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ADHERENCE TO STANDARD PRECAUTIONS BY NURSING PROFESSIONALS: A LITERATURE REVIEW

ADESÃO ÀS PRECAUÇÕES-PADRÃO PELOS PROFISSIONAIS DE ENFERMAGEM: UMA REVISÃO DA LITERATURA

ADHESIÓN A PRECAUCIONES ESTÁNDAR EN PROFESIONALES DE LA ENFERMERÍA: UNA REVISIÓN DE LA LITERATURA

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ABSTRACT

Objective: to analyze the evidence available in the national and international literature on adherence to standard precautions by nursing professionals. ***Method:*** integrative review with the aim to answer the following question << **What is the evidence available in literature on adherence to standard precautions by nursing professionals?** >> Searches were conducted in the databases of the Latin-American and Caribbean Center on Health Sciences Information (LILACS), Scopus, Web of Science and Medline, and the Scientific Electronic Library Online (SciELO) using the meta descriptors: Nursing, Universal precautions, Standard precautions. ***Results:*** of 1,216 studies identified, 60 were selected and analyzed. After analysis of the abstracts, 11 were included. Three studies were published in English language and eight in Portuguese language. Ten studies presented level of evidence 4, and one integrative review did not present evidence level. ***Conclusion:*** the present study enabled to identify the concern about the need for adherence to standard precautions by nursing professionals and the importance of identifying the obstacles to follow it. ***Descriptors:*** Adherence; Standard precautions; Nursing; Universal precautions; Personal protective equipment.

RESUMO

***Objetivo*:** analisar, na literatura nacional e internacional, as evidências disponíveis sobre adesão às precauções-padrão por profissionais de enfermagem. ***Método*:** revisão integrativa, com vistas a responder a seguinte questão **<< Quais as evidências disponíveis na literatura sobre adesão às precauções-padrão por profissionais de enfermagem? >>** Foi realizada a busca nas bases de dados LILACS, *Scopus, Web of Science e* Medline, e na biblioteca virtual *SciELO,* empregando-se os descritores: Enfermagem, Precauções Universais, Precauções-Padrão. ***Resultados*:** De 1.216 artigos identificados, 60 foram selecionados e analisados. Após a análise dos resumos, foram incluídos 11 artigos. Três artigos foram publicados em inglês e oito em português. Dez artigos apresentaram nível de evidência 4, e um, como revisão integrativa, não apresentou nível de evidência. **Conclusão:** o estudo permitiu identificar a preocupação quanto à necessidade da adesão às precauções-padrão por profissionais de enfermagem e a importância da identificação dos obstáculos para adotá-la. ***Descritores*:** Adesão; Precauções-Padrão; Enfermagem; Precauções Universais; Equipamento de Proteção Individual.

RESUMEN

Objetivo: analizar en literatura nacional e internacional las evidencias disponibles sobre adhesión a Precauciones Estándar en profesionales de enfermería. ***Método***: revisión integrativa, objetivando responder a la pregunta << **¿Cuáles son las evidencias disponibles en la literatura sobre adhesión a las precauciones estándar en profesionales de enfermería?** >>. Búsqueda realizada en bases LILACS, *Scopus*, *Web of Science* y Medline, y en la biblioteca virtual SciELO, utilizando los descriptores: Enfermería, Precauciones Universales, Precauciones Estándar. ***Resultados***: Fueron seleccionados y analizados 60 de 1.216 artículos hallados. Una vez revisados los resúmenes, fueron incluidos 11 artículos. Tres artículos fueron publicados en inglés y ocho en portugués. Diez artículos presentaron nivel de evidencia 4; y uno, como revisión integrativa, no presentó niveles de evidencia. ***Conclusión***: el estudio permitió identificar la preocupación respecto de la necesidad de adhesión a las precauciones estándar en profesionales de enfermería y la importancia de identificar los obstáculos para seguirlas. ***Descriptores***: Adhesión; Precauciones Estándar; Enfermería; Precauciones Universales; Equipo de Protección Individual.

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INTRODUCTION

Health workers are exposed to diverse types of agents in the work environment, such as viruses, bacteria, fungi, protozoa and ectoparasites. Occupational exposure might be caused by accidents with sharps, splashes of blood in mucous membranes, inhalation of aerosols or larger particles.

In 1996, focusing on the workers' health, the Centers for Disease Control and Prevention (CDC) recommended revised standards of isolation and precautions known as standard precautions (SP)[1]. These measures must be applied in the care of all patients, regardless of their presumed infection status[1-2].

Gloves, gowns, masks, googles and face shields are considered personal protective equipment (PPE) recommended by SP to control the spread of microorganisms, thus giving professionals better protection during the performance of their activities[1-3].

With the intention of minimizing the risk of pathogen transmission by blood, such as the human immunodeficiency virus (HIV) and hepatitis B (HBV) and C (HCV) viruses, several safety measures were established in health services, among them the standard precautions[1-2]. However, although there is some knowledge on the part of health workers and nursing staff regarding the importance of the use of SP, there is evidence in the literature that adherence does not regularly occur in practice[4-6].

The establishing of SP aims to reduce chances of health professionals being in contact with blood and other body fluids. Although there is strong evidence that adherence to these measures minimize exposure to blood, low adherence to SP by health professionals has been extensively noted[7].

Health professionals must prioritize a safe attitude regarding the use of PPE during procedures to assure themselves, staff and patients[3] maximum protection. Therefore, it is necessary to implement measures that aim to make these professionals aware since the beginning of their education, so that they can really include them in their professional practice[8].

OBJECTIVE

● To analyze the evidence available in the national and international literature on adherence to standard precautions by nursing professionals.

METHOD

Article extracted from the undergraduate final paper of Bruna Barsalobres Bottaro, financed by the Scientific Initiation Program (PIBIC, as per its acronym in Portuguese) and the National Council for Scientific and Technological Development (CNPQ, as per its acronym in Portuguese).

Integrative review studies, characterized as one of the research methods used in the concept of Evidence-Based Practice (EBP), have the purpose of gathering and summarizing research results on a specific issue, in an orderly and systematic manner[9]. This type of study enables the synthesis of published studies and allows the generation of knowledge on the approached issue[9-10].

Six steps were followed in the present integrative review[10]: hypothesis identification or guiding question, sample selection, categorization of the studies, discussion and interpretation of results and presentation of integrative review and knowledge synthesis.

The PICOT[11] strategy (P: Population/Patient/Problem, I: Intervention, C: Comparison, O: Outcome, T: Type of Study) was adopted to formulate the guiding question. Therefore, the guiding question of the present study is: What is the evidence available in the literature on adherence to standard precautions by nursing professionals?

Original or review studies published between 1990 and 2012 were included in Portuguese or English language. Repeated studies in the databases, dissertations, theses and studies that did not match the objective of the study after careful reading of titles and abstracts were excluded.

The search was carried out in the databases of the Latin-American and Caribbean Center on Health Sciences Information (LILACS), Web of Science, Scopus and PubMed, and the Scientific Electronic Library Online (SciELO). Non-controlled descriptors were used and the Health Sciences Descriptors (DeCS) was consulted for the identification of controlled descriptors of SciELO and LILACS. Descriptors of the Medical Subject Headings (MeSH) were adopted for the bases of PubMed, Scopus and Web of Science, which were composed of: Adherence, Universal Precautions, Standard Precautions, Nursing, Devices Protection. The boolean operator "and" was used for the combination of the descriptors.

Of the 1,216 studies found after the reading of titles and abstracts, 1,156 were excluded and 60 remained (Figure 1).

Place	Studies found	Studies excluded by title	Studies excluded by abstract	Selected studies
SciELO	22	8	0	**14**
LILACS	49	15	17	**17**
Web of Science	439	337	91	**11**
Scopus	425	297	114	**14**
Medline	281	248	29	**4**
Total	1216	905	251	**60**

Figure 1. Distribution of the studies obtained according to the search place.

After discarding repeated studies, 15 studies remained. Full reading of the selected studies allowed the exclusion of four more for approaching the subject standard precautions, which was not related to the adherence of nursing professionals, totaling 11 studies.

After the careful reading of the selected studies, a form drawn up by the author was filled in, containing: study title, database, year and country of publication, objective, method, main results and level of evidence.

Analysis of the level of evidence categorized studies in six levels according to Melnyk[9]. Level 1: evidence resulted from the meta-analysis of multiple controlled and randomized clinical studies. Level 2: evidence obtained in individual studies with trial design. Level 3: quasi-experimental evidence. Level 4: evidence of descriptive study (non-experimental) or with a qualitative approach. Level 5: evidence from case or experience reports. Level 6: evidence based on experts' opinion.

RESULTS

Of the 11 studies analyzed in their entirety, three were published in English language and eight in Portuguese language, being nine in the nursing field and two multidisciplinary (Figure 2).

N	Title	Author (s)	Journals	Year of publication
01	Subscribing to the use of individual protection equipment in nursing	Talhaferro B, Barboza DB, Oliveira AR.	Rev Ciênc Méd	2008
02	Adherence to standard precaution in the peripheral vascular access	Cirelli MA, Figueiredo RM, Zem-Mascarenhas SH.	Rev Latino-Am Enfermagem	2007
03	Adherence to standard precautions by nursing professionals in a university hospital	Malaguti-Toffano SE et al.	Acta Paul Enferm	2012
04	Adoption of standard precautions: a report	Lopes MHBM; Moromizato SS, Veiga JFFS	Rev Latino-Am Enfermagem	1999
05	Factors impacting compliance with standard precautions in nursing, China	Luo Y, He GP, Zhou JW, Luo Y.	Int J Infect Dis	2010
06	Compliance with standard-precautions among medical and nursing staff at a university hospital	Brevidelli MM, Cianciaruo TI.	OBJN	2006
07	Safety of nursing staff and determinants of adherence to personal protective equipment	Neves HCC et al.	Rev Latin-Am. Enfermagem	2011
08	The use of the precautious pattern in the nursing attendance: retrospective study	Aguiar DF, Lima ABG, Santos RB.	Esc Anna Nery Rev Enfer	2008
09	Biosafety in STD/AIDS: conditioners of nursing workers' adherence to precaution measures	Gir E et al.	Rev Esc Enferm USP	2004
10	Knowledge of standard and isolation precautions in a large teaching hospital	Sax H et al.	Infect Control Hosp Epidemiol	2005
11	Adherence to Universal (barrier) Precautions during interventions on critically ill and injured emergency department patients	Kelen GD et al.	J Acquir Immune Defic Syndr	1990

Figure 2. Studies included in the integrative review according to author(s), database, journal and year of publication.

Regarding the level of evidence, 10 studies presented level 4, and one, being an integrative review, did not present level of evidence (Figure 3).

N	Design	Level of evidence	Country of origin
01	Exploratory, descriptive and cross-sectional study	4	Brazil
02	Quantitative, prospective study	4	Brazil
03	Quantitative, cross-sectional study	4	Brazil
04	Quantitative study	4	China
05	Quantitative study	4	Brazil
06	Quantitative study	4	Brazil
07	Quantitative, exploratory study	4	Brazil
08	Integrative review	-	Brazil
09	Qualitative study	4	Brazil
10	Quantitative study	4	Switzerland
11	Quantitative study	4	U.S.A.

Figure 3. Description of studies included in the integrative review according to research design, level of evidence and country of origin.

DISCUSSION

Studies conducted in different countries proved that knowledge on standard precautions varied among the several professional researched categories. Research conducted in China[12] showed that half of the nurses had knowledge on all the recommendations of SP. Research carried out in Switzerland[13] observed that 55.9% of the professionals had good knowledge on SP. However, a misinterpretation of their concept[14] was also observed, when professionals referred that universal precautions consisted in the use of gloves, exclusive materials for handling waste and eventually for clothes of patients with HIV.

Regarding the population of the studies, most of them was made up of women, reflecting a characteristic of the nursing area in Brazil[4,12-14]. Teams were made up of nursing aides, professionals concentrated in the age group of 30 years and with more than 10 years of professional experience, which was observed among most of the individuals interviewed in early studies[4,12-16].

Different psychosocial and organizational factors might be related to the adoption or not of safe practices by the Brazilian Health Care Programs, (PAS, as per its acronym in Portuguese), including low risk perception, perception of a poor safety climate at the work environment, conflict between providing the patient with the best care service or protecting themselves from exposure, and the belief that precautions are unnecessary in some situations[17].

More experienced professionals might have more confidence in their work, thus neglecting the use of personal protective equipment, also underestimating the risk of contamination[17-8].

According to the Brazilian Regulatory Standard NR-32[19] "Employers must continuously assure their workers' training before the beginning of their activities." The studies showed that most of the time professionals had received training on SP during their education or in their work environment[14-16]. A survey conducted at the University of Geneva, in Switzerland, showed that only 24.6% of the professionals received training on SP at the hospital[13].

Regarding the type of equipment used, it is worth mentioning that gloves were the most frequently quoted PPE by professionals in six studies[4,7,14-16,20]. The excuses given for non-adherence were: urgency procedures, hurry, loss of ability with the use of gloves and low-risk patient. A study showed that 6.4% of the professionals did not have knowledge on the use of the equipment and 2.1% said they had forgotten about it[16].

Concerning the use of googles, adherence reached unsatisfactory levels, even with the risk of splashes of biological materials in the eyes and mucous membranes[12,14,20].

The studies pointed to low adherence of professionals to the use of disposable masks, and the main excuse for not using them was the difficulty of breathing, suffocation and discomfort[12-13, 16-17].

Regarding hand hygiene after gloves are removed, the studies observed that adherence is high, but when referring to adherence to this practice before and after procedures, some studies[4,18] showed decreased low adherence[7,15].

The non-use of aprons was observed in several studies, in which the interviewed professionals reported forgetfulness and lack of time to justify low adherence[20]. Only one study was identified with a satisfactory level of adherence[14].

According to the Brazilian Regulatory Standard NR-32[19], the recapping and manual disconnection of needles are forbidden. The studies showed

that the professionals were aware of risks of accidents caused by this act[4,14-15].

Among different reasons frequently observed by healthcare professionals for the non-adherence to SP recommendations, it is worth mentioning the prejudgment of the patients' presumed infection status, work overload, inconvenience in the use of PPE, lack of ability, report of lack of knowledge, accessibility and the availability of materials/devices, forgetfulness and lack of time at work[4,12,13,16,18,20]. Accessibility, availability and inappropriate infrastructure favor SP low adherence[15,17-18].

Easy access and availability of PPE in strategical places might remind professionals about the need for its use, thus improving the level of adherence. In addition, knowledge on preventive measures and how diseases are transmitted are facilitators for adherence to SP[21].

FINAL REMARKS

Adherence to SP represent a crucial measure to minimize the dissemination of microorganisms among professionals of the health area, since their daily professional practice requires direct contact with patients. Nonetheless, some obstacles were pointed as problems for satisfactory levels of adherence, highlighting the need for further studies on measures that may increase adherence to SP by professionals of the health area.

Although scientific evidences are not considered strong, the present study enabled to identify some problems in adherence, which must be carefully investigated.

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