

Adherence to standard precautions in a teaching hospital

Adesão às precauções padrão em um hospital de ensino
Adhesión a precauciones estándar en un hospital de enseñanza

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How to cite this article:

Ferreira LA, Peixoto CA, Paiva L, Silva QCG, Rezende MP, Barbosa MH. Adherence to standard precautions in a teaching hospital. Rev. Bras. Enferm. [Internet]. 2017;70(1):90-7. DOI: <http://dx.doi.org/10.1590/0034-7167-2016-0138>

Submission: 04-13-2016

Approval: 09-15-2016

ABSTRACT

Objective: analyze related factors and the level of adherence to standard precautions of nursing professionals from the clinical medical division of a teaching hospital. **Method:** a quantitative, cross-sectional, analytical study was conducted with 54 nursing professionals using the Psychometric Scale of Adherence to Standard Precautions, translated and validated to Brazilian Portuguese. **Results:** the global score of adherence was intermediate (4.41); no statistically significant correlation was observed between adherence and professional category ($p=0.404$) and length of professional practice ($p=0.612$). A correlation was observed between 'Washes hands after removing disposable gloves' ($p=0.026$) and professionals with nursing practice above 10 years. **Conclusion:** adherence to standard precautions by the nursing team was intermediate, with no statistically significant difference in relation to the professional category and length of professional practice.

Descriptors: Universal Precautions; Nursing Team; Exposure to Biological Agents; Occupational Risks; Personal Protective Equipment.

RESUMO

Objetivo: verificar os fatores associados e o nível de adesão às precauções padrão dos profissionais de enfermagem do setor de clínica médica de um hospital de ensino. **Método:** estudo quantitativo, transversal, analítico, realizado com 54 profissionais de enfermagem, por meio da aplicação da Escala Psicométrica de Adesão às Precauções Padrão, traduzida e validada para o português do Brasil. **Resultados:** o escore global de adesão foi intermediário (4,41); não houve correlação estatisticamente significativa entre adesão e categoria profissional ($p=0,404$) e com o tempo de exercício profissional ($p=0,612$). Verificou-se correlação do item Lava as mãos após a retirada de luvas descartáveis ($p=0,026$) com profissionais com tempo de trabalho, na área, superior a 10 anos. **Conclusão:** a adesão às medidas de precaução padrão pela equipe de enfermagem foi intermediária, não tendo diferença estatisticamente significativa em relação à categoria profissional e ao tempo de exercício profissional.

Descritores: Precauções Universais; Equipe de Enfermagem; Exposição a Agentes Biológicos; Riscos Ocupacionais; Equipamento de Proteção Individual.

RESUMEN

Objetivo: verificar los factores asociados y el nivel de adhesión a precauciones estándar en profesionales de enfermería del sector de clínica médica de un hospital de enseñanza. **Método:** estudio cuantitativo, transversal, analítico, realizado con 54 profesionales de enfermería, a través de la aplicación de la Escala Psicométrica de Adhesión a las Precauciones Estándar, traducida y validada al portugués brasileño. **Resultados:** el puntaje global de adhesión fue intermedio (4,41); no hubo correlación estadísticamente significativa entre adhesión y categoría profesional ($p=0,404$) ni con tiempo de ejercicio profesional ($p=0,612$). Se verificó correlación del ítem Lava sus manos luego de quitarse los guantes descartables ($p=0,026$) en profesionales con tiempo de

actuación en el área mayor a 10 años. **Conclusión:** la adhesión a medidas de precaución estándar del equipo de enfermería fue intermedia, sin diferencia estadísticamente significativa respecto de categoría profesional y tiempo de actuación profesional.

Descriptores: Precauciones Universales; Grupo de Enfermería; Exposición a Agentes Biológicos; Riesgos Laborales; Equipo de Protección Personal.

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INTRODUCTION

Health professionals are constantly exposed to risks in their workplace environment, which may have a direct impact on health conditions. Among these professionals, nursing team members are subjected to high-level occupational risks, especially exposure to biological materials. This is related to the direct and indirect support they provide to patients and types and frequency of procedures they perform, exposing them microorganisms present in blood and organic fluids⁽¹⁻²⁾.

Regarding biological risks, infections of higher epidemiological relevance are those caused by the human immunodeficiency virus (HIV) – which causes the acquired immune deficiency syndrome (AIDS) – and hepatitis B (HBV) and C (HCV)⁽³⁾. Estimates indicate that around 400 million people, or 5.7% of the world population, have HBV and 180 million have HCV. In addition, by 2012, HIV had infected about 40 million people⁽⁴⁾.

When the prevalence of AIDS and hepatitis increases, the risk of occupational contamination consequently increases as well. According to the Centers for Disease Control and Prevention (CDC), the risk of occupational contamination by HIV is 0.3%, by HBV 6% to 30%, and by HCV 0.5% to 2%⁽²⁾.

Since the discovery of HIV, occupational exposure resulting from accidents with perforating/cutting materials and body fluids has become a concern among health professionals⁽⁵⁾. In an attempt to minimize the risk of occupational infection from biological material and healthcare-associated infections, systems of epidemiological surveillance were created in most hospitals, especially after decree no. 196, of 1983, which set workplace safety standards and created a Hospital Infection Control Commission in all Brazilian hospitals⁽⁶⁾.

In 1987, the CDC edited the Guidelines for Isolation Precaution, whose recommendations were initially called Universal Precautions and, after a revision in 1996, were renamed as Standard Precautions (SPs)⁽⁷⁾. Besides these measures, regulatory standards were also created, forcing private and public institutions to provide their employees with personal protective equipment (PPE) and to implement a program for occupational health control; in Brazil, NR32^(1,4,6) is an important regulation in this field.

Standard precautions are a number of measures that should be applied in the provision of health care to hospitalized patients, regardless of their presumable state of infection, and while handling contaminated equipment and materials or in case of suspected contamination⁽⁷⁾. They should be observed in the presence of any risk of contact with blood, body fluids, secretions and excretions (except for sweat), solution of continuity of the skin, and mucosae^(5,8). They include the use of PPE – gloves, aprons, masks and goggles; hand washing before and after the contact with patients and body fluids, and before and after wearing/removing gloves;

and care with perforating and cutting materials⁽⁹⁾.

Although these SPs are already foreseen in health services, accidents have not been completely eliminated, indicating it is still a serious problem among health professionals. However, adherence is dependent on PPE provision and availability by institutions, and knowledge and attitude of professionals⁽⁵⁾. Thus, knowing the level of adherence to SPs of health is essential for health services, so that educational strategies can be developed and implemented to ensure workplace safety and reduction of occupational diseases⁽¹⁰⁾.

Given the considerations above, the following questions emerged: What is the level of adherence of the nursing staff from the clinical medical division of a teaching hospital to SP recommendations? Does the length of professional practice influence adherence to SPs? Does adherence to SPs have any relation to the professional category?

OBJECTIVE

Analyze the level of adherence to SPs of nursing professionals from the clinical medical division of a teaching hospital and describe the relationship between level of adherence and professional category and length of professional practice.

METHOD

Ethical aspects

The study project was approved by the Research Ethics Committee of the Federal University of Triângulo Mineiro in February 2015, according to the recommendations of Resolution no. 466/12 of the National Health Council. Data collection was conducted after the participants signed an informed consent form, protecting participant anonymity.

Study design, site and period

This is a quantitative, cross-sectional, analytical study conducted in the clinical medical division of a large teaching hospital that provides services of high complexity in the region of Triângulo Mineiro, Minas Gerais, Brazil, from May to July 2015.

Study population, inclusion and exclusion criteria

The study population consisted of all members of the nursing staff (nurses, nursing technicians and nursing aides) of this division (N = 62). The inclusion criteria adopted were: the participant had to be a nurse, a nursing technician or a nursing aide; had to work in the selected division during the data collection period, and had to agree to participate in the study. The study excluded professionals who were not present in the division during the data collection period, due to transference, strike, maternity leave, sick

leave, dismissal, and refusal to participate in the study. The non-probability sample comprised 54 professionals (n = 54). (Figure 1).

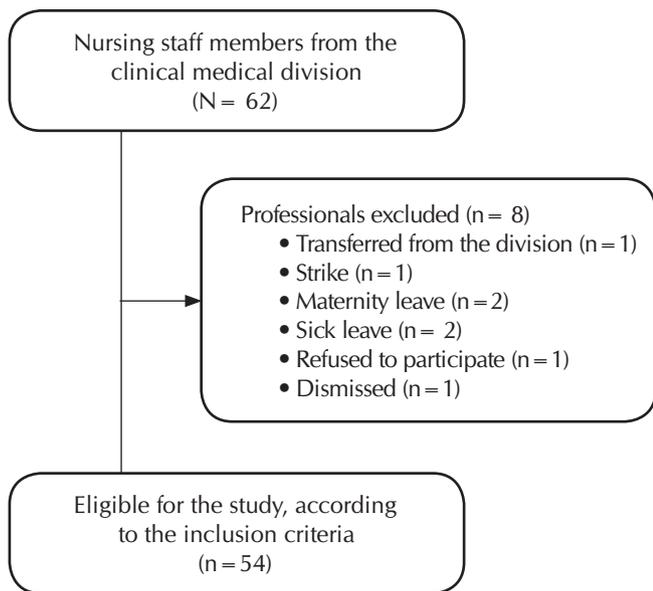


Figure 1 – Population diagram, Uberaba, Minas Gerais, Brazil, 2015

Study protocol

A structured questionnaire for demographical and professional characterization developed by the authors was used in data collection, including the following variables: sex, age, work shift, length of professional practice, existence of another employment bond, weekly working hours, and if the professional received any PPE training in the hospital. Therefore, the study applied the Scale of Adherence to Standard Precautions, which was translated and validated to Brazilian Portuguese by Brevideilli and Cianciarullo⁽¹¹⁻¹²⁾, according to Chart 1.

The Likert scale is related to individual factors of health professionals for the adherence to SPs, comprised of 13 items whose options range from a minimum score (1) to a maximum score (5).

Data were collected in the division, considering the three work shifts of the nursing staff. The questionnaire above was filled in 10 minutes, on average.

Analysis of results and statistical data

The levels of adherence to SPs were analyzed through the general mean score for each scale item, classifying them as: high score (mean scores of 4.5 or above), intermediate score (mean scores between 3.5 and 4.49, and low score (mean scores below 3.5)⁽¹⁰⁻¹²⁾. For an easy understanding of these values, the scale items were recoded, so that the higher the value, the greater the perceived intensity, classifying the categories of answers to each question as: 1 = never, 2 = rarely, 3 = sometimes, 4 = very often, and 5 = always.

For the analysis, a database was created in Excel® (2007) and exported to the Statistical Package for the Social Sciences (SPSS), version 22.0. For numerical variables, a descriptive analysis was performed for central tendency and dispersion (mean (\bar{x}) and standard deviation -SD), and for the categorical variables, the frequencies were analyzed.

The inferential analysis for the level of adherence involved a comparison between the groups of professional category (nurses, nursing technicians and nursing aides) and length of professional practice (< 6 years, 6-10 years, and > 10 years). ANOVA was applied, followed by Tukey’s test for multiple comparisons, after fulfilling the presuppositions of normality through Kolmogorov-Smirnov and/or Shapiro-Wilk’s test if $n < 30$, and of homogeneity through Levene’s test. Kruskal-Wallis nonparametric test was used for the analyses indicating violation of criteria for ANOVA. The level of statistical significance adopted in all tests was 5%.

Chart 1 – Description of items of the Scale of Adherence to Standard Precautions (SPs)

Items of the Scale of Adherence to Standard Precautions	Description
Item 1	Disposes perforating and cutting objects in proper containers.
Item 2	Treats all patients as if they were contaminated by HIV.
Item 3	Follows all SPs with all patients, regardless of their diagnosis.
Item 4	Washes hands after removing disposable gloves.
Item 5	Wears a protective apron when clothes can be dirty with blood or another secretion.
Item 6	Wears disposable gloves in situations of possible contact with blood or another secretion.
Item 7	Wears safety goggles in situations of possible contact with blood or another secretion.
Item 8	Wears a disposable mask in situations of possible splash of blood or another secretion.
Item 9	Cleans immediately with a disinfectant all spills of blood or another secretion.
Item 10	Handles with care scalpels or other perforating and cutting objects.
Item 11	Recaps needles to puncture patients’ veins.
Item 12	Wears gloves to puncture patients’ veins.
Item 13	Considers all materials in contact with patients’ saliva as contaminated.

Source: Brevideilli and Cianciarullo (2009).

RESULTS

After applying the inclusion and exclusion criteria, 54 professionals from the nursing staff working in the hospital division answered the questionnaire, most were female (72.2%), aged between 30 and 39 years (40.7%) and nursing technicians (74.1%). Regarding the length of professional practice, 40.7% had less than 6 years of experience in the field and 79.6% had no other employment bond. Most of them (72.2%) had received a PPE training provided by the hospital in the last six months (53. 1%) (Table 1).

Table 1 – Demographical and professional characterization of the nursing staff from the clinical medical division of the teaching hospital in Uberaba, Minas Gerais, Brazil, 2015

Variables	f	%
Sex		
Male	15	27.8
Female	39	72.2
Age (years)		
20 – 29	15	27.8
30 – 39	22	40.7
40 – 49	12	22.2
50 or more	5	9.3
Professional category		
Nurse	12	22.2
Nursing technician	40	74.1
Nursing aide	2	3.7
Length of professional practice (years)		
< 6	22	40.7
6 – 10	17	31.5
> 10	15	27.8
Another employment bond		
Yes	11	20.4
No	43	79.6
Weekly working hours		
≤ 36	44	81.5
37 - 40	1	1.8
> 40	7	13.0
No answer	2	3.7
Hospital training on PPE		
Yes	39	72.2
No	14	25.9
Does not remember	1	1.9

Regarding the levels of adherence, all professional categories presented intermediate adherence to SPs, with a general score of 4.41. Among the participants, 44.4% presented a high general mean score (4.64), and 55.5% presented an intermediate general mean score (4.22). The items of adherence to SPs of higher score were, respectively: ‘Disposes perforating/cutting objects in proper containers’ ($\bar{x}=4.98$; $SD\pm 0.136$); ‘Wears disposable gloves in situations of possible contact with blood or another secretion’ ($\bar{x}= 4.93$; $SD\pm 0.264$); ‘Handles with care scalpels or other perforating and cutting objects’ ($\bar{x}= 4.83$; $SD\pm 0.466$) and ‘Considers all materials in contact with patients’ saliva as contaminated’ ($\bar{x}= 4.76$; $SD= 0.473$). The item presenting the lowest score was ‘Recaps needles to puncture patients’ vein’, as it is a reverse scoring in the Likert scale, that is, the lower the score, the higher the adherence to precautions (Table 2).

Regarding the items ‘Treats all patients as if they were contaminated by HIV’ and ‘Cleans immediately with a disinfectant all spills of blood or another secretion’, two participants reported adherence to these precautions, and two other participants had never adhered to it. Two participants reported they rarely wear a protective apron when clothes can be dirty with blood or another secretion. And one participant rarely wears gloves to puncture a patient’s vein (Table 2).

With the Kruskal-Wallis nonparametric test, no statistically significant correlation was observed ($p<0.05$) between adherence to SPs and professional categories ($p= 0.404$), as data presented in Table 3.

When comparing the general mean score of the adherence to SPs and the length of professional practice under 6 years ($\bar{x}=4.44$; $SD=0.238$), between 6 and 10 years ($\bar{x}=4.35$; $SD=0.330$) and above 10 years ($\bar{x}= 4.43$; $SD=0.356$), ANOVA did not show any statistically significant difference between adherence to SPs and length of professional practice ($p= 0.612$). However, Tukey’s *post hoc* test showed that only adherence to item 4 (Washes hands after removing disposable gloves) presented a statistically significant difference between nursing professionals with less than 6 years of experience and those with more than 10 years of experience, in which the participants with longer length of practice presented greater adherence to this PPE, and the participants with shorter practice length presented lower adherence (Table 3).

Table 2 – Distribution of the nursing professionals from the clinical medical division (n = 54), according to the items of the Scale of Adherence to Standard Precautions, Uberaba, Minas Gerais, Brazil, 2015

Items of the Scale of Adherence to Standard Precautions	Always		Very often		Sometimes		Rarely		Never		No answer		Mean	Standard deviation
	5		4		3		2		1					
	f	%	f	%	f	%	f	%	f	%	f	%		
Item 1	53	98.1	1	1.9	0	0	0	0	0	0	0	0	4.98	0.136
Item 2	32	59.3	12	22.2	8	14.8	1	1.9	1	1.9	0	0	4.35	0.935
Item 3	32	59.3	19	35.2	3	5.6	0	0	0	0	0	0	4.54	0.605
Item 4	38	70.4	11	20.4	4	7.4	0	0	0	0	1	1.9	4.64	0.623
Item 5	39	72.2	11	20.4	2	3.7	2	3.7	0	0	0	0	4.61	0.738
Item 6	50	92.6	4	7.4	0	0	0	0	0	0	0	0	4.93	0.264
Item 7	25	46.3	17	31.5	12	22.2	0	0	0	0	0	0	4.24	0.799
Item 8	35	64.8	13	24.1	6	11.1	0	0	0	0	0	0	4.54	0.693

To be continued

Table 2 (concluded)

Items of the Scale of Adherence to Standard Precautions	Always		Very often		Sometimes		Rarely		Never		No answer		Mean	Standard deviation
	5		4		3		2		1					
	f	%	f	%	f	%	f	%	f	%	f	%		
Item 9	38	70.4	11	20.4	2	3.7	1	1.9	1	1.9	1	1.9	4.58	0.819
Item 10	47	87.0	5	9.3	2	3.7	0	0	0	0	0	0	4.83	0.466
Item 11	4	7.4	3	5.6	7	13.0	15	27.8	25	46.3	0	0	2.00	1.229
Item 12	39	72.2	10	18.5	3	5.6	1	1.9	0	0	1	1.9	4.64	0.682
Item 13	42	77.8	11	20.4	1	1.9	0	0	0	0	0	0	4.76	0.473

Table 3 – General mean score and standard deviation for each item of the Scale of Adherence to Standard Precautions, according to the professional category and length of professional practice, Uberaba, Minas Gerais, Brazil, 2015

Items of the Scale of Adherence to Standard Precautions	Professional category				Length of professional practice			
	Nurse ($\bar{x} \pm SD$)	Nursing technician ($\bar{x} \pm SD$)	Nursing aide ($\bar{x} \pm SD$)	p value	< 6 years ($\bar{x} \pm SD$)	6 – 10 years ($\bar{x} \pm SD$)	> 10 years ($\bar{x} \pm SD$)	p value
Item 1	4.92 ± 0.289	5.00 ± 0.000	5.00 ± 0.000	0.174	5.00 ± 0.000	4.94 ± 0.243	5.00 ± 0.000	0.337
Item 2	4.33 ± 0.778	4.38 ± 1.005	4.00 ± 0.000	0.436	4.50 ± 0.673	4.29 ± 1.160	4.20 ± 1.014	0.759
Item 3	4.42 ± 0.515	4.60 ± 0.632	4.00 ± 0.000	0.135	4.68 ± 0.568	4.47 ± 0.624	4.40 ± 0.632	0.267
Item 4	4.58 ± 0.669	4.65 ± 0.622	5.00 ± **	0.769	4.50 ± 0.673	4.53 ± 0.717	5.00 ± 0.000	0.026
Item 5	4.50 ± 0.674	4.65 ± 0.770	4.50 ± 0.707	0.426	4.45 ± 0.963	4.65 ± 0.606	4.80 ± 0.414	0.620
Item 6	4.92 ± 0.289	4.93 ± 0.267	5.00 ± 0.000	0.917	4.91 ± 0.294	4.88 ± 0.332	5.00 ± 0.000	0.421
Item 7	4.17 ± 0.835	4.25 ± 0.809	4.50 ± 0.707	0.876	4.45 ± 0.671	3.94 ± 0.827	4.27 ± 0.884	0.151
Item 8	4.42 ± 0.793	4.55 ± 0.677	5.00 ± 0.000	0.516	4.55 ± 0.671	4.47 ± 0.717	4.60 ± 0.737	0.777
Item 9	4.50 ± 0.905	4.59 ± 0.818	5.00 ± 0.000	0.637	4.59 ± 0.590	4.59 ± 0.795	4.57 ± 1.158	0.543
Item 10	4.67 ± 0.492	4.88 ± 0.463	5.00 ± 0.000	0.082	4.91 ± 0.294	4.71 ± 0.588	4.87 ± 0.000	0.306
Item 11	1.83 ± 0.718	2.00 ± 1.281	3.00 ± 2.828	0.853	1.95 ± 1.214	1.82 ± 0.951	2.27 ± 1.534	0.589*
Item 12	4.42 ± 0.669	4.72 ± 0.686	4.50 ± 0.707	0.112	4.59 ± 0.796	4.69 ± 0.704	4.67 ± 0.488	0.798
Item 13	4.67 ± 0.492	4.78 ± 0.480	5.00 ± 0.000	0.497	4.64 ± 0.581	4.82 ± 0.393	4.87 ± 0.091	0.335
Geral	4.33 ± 0.340	4.44 ± 0.288	4.23 ± 0.326	0.404	4.44 ± 0.238	4.35 ± 0.330	4.43 ± 0.356	0.612*

Note: * = Answered presuppositions to use ANOVA; SD = standard deviation; ** = Group with less than two cases.

DISCUSSION

The predominance of female participants agrees with the results of other studies, in which women make up the profile of this category. The prevalence of female subjects in nursing reflects a historical, social and cultural construction of this profession. According to data from the Federal Nursing Council (COFEN), among all nursing professionals in Brazil, approximately 88.3% were female in 2011⁽¹³⁾.

In this study, the population comprised relatively young adults, which justifies the prevalence of professional practice under 6 years⁽¹⁾. However, studies show that professionals with longer practice length may present lower adherence to standard precautions, as they feel more secure⁽¹⁴⁾.

Regarding the existence of more than one employment bond, 79.6% of the participants did not have another job and 81.5% reported 36 working hours a week, probably due to the good wages paid by the company who recently assumed the hospital management.

A study conducted with nursing professionals (n=1215) from Hospital das Clínicas, of the Medical School of Ribeirão Preto, showed that most participants who had an occupational accident had only one job and worked up to 36 hours a week; another study conducted in the same institution showed that, for each extra hour added to the usual working week, the chance of having a percutaneous accident had a 1.03-fold increase⁽¹⁵⁾. Thus, having only one employment bond contributes to better quality of nursing services provided and fewer occupational accidents, since work overload facilitates the occurrence of faults⁽¹⁰⁾.

Most nursing professionals said they received hospital training, in agreement with other studies that reported 93.8% and 81% of professionals with training provided by the hospital⁽¹⁰⁾. Authors report that, after the training, the number of percutaneous accidents decreased and adherence of the nursing staff to SPs increased⁽¹⁴⁾. A study conducted in China mentioned effective preventive actions may promote adherence to standard precautions and engage the nursing staff in behavior change⁽¹⁶⁾.

However, in the investigation about the “training” intervention, the rate of adherence to SPs increased during the training period, but reduced after some time, highlighting that institutions should provide systematic and regular training/education on this subject⁽¹⁵⁾.

The level of adherence presented by the nursing staff to SPs was intermediate, indicating they do not fully observe SPs as recommended. This finding agrees with a study conducted in an intensive care unit in a city in the state of São Paulo, where a score of 4.45 was obtained⁽¹⁰⁾. Although adherence to SPs is the main strategy to protect health professionals from exposure to transmissible pathogens and the patient, it is still below the recommended level⁽¹⁷⁾.

Several researchers have described factors that contribute to low adherence to SPs, including lack of knowledge, time, habit, training, and PPE; forgetfulness; impact on technical skills; uncomfortable devices; skin irritation; conflict between the necessary healthcare provision and self-protection; and distance between the PPE storage site and the place where it will be used⁽³⁾.

Some authors describe adherence to SPs as high, but others report unsatisfactory adherence. Thus, besides individual factors, other aspects should be taken into account, such as environmental, organizational and management issues, which may have a direct impact on results.

Regarding the items of the Scale of Adherence to Standard Precautions, the disposal of perforating/cutting materials should be in proper containers with rigid walls, and discarded in an appropriate place, but this practice is not always observed. Some institutions use inadequate boxes to dispose this type of materials or do not respect the recommended biosafety level, exposing health professionals to risks of accident while discarding materials⁽⁵⁾. Studies highlight that inadequate disposal of perforating/cutting materials is one of the most frequent causes of occupational accidents, which may lead to damages not only to the health team, but to other hospital workers as well (cleaning, hospital waste collection, maintenance, and laundry staff)⁽¹⁸⁾.

Wearing disposable gloves in situations of possible contact with blood, secretions or mucous membranes was another standard precaution with high adherence. The authors highlight the purpose of wearing gloves is to protect both health professionals and patients, and that they should be worn before contact with patients and removed right after that, and then they should wash their hands⁽¹⁾.

In a study conducted in Virginia (United States) with 311 health professionals, most of them (83%) said they always wore gloves. The professionals who reported failure to wear gloves said the reason for that was forgetfulness and that apparently, that was a low-risk patient⁽¹⁴⁾.

An important number of professionals said they did not handle with care scalpels or other perforating/cutting objects. However, occupational accidents caused by these materials among nursing professionals happen very often, especially due to frequent handling of needles, intravenous catheters, blades and other objects used in technical procedures⁽¹⁹⁾. Some studies even report that professionals from medical and surgical clinics are more exposed to accidents with perforating/cutting objects due to work overload and the high number of invasive procedures they perform⁽⁵⁾.

The scale items ‘Considers all materials in contact with a patient’s saliva as contaminated’ and ‘Recaps needles to puncture patients’ veins’ presented high adherence by nursing professionals, although the latter has a low score. Although NR32 does not recommend needle recapping, a significant number of participants performs this procedure at any moment. This finding agrees with the results from other studies, in which 79% of 319 nursing professionals reported they had performed needle recapping at least once⁽¹⁰⁾.

In a study conducted in a university hospital, 15% to 35% of occupational accidents are due to this fault, contaminated needle recapping, in needle handling. Thus, this practice is indicated as one of the main factors associated with percutaneous accidents and exposure of health professionals to infections such as HIV/AIDS, and hepatitis B and C⁽¹³⁾.

Regarding the items ‘Treats all patients as if they were contaminated by HIV’, ‘Wears a protective apron when clothes can be dirty with blood or another secretion’, ‘Cleans immediately with a disinfectant all spills of blood or another secretion’, and ‘Wears gloves to puncture patients’ veins’, lower frequencies were observed for “rarely” and “never”.

A small number of professionals is not used to treating all patients as if they were contaminated by HIV, that is, they tend to be more careful, even if they do not know the patient’s diagnosis, considering all patients may acquire infectious/contagious diseases, such as AIDS.

Despite only one professional reporting “rarely” for wearing gloves to puncture a patient’s vein, considering the risk of contamination with biological materials, it becomes significant when combined with 24.1% of participants who only perform that “very often” and “sometimes” (not ‘always’). Therefore, this habit is very common in the nursing practice. A study conducted with a nursing staff showed that 84.4% of venous punctures were performed without procedure gloves⁽¹⁴⁾.

Besides these items, ‘Washes hands after removing disposable gloves’ and ‘Wears safety goggles in situations of possible contact with blood or another secretion’ did not ‘always’ present adherence. Hand washing, one of the recommended precautions to reduce healthcare-related infections, should be performed by all health professionals interviewed in this study; however, the results are below expected levels. When analyzing the hospital environment, there is no uniformity in conducts and routines related to hand washing and, despite all evidences confirming the importance to observe this precaution, the hands of health professionals remain as the number one vehicle of hospital infection dissemination⁽²⁰⁾.

Regarding ‘Wears safety goggles in situations of possible contact with blood or another secretion’, this item was similar to the other studied items, with low adherence to this standard precaution⁽¹⁰⁾.

Data show no correlation between professional category and higher adherence to SPs, in which most participants, regardless of their professional category (nurses, nursing technicians or nursing aides), presented an intermediate score. This result agrees with a study conducted in a large hospital in a city in the state of São Paulo, which did not present any statistically significant difference among the nursing categories⁽¹⁴⁾.

A study conducted in a Brazilian hospital found that 49.3% of 219 exposure cases to notified biological material happened to professionals presenting less than five years of experience and more experienced nursing professionals had fewer accidents⁽¹⁴⁾. As nursing professionals become more experienced, they acquire confidence and skills, and consequently, feel more protected and become less adherent to SPs.

Although the literature shows that length of professional practice may increase exposure to potentially contaminated biological materials and reduce adherence to SPs, in this study, only one scale item ('Washes hands after removing disposable gloves') presented higher adherence by an experienced professional. On the other hand, an observational study on hand washing reported adherence rates below 40% among experienced health professionals⁽²¹⁾.

Study limitations

One study limitation was its nonsystematic sampling, since participant selection was not random, as it was a census study, implying the nonpossibility of extrapolation of results for this

population to other realities. However, it did not compromise the reliability of the results obtained.

Study contributions to the nursing field

The findings from this study may guide new interventions in the process of permanent education focused on safety for both professionals and patients, with an impact on health care quality. However, further studies are required with larger target audiences and to investigate other factors that may be associated with adherence to SPs by these professionals.

CONCLUSION

The level of adherence to SPs by the studied nursing staff was intermediate (4.41). No statistically significant difference was observed between the global mean scores of adherence to SPs and the professional categories and length of professional practice. However, professional experience (10 years or more) had a positive influence on the adherence 'Washes hands after removing disposable gloves' ($p=0.026$).

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