



SOCIAL REPRESENTATIONS OF OCCUPATIONAL ACCIDENT RISKS

Representações sociais acerca dos riscos de acidentes de trabalho

Representaciones sociales sobre los riesgos de accidentes de trabajo

Pablo Luiz Santos Couto

Guanambi Higher Education Center (*Centro de Ensino Superior de Guanambi - CESG*) - Guanambi (BA) - Brazil

Andréia Cristina Gomes

Guanambi Higher Education Center (*Centro de Ensino Superior de Guanambi - CESG*) - Guanambi (BA) - Brazil

Fernanda Fernandes Alves

Guanambi Higher Education Center (*Centro de Ensino Superior de Guanambi - CESG*) - Guanambi (BA) - Brazil

Edmar Castelan

Pontifical Catholic University of Minas Gerais (*Pontifícia Universidade Católica de Minas Gerais - PUC/MINAS*) - Belo Horizonte (MG) - Brazil

Rachel Verdan Dib

Rio de Janeiro State University (*Universidade do Estado do Rio de Janeiro - UERJ*) - Rio de Janeiro (RJ) - Brazil

Magno Conceição da Mercês

Bahia State University (*Universidade do Estado da Bahia - UNEB*) - Salvador (BA) - Brazil

Antônio Marcos Tosoli Gomes

Rio de Janeiro State University (*Universidade do Estado do Rio de Janeiro - UERJ*) - Rio de Janeiro (RJ) - Brazil

ABSTRACT

Objective: To analyze nursing professionals' social representations of occupational accident risks. **Methods:** Qualitative study based on the social representations theory carried out with 70 nursing professionals (nurses and technicians) on night duty at a Regional Hospital in the Municipality of Guanambi, Bahia, Brazil, from march to April 2017. Free association of words and in-depth interviews were used to collect data. **Results:** The most significant and frequent words used to refer to occupational risks were: accident, safety and bacteria. Biological risks were referred to using the words: blood, bacteria, secretion and contamination. The social representations of occupational accident risks show that scientific knowledge is disseminated in the group, reinforcing how much the subject is part of the daily work, as it is spread and shared among them. The participants represent risks and accidents as something far from their labor reality, that is, they think that they are not at risk of becoming contaminated or suffering another type of accident. **Conclusion:** The results demonstrated, through the social representations, that nursing professionals know about the existence of occupational accident risks, such as occupational risks and biological risks, and recognize that other people, and not themselves, are at danger, which suggests a difficulty in recognizing their own insecurity.

Descriptors: Occupational Health; Accidents, Occupational; Nursing.

RESUMO

Objetivo: Analisar as representações sociais de profissionais de enfermagem acerca dos riscos de acidentes de trabalho. **Métodos:** Estudo do tipo qualitativo, com eixo teórico na teoria das representações sociais, realizado com 70 profissionais de enfermagem (enfermeiros e técnicos) em regime de plantão noturno em um Hospital Regional do Município de Guanambi, Bahia, Brasil, no período de março e abril de 2017. Utilizou-se como técnica de coleta de dados a associação livre de palavras e a entrevista em profundidade. As evocações foram analisadas mediante a análise de conteúdo. **Resultados:** As palavras evocadas pelos entrevistados, com maior significação e frequência, para o termo indutor riscos ocupacionais, foram: acidente, segurança e bactéria. Para o outro termo indutor, riscos biológicos, foram: sangue, bactéria, secreção e contaminação. As representações sociais acerca dos riscos de acidentes de trabalho demonstram que o conhecimento científico é difundido no grupo, reforçando o quanto o assunto faz parte do cotidiano de trabalho, uma vez que é propagado e compartilhado entre eles. Os participantes representam os riscos e os acidentes como algo distante de suas realidades laborais, ou seja, pensam que não correm o risco de se contaminarem ou de sofrerem outro tipo de acidente. **Conclusão:** Os resultados demonstraram, através das representações sociais, que os profissionais de enfermagem sabem da existência dos riscos para os acidentes de trabalho, como os riscos ocupacionais e os riscos biológicos, reconhecendo o perigo, mas com o outro, não consigo, o que sugere uma dificuldade em distinguir a própria insegurança.

Descritores: Saúde do Trabalhador; Acidentes de Trabalho; Enfermagem.



RESUMEN

Objetivo: Analizar las representaciones sociales de profesionales de enfermería sobre los riesgos de accidentes de trabajo. **Métodos:** Estudio cualitativo con eje teórico en la teoría de las representaciones sociales realizado con 70 profesionales de enfermería (enfermeros y técnicos) de un Hospital Regional del Municipio de Guanambi, Bahia, Brasil, en régimen de guardia nocturno en el periodo entre marzo y abril de 2017. Se utilizó como técnica para la recogida de datos la asociación libre de palabras y la entrevista en profundidad. Se analizaron las evocaciones a través del análisis de contenido. **Resultados:** Las palabras evocadas por los entrevistados con más significación y frecuencia para el término “inductor riesgos ocupacionales” fueron: accidente, seguridad y bacteria. Para el otro término “inductor riesgos biológicos” las palabras fueron sangre, bacteria, secreción y contaminación. Las representaciones sociales sobre los riesgos de accidentes de trabajo demuestran que el conocimiento científico está difundido en el grupo lo que refuerza cuánto el tema hace parte del cotidiano de trabajo una vez que es propagado y compartido entre ellos. Los participantes representan los riesgos y los accidentes como algo lejano de sus realidades laborales, o sea, piensan que no tienen riesgo de contaminación o de otro tipo de accidente. **Conclusión:** A través de las representaciones sociales los resultados demuestran que los profesionales de enfermería saben de los riesgos para los accidentes de trabajo como los riesgos ocupacionales y los biológicos reconociendo el peligro pero con el otro y no con uno mismo lo que sugiere una dificultad para distinguir la propia inseguridad.

Descriptor: Salud Laboral; Accidentes de Trabajo; Enfermería.

INTRODUCTION

Occupational accidents (OA) have become constant in the work environment of various workers, including health professionals, as these are exposed to many risks, especially biological ones⁽¹⁾. As a result of the increase in preventive practices and the mandatory use of personal protective equipment (PPE), death rates have been minimal^(2,3).

OA are defined as events; however, they are beyond being accidental or fortuitous. They are determined, predictable and preventable social phenomena. They occur in the practice of work activities that lead to potential damages to health^(4,5). In daily work, these accidents can be constant due to contact with sharp materials⁽⁶⁾.

Worldwide, 60% of nursing professionals, which correspond to 33% of hospital workforce, are affected by injuries or other types of occupational disorders⁽⁷⁾. In China, Japan and Taiwan, headache is the main occupational illness among nursing professionals, with rates ranging from 40.9% to 49.6% among the three countries⁽⁸⁾. In Brazil, most of nursing professionals' injuries are due to needlestick accidents (68.2%)⁽⁹⁾. In a study carried out in 2016 with nursing workers in a public hospital in the state of Mato Grosso, Brazil, the authors pointed out high rates (46.3%) of occupational accidents involving sharp materials among nursing professionals. Additionally, most professionals (63.5%) reported involvement in two accidents⁽¹⁰⁾.

In the night shift, OA and risks increase due to the exhausting routine and sleep and wakefulness problems, as reported in a study carried out in the United States of America in 2011 with night shift workers, specifically with truck drivers. The performance of any psychomotor activity at night increases the risk of accidents and injuries due to the lack of compensation for sleepiness at night and because the high homeostatic sleep pressure interacts with the peak of the circadian sleep propensity, which leads to a critical vulnerability in the area of performance of work activities⁽¹¹⁾.

Health professionals are subject to many risks that are determinants of OA due to the contamination with and manipulation of materials that contain microorganisms. Therefore, it is important that these workers have knowledge about the diseases and injuries to which they are subjected within their workplace as they may cause harms to their health⁽⁴⁾.

According to article 19 of Law No. 8.213, of July 24, 1991, there are two types of occupational accidents: one that happens during work and one that may happen during commuting. Both types of AO can lead to death or loss, potential accident-related trauma, and bodily injury, which causes a reduction in the ability to perform daily activities. Therefore, it is the responsibility of the hospital to offer personal protective equipment (PPE) to professionals according to the risks to which they are exposed⁽¹²⁾.

Considering that nursing professionals are the members of the hospital's multidisciplinary team most exposed to biological materials, due to the manipulation of sharp objects and contaminated materials, they may acquire some type of infectious disease, such as the human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV)⁽⁶⁾.

The reporting of cases occupational accidents is important to make appropriate preventive decisions and take action. However, there is a high underreporting rate because some professionals are not aware of the risks involved, due to lack of information about its importance or even due to fear of dismissal, which leads to non-reporting⁽⁶⁾.

Therefore, the Ministry of Labor, which was afraid of the set of issues that link workers' health and occupational diseases to biological risks, created the Regulatory Standard 06 on June 8, 1978, the Ordinance No. 3.214 and the Regulatory Standard 32 on November 11, 2005, and the Ordinance No. 485^(13,14).

The theory of social representations (TSR) is adequate for cross-referring this object as it considers the influence of communication on representations, since they are formed by the exchange, diffusion and sharing of the knowledge within the group, which, in turn, takes into account the social influence for the constructions of meanings of phenomena in the daily life⁽¹⁵⁾.

Health services in general offer risks of contamination as they are low, medium or high complexity settings where care is provided to all types of people; additionally, they are permeated by a variety of factors that contribute to and increase the risk of accidents involving biological materials. Biosecurity measures, such as the use of PPE, should be adopted, since biological risks arise from the complexity of health services, such as the type of care offered, the work environment and the materials one may come in contact with⁽¹⁶⁾.

A randomized study carried out in three regions of the Netherlands in 2014 with construction workers provides recommendations on the prevention of accidents that corroborate such information. The authors consider that in order to increase compliance with safety procedures, employers and workers need to select, implement and monitor safety measures. To facilitate this behavioral change, one must encourage awareness of knowledge and behavior change techniques. In addition, training, educational actions, and discussion of everyday cases and issues can improve the occupational safety and health of the workforce⁽¹⁷⁾.

Although the use of PPE is mandatory to reduce risks, nursing professionals present difficulties and are reluctant to using them⁽⁶⁾. Therefore, this study is justified by the possibility of revealing, through social representations, the knowledge of nursing professionals about the occupational risks and thus reveal the importance they give to the use of these equipments during their work activities. This study is also relevant for Public Health because it addresses such a public health problem. In addition, with the help of the TSR, there is the possibility to reflect on how nursing professionals understand occupational accidents in daily work and thus help in the promotion of occupational health through strategies such as health education.

Given the exposure to and possibility of occupational accidents, in addition to the risk of contamination with microorganisms inside the health center and the difficulties in working at night, the following research question was formulated: How does the night shift nursing team represent the risks of occupational accidents in the performance of work activities? In order to guide the answer to this question, this study aimed to analyze nursing professionals' social representations of occupational accident risks.

METHODS

A qualitative study⁽¹⁸⁾ was carried out based on the theory of social representations⁽¹⁵⁾, which is defined as a philosophical demonstration that consists of the formation of an earlier perception of the reality of content in thought. This study has a direct relation with the communicative influences that are created and configured at any moment, resulting from the balance between the processes of formation of representations, the relation of the product to communication and the social influence that acts in the construction of meanings⁽¹⁵⁾.

The research was carried out from March to April 2017 at the Regional Hospital of the Municipality of Guanambi, Bahia, Brazil, which is the only large hospital in the microregion where the city is located. The city is home to the health microregion and reference to other 22 municipalities.

Nursing professionals (nursing technicians and nurses) who worked in the Hospitalization, Emergency, Intensive Care Unit (ICU) and Operating Room (OR) sectors were invited to participate in the study after being introduced to the research objectives. The following inclusion criteria were adopted: professionals working the night shift only, since these professionals work in a different biological rhythm, which can affect their biopsychosocial health⁽¹¹⁾; professionals who had passed the three-month probation period, and professionals who were not on vacation or leave. Exclusion criteria were: professionals who were unavailable at work during data collection.

The study was carried out in two phases. In the first phase, the sample consisted of 70 nursing professionals who volunteered to be interviewed. In the second phase, only 23 professionals were interested in participating. The others claimed lack of time.

Two data collection instruments were used: the first instrument used in the first phase was the word association test (WAT)⁽¹⁹⁾. This test initially contained variables related to data on the identification of the participants (job, sex, age, period of time since graduation, period of time on the job, use of personal protective equipment, occupational accidents). The application of the WAT naturally occurs through the free and fast association of the inducing words (stimuli) said by the researcher, causing the participant to say other words (responses) or induced words⁽¹⁹⁾. The inducing words used to make the participants associate were: occupational risks, biological risks. Such stimuli produced, on the part of the interviewees, words and/or expressions that came to their mind at the time they were questioned.

The in-depth interview⁽²⁰⁾ was the second data collection instrument, which consisted of an open guiding question: "Tell me what these words (occupational risks, biological risks) represent to your daily work".

The information collection took place individually in small rooms in the hospital sectors. The findings were recorded and transcribed verbatim by the researcher. The application of WAT lasted on average ten minutes for each participant, while the interviews lasted on average 30 to 40 minutes. Due to professionals' lack of time, there was no repetition of interviews.

The collected data were submitted to content analysis⁽²¹⁾ of the words evoked by target constellation and the semantic content of the statements resulting from the interviews, which were then triangulated and cross-referenced with the evocations

and then grouped based on semantic similarities to avoid redundancies and make their frequency more significant. Finally, we used condensed approximate semantics to analyze the target constellation graph of words evoked by each stimulus⁽²¹⁾ with the aid of 2010 Microsoft Power Point, in which words with higher frequencies were organized in the center of the target (inner smaller circles) and those with lower frequencies, but also important for the representation of the group, were included in the external areas of the graph (outer bigger circles).

The research complied with the ethical principles of Resolution 466/2012⁽²²⁾ and was approved under Protocol 2012036/2017 of the Guanambi Higher Education Center (*Centro de Educação Superior de Guanambi – CESG*). All the participants signed the Free Informed Consent Form. In order to maintain the anonymity of the participants, they received code names: for nursing technicians, the TEC abbreviation was followed by a number (example TEC 01), and nurses were named using NUR and a number (example NUR 01).

RESULTS AND DISCUSSION

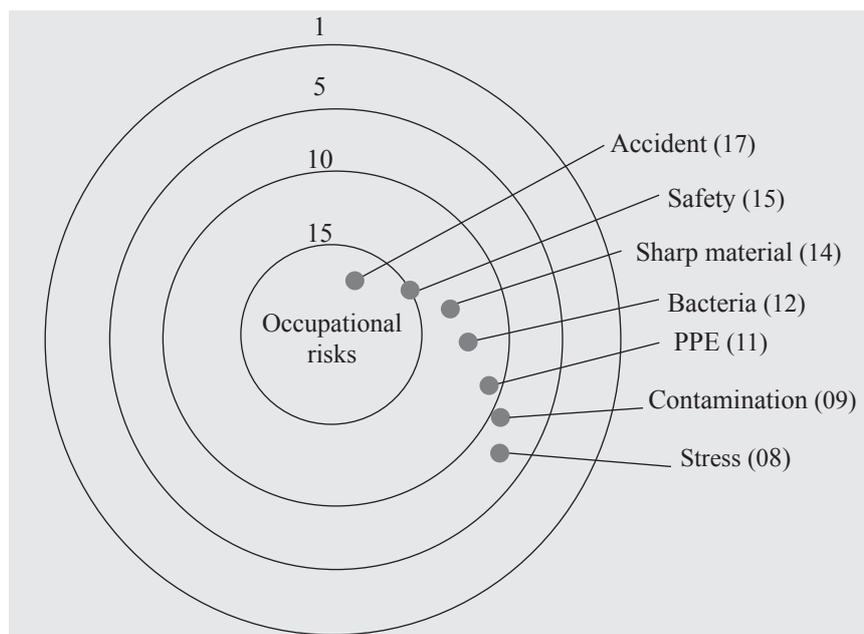
The participants' identification data and the data from the WAT triangulated with the statements from the in-depth interview will be presented below.

The group of participants consisted of 30 nurses and 40 nursing technicians who work in different sectors of the hospital. There were 48 female professionals and 22 male professionals whose age ranged 20 years to 60 years. As for the time since graduation, five professionals reported three months to one year; 17 reported one year to five years; 21 reported five years to ten years; and 27 reported more than ten years. With regard to the period of time on the job, 15 professionals have worked from three months to one year, 12 professionals have worked from one to five years, 20 have worked from five to ten years, and 23 have worked for over ten years. Of the interviewees, 48 reported they used PPE in all procedures and 22 did not use it. In addition, 30 professionals had already been involved in an accident at work and 40 said they had never experienced an accident.

The data from the WAT, which were evoked by the inductive stimuli, allowed to apprehend the social representations of the professionals interviewed. First, we started by listing the words evoked for each inductive stimulus. Then, the words were placed in groups by classification and incorporated into identical words or words with similar semantic content. After that, the procedure resulted in a corpus of 548 words, 141 of which were different.

Then, the words were ordered according to the number of repetitions, that is, the frequency for each stimulus, as shown in Figures 1 and 2. It should be noted that the cut-off point for the frequency of the most evoked words, i.e., the words with the highest occurrence in the group, was 5. This cut-off value derives from issues inherent to social representations which are processed within a group and thus characterize what is common and, therefore, the group belongingness. A number smaller than five would indicate the individual impressions alone, which is not the focus of the theory^(19,23).

Figure 1 shows the evocations with the highest frequencies for the stimulus occupational risks associated by nursing professionals.



Source: Research data. PPE: personal protective equipment.

Figure 1 - Target constellation of attributes of stimulus 1: "occupational risks". Guanambi, Bahia, Brazil, 2017.

The word accidents was probably reported due to contact with sharp materials, which consequently represents sources of contamination with bacteria or another type of microorganism. The stimuli was also associated with safety using PPE. These evocations make up the network of meanings, thus shaping social representations. In addition, the representation of occupational risk related to stress contributed to understanding nuances that reveal group belongingness as a double journey, work overload and night work. These words are shown and explained in the statements below:

“There is not always time to use PPE. They are important, but we are always in a hurry in the emergency room and there is not enough time to think about contamination, bacteria, viroses.” (TEC 07).

“We worry about the lack of materials, because it can harm us and we can get some disease. Sometimes PPE is missing and they are important to our safety, aren't they?!” (NUR 14).

“To get a better wage, we need more jobs, you know?! We need to supplement our income. Sometimes we try to stay active, but we rush so much that sometimes we do not even remember to use it. We also get annoyed with some things that happen, patient talking, physicians who do not do their job.” (NUR 21).

“Working at night is different because we are already tired of working in the other service. And we still have to stay awake, we do not sleep because we have to watch the patients and give the medicine overnight and check if there are any interferences. Every day I feel stressed at home, or even here, with people calling all the time.” (TEC 17).

The word safety, which was evoked by professionals at a high frequency, reveals how much knowledge they have about the danger that occupational risks can cause during their work process. It is known that the risk of illness occurs due to the number of factors related to the work process. However, PPE should be used in all procedures that offer risks of accidents in order to minimize them⁽²⁴⁾.

Occupational risk was strongly represented by the word accident in the present study. Studies show that, during the performance of work activities, nursing professionals are exposed to different risks that can lead to accidents. It should be noted that accidents can occur according to the duration of the exposure to the risk or the way the professional performs a certain activity, and whether or not he or she uses adequate equipment^(24,25).

A study on practices to encourage safety culture among professionals pointed out that safe care, without risks or injuries to the professional, i.e., the professional's safety should be the purpose of the nursing team since care requires updating of knowledge and techniques, skill and experience, and scientific and technical knowledge⁽²⁶⁾.

The hospital environment, one of the nurses' workplaces, offers many services to different population groups and therefore is considered a risky area as there may be several accidents caused by biological, chemical, physical or psychosocial agents or even due to the way in which work is organized⁽⁴⁾.

A study carried out in 2015 on primary care nurses' social representations of biological risks demonstrated that they represented the risks based on the experiences involving occupational accidents, especially in the accident-material and accident-exposure associations. Therefore, the participants demonstrated fear and concern about exposure to blood and material contaminated with microorganisms⁽²⁷⁾.

Contamination in a hospital area is characterized by direct contact with potentially contaminated fluids when they come into contact with the mucosa or skin of the professional⁽²⁸⁾. Thus, when some type of accident occurs, it causes the professionals to have a mixture of negative sensations and represent feelings like fear, death and worry⁽²⁸⁾.

In a study carried out in a public hospital in Ceará, Brazil, with nursing professionals who got involved in occupational accidents with biological risks, the authors assessed the professionals' feelings in such situations and perceived representations of feelings such as fear, despair, anxiety and worry about getting some disease⁽²⁹⁾.

The social representations processed in the human cognition system reflect the individual experience in the face of everyday situations, which can be the same as those experienced by other people. Therefore, they shape the group belongingness. Belongingness is the feeling of belonging to a group with common characteristics that lead to the perception of the meanings given to the phenomena and the behaviors adopted and represented⁽³⁰⁾.

Stress, a word evoked by the professionals participating in the present study, is considered an occupational disease. During the workday there may be stressful moments due to work overload, change of shift or night work, noises and job change⁽³¹⁾.

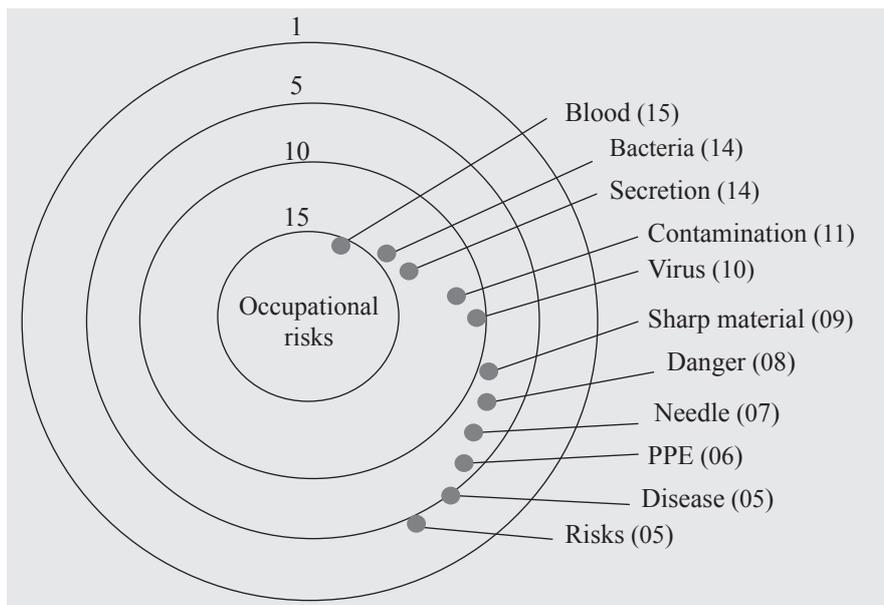
Another study that aimed to reflect on nurses' social representations of the service and its relationship to stress at a public hospital in Natal, Rio Grande do Norte, Brazil, found in the professionals' statements the association with the work overload, demotivation and the precariousness of interpersonal relationships⁽³²⁾. On the other hand, another study carried out with nursing professionals to assess stress and coping strategies found that the majority of the professionals worked under high psychological stress and had little control in the work they performed, which interfered in their relationship with the community as low social support was the greatest consequence⁽³³⁾.

Thus, social representations, when assessed at a social level, integrate a network of meanings produced unconsciously in which the experiences with the risks in the work environment shape the representations. However, even though individuals

belonging to the same group may be quite distinct in their personalities, they approach each other in regard to the basic structure of their common social experience, their thinking and their action⁽³⁴⁾.

Thus, representations are understood as a specific way of understanding and communicating what is common sense in society and in the group of belonging whose objective is anchored in individual and the collective abstractions of certain phenomenon based on senses, memory, meanings, behaviors and perceptions that they reproduce in their daily life in a significant way⁽¹⁵⁾.

In the present study carried out with night shift nursing professionals, specifically, representations of occupational risks are reproduced due to contact with injuries that arise from specific factors in the environment and daily work, which put the health of these professionals at risk, and from the meanings they give to them. Some of these factors are: period of time on the job, training and profession, and the stressors of the service. The biological risks stimulus was represented by the evocations (shown in Figure 02) blood, bacteria, secretion, and viruses that cause contamination through contact with sharp materials, thus generating danger, because even if PPE are used, professionals may suffer an accident during the performance of some procedure.



Source: Research data; PPE: personal protective equipment.

Figure 2 - Target constellation of attributes of stimulus 2: “biological risks”. Guanambi, Bahia, Brazil, 2017.

The statements obtained in the in-depth interviews that are in line with and explain the evocations are the following:

“[] It is not necessary to use PPE in all procedures, because it is not always that we are in contact with a patient who represents a risk [].” (TEC 10)

“[] I have never suffered accidents until today, I have never gotten a disease at work, I take great care when I approach the patient, so I do not always use PPE [].” (TEC 13)

“[] I have been working in the service for ten years, many people have become infected with viruses and bacteria and have had accidents involving blood and sputum of a patient, thank God I have never had any accident. I take care not to get myself pierced with needles or cut myself with blades [].” (NUR 07)

“[] There is always the danger of getting sick, of getting diseases, infections, and of being stressed because of the time we have to perform the procedures [...].” (NUR 01)

“[] I had a colleague who got infected with a sharp material that contained blood and got HIV because she did not use PPE. So I always try to use it [].” (TEC 15)

The biological risks that are present during the working day of these professionals can cause some occupational diseases, mainly infectious diseases. The professionals interviewed in the present study demonstrate knowing them, but they do not know the dimension of the danger considering the problems with the use of PPE.

The most significant word represented by professionals for the “biological risks” stimulus was blood, since it is the fluid with which professionals have greater contact within the hospital area. Because it is a biological agent, blood poses a risk to the health of the professional, such as acquiring disease with human immunodeficiency virus (HIV), hepatitis B (HBV) and hepatitis C (HCV), as transmission of these diseases occurs through exposure of the skin or mucous membranes to infected blood⁽⁶⁾.

The low evocation of the word PPE is worrying because it is a barrier that the institutions must provide free of charge to prevent professionals from having accidents. Professionals omit the use of PPE for self-confidence or for carrying out the procedures in haste. Thus, SR do not interfere with these people's knowledge or concepts; they arise from a system of thoughts that elaborate values and notions about something which are revealed in practices and behaviors⁽³⁴⁾.

Previous studies have shown that one of the causes of exposure to biological items is the accident and the possible illness. This is due to resistance to use standard precautions for prevention^(35,36). However, the accident with biological materials does not motivate the mandatory use of PPE, but professionals are aware that the use of precautions reduces the risk of accidents and, consequently, contamination^(35,36).

The use of PPE must comply with the requirements established for the procedures performed to promote safety and reduce the risks involved so as not to interfere in the correct performance of the procedure. Lack of use of PPE can result in harm to all people involved, such as occupational diseases, emotional and psychological disorders, and problems in interpersonal, family, and work relationships⁽³⁷⁾.

SR in the field of health originate from the opinions exchanged and shared among professionals, from the production of collective behaviors and social interactions, from the way they carry out practices for the promotion of health and the meanings they give to the health-disease process⁽¹⁹⁾. Thus, the nursing professionals interviewed in the present research demonstrated, through social representations, how they face occupational problems that cause injuries, such as contamination with biological material, and how they are prevented⁽³⁸⁾.

The word risk, evoked by professionals in the WAT in the present study, appears as a meaning of a group of different causes of accidents, such as death, health harms or injuries, to which they are exposed within the hospital area. These social representations reveal the level of social evaluation (of the group) about all the meaning involved in the risks, which determines the social condition in the daily work, a condition that originates, characterizes and justifies concepts and thoughts based on the rules that they adopt for themselves and for the group in which they are inserted^(15,34).

In a study carried out in a medium-sized private hospital in the state of Piauí, Brazil, to assess nursing technicians' social representations of accidents with sharp materials, the participants revealed unconsciously that it is the behaviors adopted daily by professionals which conditions accidents and that the fear of getting infected with some microorganism, such as HIV, leads them to think before performing any procedure. Yet, this is not enough to avoid exposure, which reveals fear and worry⁽³⁹⁾.

It should be noted that nursing professionals are the most representative professions within the hospital area when compared with other professions^(35,38). This information can also be corroborated by the study carried out at a philanthropic tertiary care hospital in the countryside of São Paulo, Brazil, in which professionals pointed out that it is in the hospital environment, especially in the hospitalization sectors, that they have greater exposure to contaminated biological material⁽⁴⁰⁾. Other studies have shown that nursing professionals are the ones with the highest degree of life threatening at work, since they focus their attention on improving health and supporting patients in the inpatient care sectors, thus forgetting their individual care during exposure to risks related to their practice^(6,27,35,38).

The environment in which health professionals are inserted leaves them exposed to occupational risks, especially biological risks, and failure to use PPE leaves them vulnerable to contamination with biological materials. Therefore, health service managers should promote spaces for health education activities with professionals in order to avoid or minimize inappropriate, routine and vicious practices and to increase the use of personal protective equipment^(25,39).

In the context of workers' health, night shift nursing professionals' SR of the risks of occupational accidents lead to think that encouraging prevention and counselling/training programs is essential for the prevention of occupational diseases, especially those resulting from accidents involving biological materials.

One limitation of the present study was the number of professionals. The study was carried out in a large public hospital of a health microregion in Northeastern Brazil, which does not allow generalizations, since the group has people with profiles and living conditions that differ from other regions, which vary according to culture and place. However, in spite of this limitation, it is important to note that the representations are in line with those presented in studies carried out in other regions and reveal the singularities revealed in the representations, such as self-confidence and the inability to recognize the insecurity for the practice.

FINAL CONSIDERATIONS

Occupational and biological risks, which were evident in the social representations of nursing professionals, are related to the risk factors for occupational accidents. Thus, the results showed, based on the apprehension of and the reflections on the social representations, that the nursing team identifies with risk factors that often emerged during the performance of daily activities in the hospital.

The results showed that nurses know about the existence of risks of occupational accidents, such as occupational risks and biological risks, thus recognizing the danger to other people and not to themselves, which suggests a difficulty in distinguishing their own insecurity.

The representations of the biological risks were reproduced due to the contact with the injuries that arise from specific factors in the work environment and in daily work that put the health of these professionals at risk, thus reflecting in the meanings that make up the representations of the object described herein.

Based on this learned knowledge, health professionals, particularly those who make up the nursing team, can reflect on the SR elaborated and propose ways to developing preventive and intervention strategies, such as permanent professional education activities to reduce occupational accidents through the minimization of occupational and biological risks considering the need to rethink biosafety in the hospital environment.

CONFLICTS OF INTEREST

There are no conflicts of interest in this study.

REFERENCES

1. Neves ZCP, Tiplle AFV, Mendonça KM, Souza ACS, Pereira MS. Legislações e recomendações brasileiras relacionadas à saúde e segurança ocupacional dos trabalhadores da saúde. *Rev Eletrônica Enferm.* 2017;19:a01.
2. Contreras GT, Torrealba BJ, Salinas MF. Enfermedades respiratorias laborales en Chile. Ley 16.744. *Rev Chil Enferm Respir.* 2014;30(1):27-34.
3. Miranda FMA, Cruz EDA, Félix JCV, Kalinke LP, Mantovani MF, Sarquis LMM. Perfil dos trabalhadores brasileiros vítimas de acidente de trabalho com fluidos biológicos. *Rev Bras Enferm.* 2017;70(5):1117-24.
4. Bezerra AMF, Bezerra KKS, Bezerra WKT, Athayde ACR, Vieira AL. Riscos ocupacionais e acidentes de trabalho em profissionais de enfermagem no ambiente hospitalar. *Rev Bras Educ Saúde.* 2015;5(2):1-7.
5. Neitzel RL, Long RN, Sun K, Sayler S, Von Thaden TL. Injury risk and noise exposure in firefighter training operations. *Ann Occup Hyg.* 2016;60(4):405-20.
6. Oliveira EC, Ponte MAC, Dias MAS, Silva ASR, Torres ARA, Ferreira VES. Análise epidemiológica de acidentes de trabalho com exposição a material biológico entre profissionais de enfermagem. *Sanare (Sobral, Online).* 2015 [accessed on 2016 Dec 2];14(01):27-32. Available from: <https://sanare.emnuvens.com.br/sanare/article/view/603/320>
7. Tinubu BMS, Mbada CE, Oyeyemi AL, Fabunmi AA. Work-related musculoskeletal disorders among nurses in Ibadan, South-west Nigeria: a cross-sectional survey. *BMC Musculoskelet Disord.* 2016;11:12.
8. Wang Y, Xie J, Fang F, Wu S, Wang H, Zhang X, et al. The prevalence of primary headache disorders and their associated factors among nursing staff in North China. *J Headache Pain.* 2015;16(4):1-7.
9. Silva FFA, Farias HNC, Costa RHS, Souza NL, Carvalho JBL, Silva RAS. Riscos de acidentes com materiais perfurocortantes no setor de urgência de um hospital público. *J Res Fundam Care Online.* 2016;8(4):5074-9.
10. Carvalho DC, Rocha JC, Gimenes MCA, Santos EC, Valim MD. Acidentes de trabalho com material biológico na equipe de enfermagem de um hospital do Centro-Oeste brasileiro. *Esc Anna Nery Rev Enferm.* 2018;22(1):e20170140.
11. Lee ML, Howard ME, Horrey WJ, Liang Y, Anderson C, Shreeve MS. High risk of near-crash driving events following night-shift work. *PNAS.* 2016; 113(1):176-81.
12. Brasil. Lei Nº 8.213, de 24 de julho de 1991. Dispõe sobre Acidente do trabalho é o que ocorre pelo exercício do trabalho a serviço de empresa ou de empregador doméstico ou pelo exercício do trabalho dos segurados referidos [accessed on 2016 Dec 2]. Available from: http://www.planalto.gov.br/ccivil_03/leis/l8213compilado.htm
13. Brasil. Ministério do Trabalho. Portaria nº 3.214, de 08 de junho de 1978. Dispõe sobre NR 6-Equipamento de Proteção Individual – EPI [accessed on 2016 Dec 2]. Available from: <http://www.camara.gov.br/sileg/integras/839945.pdf>
14. Brasil. Ministério do Trabalho. Portaria n.º 485, de 11 de novembro de 2005. Dispõe sobre NR 32 - Segurança e Saúde no Trabalho em Serviços de Saúde [accessed on 2016 Dec 2]. Available from: http://www.trtsp.jus.br/geral/tribunal2/ORGaos/MTE/Portaria/P485_05.html
15. Moscovici S. Representações Sociais: Investigações em Psicologia Social. Petrópolis: Vozes; 2012.
16. Lopes Joaquim F, Cavalcanti Valente GS. A relação da biossegurança com o custo-efetividade nas hospitalizações: nexos com a educação permanente. *Enferm Glob.* 2013;30(1):355-69.

17. Van der Molen HF, den Herder A, Warning J, Frings-Dresen MHW. National evaluation of strategies to reduce safety violations for working from heights in construction companies: results from a randomized controlled trial. *BMC Public Health*. 2016; 16(19):1-8.
18. Minayo MCS. *O desafio do conhecimento*. 13ª ed. São Paulo: Editora Hucitec; 2013.
19. Coutinho MPL. *Representações sociais: abordagem interdisciplinar*. Paraíba: Ed Universitária/UFPB; 2003.
20. Gaskell G. Entrevistas individuais e grupais. In: Bauer MW, Gaskell G, organizadores. *Pesquisa qualitativa com texto, imagem e som: um manual prático*. Petrópolis: Vozes; 2002. p. 64-89.
21. Bardin L. *Análise de conteúdo*. Lisboa: Edições 70; 2010.
22. Conselho Nacional de Saúde (BR). Resolução n o 466, de 12 de dezembro de 2012 [accessed on 2016 Dec 2]. Available from: <http://conselho.saude.gov.br/resolucoes/2012/reso466.pdf>
23. Jovchelovitch S. Vivendo a vida com os outros: intersubjetividade, espaço público e representações sociais. In: Guareschi PA, Jovchelovitch S. *Textos em representações sociais*. Petrópolis: Vozes; 2012. p. 63-88.
24. Martins JT, Bobroff MCC, Andrade AN, Menezes GDO. Equipe de enfermagem de emergência: riscos ocupacionais e medidas de autoproteção. *Rev Enferm UERJ*. 2014;22(3):334-40.
25. Facchin LT, Gir E, Pazin-Filho A, Hayashida M, Canini SRMS. under-reporting of accidents involving biological material by nursing professionals at a brazilian emergency hospital. *Int J Occup Saf Ergon*. 2013;19(4):623-9.
26. Barros AA, Oliveira RM, Pinheiro AC, Leitão IMTA, Vale AP, Silva LMS. Práticas de incentivo à cultura de segurança por lideranças de enfermagem segundo enfermeiros assistenciais. *Rev Enferm UFPE Online*. 2014;8(12):4330-6.
27. Sousa AFL, Queiroz AAFLN, Oliveira LB, Moura MEB, Batista OMA, Andrade D. Representações sociais da Enfermagem sobre biossegurança: saúde ocupacional e o cuidar preventivista. *Rev Bras Enferm*. 2016;69(5):864-71.
28. Souza FT, García MC, Rangel PPS, Rocha PK. Percepção da enfermagem sobre os fatores de risco que envolvem a segurança do paciente pediátrico. *Rev Enferm UFSM*. 2014;4(1):152-62.
29. Araújo TM, Caetano JÁ, Barros LM, Lima ACF, Costa RM, Monteiro VA. Acidentes de trabalho com exposição a material biológico entre os profissionais de Enfermagem. *Referência*. 2012;7(3):7-14.
30. Wagner W. Descrição, explicação e método na pesquisa das representações sociais. In: Guareschi PA, Jovchelovitch S. *Textos em representações sociais*. Petrópolis: Vozes; 2012. p. 149-86.
31. Oliveira RJ, Cunha T. Estresse do profissional de saúde no ambiente de trabalho: causas e consequências. *Cad Saúde Desenv*. 2014;3(2):78-93.
32. Oliveira JDS, Alchieri JC, Pessoa JM Júnior, Miranda FAN, Almeida MG. Representações sociais de enfermeiros sobre o estresse laboral em um serviço de urgência. *Rev Esc Enferm USP*. 2013;47(4):984-9.
33. Teixeira CAB, Gherardi-Donato ECS, Pereira SS, Cardoso L, Reisdorfer E. Estresse ocupacional e estratégias de enfrentamento entre profissionais de enfermagem em ambiente hospitalar. *Enferm Glob*. 2016; 44(3):299-309.
34. Guareschi PA, Jovchelovitch S. *Textos em representações sociais*. Petrópolis: Vozes; 2012.
35. Ruas EFG, Santos LS, Barbosa DA, Belasco AGS, Bettencourt ARC. Acidentes ocupacionais com materiais perfuro cortantes em hospitais de Montes Claros-MG. *REME Rev Min Enferm*. 2012;16(3):437-43.
36. Moraes KKO, Almeida LF, Silva LPM, Santos MLGF, Silva ES, Jesus CS. Exposição da equipe de enfermagem aos riscos biológicos em unidade de terapia intensiva: revisão integrativa. *Rev Inova Saúde*. 2016;5(2):163-84.
37. Ferreira LA, Peixoto CA, Paiva L, Silva QCG, Rezende MP, Barbosa MH. Adesão às precauções padrão em um hospital de ensino. *Rev Bras Enferm*. 2017;70(1):96-103.
38. Santos JLG, Vieira M, Assuiti LFC, Gomes D, Meirelles BHS, Santos SMA. Risco e vulnerabilidade nas práticas dos profissionais de saúde. *Rev Gaúch Enferm*. 2012;33(2):205-12.
39. Lubenow JAM, Moura MEB, Nunes BMVT, Figueiredo MLF, Sales LC. Representações sociais dos acidentes com materiais perfurocortantes. *Rev Latinoam Enferm*. 2012;20(6):1176-1185.
40. Negrinho NBS, Malaguti-Toffano SE, Reis RK, Pereira FMV, Gir E. Fatores associados à exposição ocupacional com material biológico entre profissionais de enfermagem. *Rev Bras Enferm*. 2017;70(1):133-8.

Mailing address:

Pablo Luiz Santos Couto
Centro de Ensino Superior de Guanambi
Av. Pedro Felipe Duarte, 4911
Bairro: São Sebastião
CEP: 46430-000 - Guanambi - BA - Brasil
E-mail: pabloluizsc@hotmail.com