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Theoretical-practical acquisition of topics relevant to patient safety: dilemmas in the training of nurses[a]

Aquisição teórico-prática de tópicos relevantes à segurança do paciente: dilemas na formação de enfermeiros

Adquisición teórico-práctico de tópicos relevantes sobre seguridad del paciente: dilemas en la formación de enfermeros

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Abstract

Objective: To investigate content associated with patient safety included in the curricula of undergraduate nursing courses of two Brazilian higher educational institutions. **Method:** A descriptive survey study was carried out with 119 students of nursing courses (licentiate and bachelor degree), from August to September 2016. The topics investigated were based on the WHO patient safety curriculum guide: multi-professional edition. Armed with the data, univariate and bivariate analyses were carried out. **Results:** Of the 46 content areas investigated in the questionnaire, two scored high in non-achievement in theoretical or practical activities, namely "the culture of blame" and "community-acquired infection." Licentiate and bachelor degree students reported a higher acquisition in theoretical classes ($p = 0.012$), whereas bachelor degree students reported similar acquisition in theory and practice ($p = 0.013$). **Conclusion:** The content mostly included theoretical and practical approaches at least once throughout the course. However, when considering content associated with patient safety-related sociocultural aspects, lower scores were found.

Keywords: Patient Safety; Education, Higher; Education, Nursing; Curriculum.

Resumo

Objetivo: Investigar conteúdos relacionados à segurança do paciente, contemplados nos currículos de cursos de graduação em Enfermagem de duas Instituições de Ensino Superior brasileiras. **Método:** Estudo descritivo, tipo *survey,* realizado com 119 alunos de cursos de Enfermagem (Licenciatura e Bacharelado), no período de agosto a setembro de 2016. Os tópicos investigados foram baseados no *Patient safety curriculum guide: multi-professional edition*. De posse dos dados, realizaram-se análises univariadas e bivariadas. **Resultados:** Dos 46 conteúdos investigados no questionário, dois tiveram escores elevados de não obtenção em atividades teóricas e/ou práticas, que são: "Cultura de culpa" e "Infecção comunitária". Alunos da Licenciatura e Bacharelado referiram maior aquisição em aulas teóricas ($p = 0,012$), enquanto os do Bacharelado atribuíram de forma equivalente teoria e prática ($p = 0,013$). **Conclusão:** Os conteúdos estiveram contemplados, em sua maioria, na abordagem teórica e prática, ao menos uma vez no decorrer do curso. No entanto, quando se tratou de conteúdos ligados a aspectos socioculturais relacionados à segurança do paciente registraram-se escores menores.

Palavras-chave: Segurança do Paciente; Educação Superior; Educação em Enfermagem; Currículo.

Resumen

Objetivo: Investigar contenidos relacionados a seguridad del paciente, contemplados en programas de cursos de grado en Enfermería de dos Instituciones de Enseñanza Superior brasileñas. **Método:** Estudio descriptivo, tipo *survey*, realizado con 119 alumnos de cursos de Enfermería (Licenciatura y Bachillerato), de agosto a setiembre de 2016. Los tópicos investigados estaban basados en el *Patient safety curriculum guide: multi-professional edition*. Se realizaron análisis univariados y bivariados de los datos. **Resultados:** De 46 contenidos investigados, dos obtuvieron alto grado de desaprobación en actividades teóricas y/o prácticas: "Cultivo de culpa" e "Infección comunitaria". Los alumnos de Licenciatura y Bachillerato reportaron mayor adquisición en clases teóricas ($p = 0,012$), mientras los de Bachillerato reportaron equivalentemente a teoría y práctica ($p = 0,013$). **Conclusión:** Los contenidos estuvieron mayoritariamente contemplados en abordajes teóricos y prácticos al menos una vez durante el curso; aunque se registraron puntajes menores respecto de contenidos vinculados a aspectos socioculturales relacionados a seguridad del paciente.

Palabras clave: Seguridad del Paciente; Educación Superior; Educación en Enfermería; Currículum.

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INTRODUCTION

Patient safety has been widely discussed worldwide and is recognized as an important quality indicator, especially due to the high incidence of adverse events associated with the provision of health care.[1,2]

Studies that estimated the occurrence of adverse events show a mortality rate ranging between 40 and 98 thousand patients/year in the United States.[3,4] In Brazil, there is no accurate outlook about the magnitude of adverse events, although data point out that, every three minutes, more than two Brazilians die in a hospital (public or private), due to errors and other adverse events associated with professional care.[5]

Acknowledgement of the magnitude of this issue and the non-intentional harm caused by health care has triggered multiple reflections, especially on the training of healthcare professionals, which seems to be weak in terms of not following the fast rhythm of innovations in practice, changes in conditions, diversities, and workforce imposed in the last decades.[6]

Based on this, and in accordance with international regulatory agencies, the Brazilian Ministry of Health established the Patient Safety National Program in 2013, which has among its main goals to prevent and reduce the incidence of adverse events associated with healthcare services. In this document, the inclusion of the theme of patient safety in the curricula of healthcare courses was considered a priority,[7] although information about the mechanisms used to evaluate this inclusion are not clear.

The evaluation of healthcare training has been difficult, especially due to the lack of systematic models of evaluation. Therefore, the World Health Organization (WHO) has proposed an evaluation based on research into topics present in the curricula of healthcare courses, to identify common themes in terms of frequency, as well as those less explored, which are available in the WHO patient safety curriculum guide: multi-professional edition.[8] This guide focuses on the training of students in healthcare courses and helps teachers to approach the theme in their classes.

Based on this, the objective of the present study was to investigate content associated with patient safety included in the curricula of undergraduate nursing courses of two Brazilian higher educational institutions.

METHOD

This was a cross-sectional survey study, carried out in the undergraduate nursing courses of two public higher educational institutions in Brazil, one in the state of São Paulo and the other in Brasilia, Federal District of Brazil. The choice of the institutions was purposeful and was based on the similarity of pedagogical political projects.

In these institutions, the nursing course is divided into two regimes: a bachelor's degree and bachelor's and licentiate degree. The first aims to train general nurses to perform in several healthcare areas, for promotion of health, prevention, and recovery from illnesses and harm. However, the bachelor's and licentiate degree course in nursing invests in the training of general nurses to perform with expertise in the health promotion area, in several nursing care practice areas, as well as becoming professors of professional training courses in nursing (training of nursing aides and technicians).

One hundred-nineteen nursing students who met the following inclusion criteria participated in the study: currently enrolled in one of the educational institutions, and attending the last period of the course. Students who were enrolled but were not attending classes were excluded.

Data collection occurred from August to September 2016, guided by a questionnaire that sought to identify in which contexts the content regarding patient safety had been acquired throughout the course, according to the WHO patient safety curriculum guide.[8] The interviews were carried out collectively in the classrooms of the respective institutions.

The instrument used was previously validated by seven experts in the area, using the Likert scale[9] for consensus. A criterion was established that the item should reach the minimum entry percentage of 75% in the scores "important" or "very important" for inclusion in the final questionnaire.

Initially, the manual organization of the questionnaires was carried out, followed by double-entry typing in Microsoft Excel 2010, which was imported to the Statistical Package for the Social Sciences 20 software (SPSS). Armed with the data, univariate and bivariate analyses were carried out. Because of the categorical variables, the chi-square was used, and the significance level was $p \leq 0.05$, with a 95% confidence interval.

The research project was approved by the institutions' research ethics committee. The development of the study complied with all ethical principles that guide research involving human beings.

RESULTS

Among the 119 participants, 79 (66.4%) were enrolled in the bachelor degree course in nursing. As observed in Table 1, with regard to the sociodemographic variables, there was a prevalence of the feminine gender (86.6%), with age group between 21 and 25 years (84.0%). Most students had carried out scientific initiation (67.2%) and did not have previous training or education in the healthcare area (87.4%).

The main theoretical aspects that support the training of future healthcare professionals regarding safe care or patient safety are presented in Table 2.

Considering the specificities of each item that allow its exploration in both theoretical and practical aspects, interesting and worrying results were observed. Of the 46 items, only two ("culture of blame" and "community-acquired infection") were not reported in either theoretical or practical activities, which indicates impairment in two important aspects of the topics "patient safety" and "prevention and control of infections." When cross-checking of data between the responses of students enrolled in the courses and the total score of tracking terms

Table 1. Characteristics of the students regarding sociodemographic and training variables, Brazil, 2016.

	N	%
Gender		
Male	16	13.4
Female	103	86.6
Age group		
18 to 25	106	89.1
26 to 30	8	6.7
Older than 30	5	4.2
Regime of the course		
Licentiate and Bachelor degree	40	33.6
Bachelor degree	79	66.4
Did the student carry out scientific initiation?		
Yes	80	67.2
No	39	32.8
Did the student have previous skills or training in the healthcare area?		
Nursing technician	8	6.7
Nursing aide	3	2.5
Other(s)	2	1.6
No	106	89.1
Does the student work or did work as a professional in the healthcare area?		
Yes	10	8.4
No	109	91.6

was carried out, it was observed that, for licentiate and bachelor degree students, most terms were perceived in theoretical classes ($p = 0.012$), whereas for bachelor degree students there was an association with the knowledge perceived in both theory and practice ($p = 0.013$), as shown in Table 3.

DISCUSSION

The content associated with patient safety in the curricula of undergraduate courses in nursing of the educational institutions studied mostly included theoretical and practical approaches at least once throughout the course. However, when considering content associated with patient safety-related sociocultural aspects, such as teamwork and safety culture, lower achievement scores were found.

Healthcare institutions tend to overestimate content that promotes clinical skills, such as diagnosis and treatment of diseases,[10] and actions focused on patient safety-related processes and interpersonal relationships in healthcare teams take a back seat.

Therefore, the scores attributed to a "culture of blame" were lower than expected, and interpreting the error as a failure may be a mistake. The fact that students reported that they did not have the necessary contact with the subject "culture of blame" contributes to the perpetuation of the punitive ideology regarding errors, not allowing students to understand errors as an opportunity to learn, as well as to develop abilities to prevent them.[11]

With regard to this subject, a study[12] conducted in China showed that students in the healthcare area felt more comfortable with activities associated with clinical safety, such as hand hygiene, infection control, and safe medication administration practices, than with sociocultural aspects or those contextually dependent on patient safety, such as teamwork, safety risk management, and safety culture.

Currently, institutions work through a sociocultural perspective, recognizing that the interaction between knowledge and individual learning is dependent on cultural conditions under which learning takes place. Therefore, for implementation of sociocultural skills focused on patient safety in the healthcare education, the incorporation of content in classrooms, supported by actions and modeling of concepts in a wide and focal consistent form, applied to the students' reality, is required.[13]

Improving the integration and global implementation of patient safety concepts in classrooms and clinical practice is required, with integration between what is being taught and the healthcare reality. This may help in resolving inconsistencies in the way patient safety issues are dealt with by different preceptors.[14]

Two complementary variables showed very divergent behaviors. The tracking term "community-acquired infection" was pointed out by 42.0% of the students as not achieved, whereas "hospital infection" was indicated by only 2.5%. This result is reflection of the hospital-centric training model of healthcare professionals, strongly focused on "patient cure" and far from the prevention principles of HAIs. These still have a considerable impact on morbidity and mortality rates in the intra- and extra-hospital environment, leading to the increase in length and cost of hospital stays, thus being recognized as a serious global public healthcare problem for several decades.[15]

The traditional "invisibility" given to community-acquired infection results from difficulties in conceptualizing the term, listing risk factors and prevention and control measures, as shown in studies conducted in Brazil[15,16] and abroad.[17]

Strategies for prevention and control of infections must be expanded to all healthcare areas, and this primarily occurs through the training of professionals.[10,16] One of the major difficulties in the prevention of healthcare-associated infections refers to the education and training of human resources sensitive to the problem, aware of and responsible for the maintenance of a biologically safe environment, which is crucial to providing safe care.[18]

This requires that the theme of patient safety is transversally explored with greater depth throughout the course, in order to optimize learning opportunities, establishing a connection with the practice performed.

Table 2. Distribution of items associated with patient safety reported by the undergraduate nursing students according to the source acquisition (theory or practice), Brazil, 2016.

Topic	Tracking terms	Theoretical classes	Practical classes	Theory and practice	Not achieved
		%	%	%	%
What is patient safety?	Notions of patient safety	37.0	0.8	61.3	0.8
	Care with focus on patients	30.3	4.2	64.7	0.8
	Adverse events	70.6	0.8	24.4	4.2
	Errors involving human, environmental, or organizational factors	63.9	0.8	30.8	5.0
	Culture of blame	26.1	7.6	4.2	62.2
Reasons why the application of human factors is important for patient safety	Use of ergonomic principles in patient care	28.6	4.2	49.6	17.6
	Fatigue and stress during professional performance	50.4	14.3	23.5	11.8
	Safety in the use of equipment	20.2	3.4	75.6	0.8
	N95 or PFF2	42.9	2.5	31.9	22.7
	Regulatory Standard no. 32 (NR32)	25.2	0.8	68.1	5.9
	Standard precautions/Use of personal protective equipment	10.9	0	89.1	0
	Workers' immunization	40.3	0	55.5	4.2
Effective team	Work's organizational structure	51.3	1.7	42.0	5.0
	Interdisciplinarity/Healthcare team	35.3	3.4	59.7	1.7
	Effective leadership	48.7	2.5	44.5	4.2
	Resolution of conflicts	42.9	5.9	36.1	15.1
	Supervision	45.4	3.4	44.5	6.7
	Communication process in the work environment	31.9	1.7	61.3	5.0
Learning through errors to prevent damage	Errors/Types of errors	37.0	1.7	61.3	0
	How to learn with errors	37.0	12.6	31.9	18.5
	Notification of errors	50.4	11.8	24.4	13.4
Use of quality improvement methods for improvement in care	Indicators of quality of care	45.4	2.5	45.4	6.7
	Improvement in care	31.9	0	63.9	4.2
Medication safety	Side effects	69.7	0.8	24.4	5.0
	Medication system and processes of prescription, distribution, and administration of medications	16.8	3.4	76.5	3.4
	Medication errors	47.9	0.8	48.7	2.5

Continued Table 2.

Topic	Tracking terms	Theoretical classes %	Practical classes %	Theory and practice %	Not achieved %
Interaction with patients and caregivers	Legislations and rights of healthcare system users	73.1	0.8	19.3	6.7
	Respect for patients' healthcare needs (cultural aspects and beliefs)	28.6	0	71.4	0
	Family's responsibility and integration in patient care	26.9	2.5	68.9	1.7
Prevention and control of infections	HAIs	63.9	1.7	26.9	7.6
	Hospital infection	53.8	1.7	42.0	2.5
	Community acquired infection	48.7	0	9.2	42.0
	Biofilm	71.4	1.7	16.0	10.9
	Pandemic	72.3	5.9	21.8	0
	Epidemic	73.9	0.8	19.3	5.9
	Outbreak	56.3	0.8	21.8	21.0
	Infection risks	37.0	0	62.2	0.8
	Infection chain and cross-infection	62.2	1.7	30.3	5.9
	Hand hygiene	10.1	1.7	87.4	0.8
	Disinfection	25.2	0	73.9	0.8
	Antisepsis	7.6	0.8	90.8	0.8
	Antisepsis techniques	16.8	1.7	80.7	0.8
	Precautionary and control measures of infections	22.7	0	75.6	1.7
	Isolation	25.2	1.7	70.6	2.5
	Microbial resistance	60.5	0.8	32.8	5.9
	Processing of contaminated articles	47.1	38.6	14.3	0

Note: HAIs – Healthcare-associated infections.

Table 3. Association between the regime of the course (Bachelor or Licentiate degree) and the number of tracking terms reported.

Outcome	Regime of the course	N	Mean	Standard deviation	*p* value
Number of tracking terms reported (theoretical classes)	Licentiate and Bachelor degree	40	16.10	7.64	0.012
	Bachelor degree	79	20.45	9.32	
Number of tracking terms reported (practical classes)	Licentiate and Bachelor degree	40	1.12	2.62	0.930
	Bachelor degree	79	1.08	1.82	
Number of tracking terms reported (theory and practice)	Licentiate and Bachelor degree	40	25.17	9.35	0.013
	Bachelor degree	79	20.51	9.54	

The present study presents limitations, especially due to the design used (cross-sectional), which does not allow for follow-up of the participants throughout their education. Therefore, the interaction with an observational phase would make it possible to evaluate the theoretical-practical conciliation in the working field, thus identifying failures and errors in due time.

CONCLUSION

The content was mostly included in the theoretical and practical approach at least once throughout the course. However, when considering content associated with patient safety-related sociocultural aspects, lower scores were found, proving that the education on patient safety is still focused on a curative and private approach, especially based on the development of clinical skills.

In addition, content associated with prevention and control of community-acquired infections also showed low achievement scores, due to the greater emphasis given to the hospital-centric training model of healthcare professionals.

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