistance provided to patients, considering the actual health status of workers, favors errors involving the nursing team and this is a delicate and critical question, with a direct and meaningful effect in the patients' prognosis. Studies reveal that the sleep, mental health problems and long journeys of work are contributing factors to the occurrence of errors during the execution of activities<sup>(23)</sup>.

The eyes and annexes diseases were notified in the present research and it few studies were observed in the literature describing those aggravations<sup>(24)</sup>, however, the distribution of occurrences in accordance with CID in the group of eyes and annexes in the present study deserves attention, considering a total of 122 occurrences.

Regarding the distribution of occurrences, it was verified that medical licenses are the predominant type of removal. In relation to work related accidents, the under notification of accidents can be pointed out as cause of low index of registries (3.4%), as in this institution the work force is numerous and the nursing team is composed by 4.272 workers. Medical licenses characterized by removals lower than 15 days, in detriment of work related accidents registries, have been used by medical services, as it secures the worker's rest and apparent recovery from apparent health conditions. For the workers, this conduct is favorable because it eliminates the feared bureaucracy needed to the formal removal, besides not putting the monthly payment at risk<sup>(5)</sup>.

Regarding the types of removals, in first place are the medical licenses (86.63%), followed by work related accidents with removal (7.96%). The reasons for removals, in accordance with the literature were mental disorders<sup>(6-7)</sup>, differently from the Table 5 of this study, that points to diseases of the musculoskeletal system (34.70%), respiratory system (13.05%), traumas (12.67%), infectious and parasitic diseases (10.32%) and mental and behavioral disorders (7.76%).

In relation to removals distributed by institutes, the present study found that in the Central Institute, the occurrences represented a total of 57.8% of nursing workers. In the Orthopedic Institute, this index is 46.2%, followed by the Heart Institute (34%), Children's Institute (32.9%), and Psychiatric Institute (28.5%). This data is alarming and demonstrate how much nursing workers are getting ill in their labor environment.

Aging affect the nursing team and this tendency is problematic for all team, because as new diseases are appearing, it consequently causes the illness of workers. As a form of prevention, the development of strategies based in evidence is needed, so those workers can age in a healthy way<sup>(25)</sup>.

## CONCLUSION

The worker's health vigilance through information systems and monitoring is a strategy to identify health issues and its consequences to the nursing worker's health. The present study found during the studied period, 1.847 occurrences by the SIMOSTE, involving the nursing workers assisted in the Specialized Services of Safety Engineering and Labor Medicine. Within the main occurrences, the medical licenses, the work related accidents with and without removals; the psychiatric and

psychological consultations are highlighted. It can be observed that the most prevalent wear processes were the diseases of the respiratory system (13.05%), the consequences by external causes – traumas (12.67%), infectious and parasitic diseases (10.32%), mental and behavioral disorders (7.76%) and the eyes and annexes diseases (6.61%). The illness of workers brings out intrinsic questions to the work process of the nursing team

which need to be revised, with an adequate workload to the reduced number of professionals, low salaries and long journeys. The results from the present study signals the need to implement tools to monitor the nursing workers health, being able to capture beyond the typical accidents, the wear processes that not always ends up in disease, but it makes the worker disabled and generates impact in the quality of the offered work.

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