Patient safety in the understanding of health care students

Segurança do paciente na compreensão de estudantes da área da saúde

Seguridad de los pacientes en la percepción de los estudiantes de la área de la salud

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ABSTRACT
Objective: To verify the understanding of graduate health care students on patient safety.
Method: Descriptive cross study, held in 2015 with 638 students at the Health Sciences Center of the Federal University of Santa Maria, State of Rio Grande do Sul, Brazil. The study used a questionnaire with variables related to the characterization of students, the conceptual and attitudinal aspects of human error and patient safety, made available online in the Student Portal.
Results: A higher percentage of students reported having no formal training on the subject. The study revealed aspects conside4red fundamental to the safety culture, such as the importance of systemic error analysis, the concern with the work environment and appreciation of teamwork. Some attitudes demonstrated uncertainty in the correct way of acting.
Conclusion: Students showed perceptions that were favorable to patient safety. The formalization of the subject at different levels of education is needed.
Keywords: Patient safety. Health sciences students Higher education.

RESUMO
Objetivo: Verificar a compreensão dos estudantes de graduação da área da saúde sobre a segurança do paciente.
Método: Estudo transversal descritivo, realizado em 2015, com 638 estudantes do Centro de Ciências da Saúde, da Universidade Federal de Santa Maria, RS, Brasil. Foi utilizado um questionário com variáveis relativas à caracterização dos estudantes, aos aspectos conceituais e atitudinais sobre o erro humano e à segurança do paciente, disponibilizado online no Portal do Aluno.
Resultados: Maior percentual de estudantes relatou não ter tido aprendizado formal sobre o tema. Evidenciaram-se aspectos fundamentais para a cultura de segurança como a importância da análise sistêmica do erro, a preocupação com o ambiente de trabalho e a valorização do trabalho em equipe. Algumas atitudes demonstraram incerteza na forma correta de agir.
Conclusão: Os estudantes demonstraram percepções favoráveis à segurança do paciente. A formalização do tema nos diferentes níveis do ensino é necessária.
Palavras-chave: Segurança do paciente. Estudantes de ciências da saúde. Educação superior.

RESUMEN
Objetivo: Verificar la comprensión de estudiantes de graduación sobre la seguridad del paciente.
Método: Estudio transversal descriptivo realizado en 2015 con 638 estudiantes del Centro de Ciencias de la Salud, de la Universidad Federal de Santa Maria, RS, Brasil. Fue utilizado un cuestionario con variables relativas a la caracterización de los estudiantes, aspectos conceptuales y actitudinales sobre el error humano y la seguridad del paciente, online en el portal de estudiante.
Resultados: El mayor porcentual de estudiantes relató que no tuvo enseñanza formal sobre el tema. Se evidenciaron aspectos fundamentales para la cultura de seguridad, como la importancia del análisis sistemático del error, preocupación con el ambiente de trabajo y valoración del trabajo en equipo. Algunas actitudes demostraron incertidumbre para actuar correctamente.
Conclusión: Estudiantes demostraron percepciones favorables a la seguridad del paciente. La formalización del tema en los distintos niveles de enseñanza es necesaria.
Palabras clave: Seguridad del paciente. Estudiantes del área de la salud. Educación superior.

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■ INTRODUCTION

Patient safety has permeated many debates in the global health scenario, with the intention of institutionalizing best practices in patient care environments. Addressing this issue at various levels of education is fundamental to build the safety culture. Such action allows the development of skills throughout training, encouraging the students to have proactive mitigation attitudes when faced with health incidents.

In this context, the World Health Organization (WHO) has developed a multidisciplinary guide to the organization of patient safety curriculum to assist academic health institutions in the training of professionals in this field[1]. Still, the National Patient Safety Program (PNSP), launched in 2013 by the Ministry of Health (MS) reinforces this assumption because one of its goals is to foster the inclusion of patient safety in technical, undergraduate and graduate education in the health field[2].

The importance and challenge of training institutions to discuss and extend this theme to the academic and professional environment to implement actions that can prevent the occurrence of incidents in the provision of care was proven through this action.

In this perspective, students need to understand that failures happen, but that learning from the error is an essential strategy for safety. In face of this new point of view regarding safer care, health care courses have a key role since they enable the association of teaching and practice, risk identification and analysis, seeking strategies to improve work processes.

Changes in this scenario mainly happens through practice-theory aptitude derived from the knowledge and skills acquired from the training and perfected in the daily work of the health team. In this context, considering that the PNSP is recent, the inclusion of patient safety as a subject to be learned and practiced among students, especially for those in graduate courses, can still be considered fragile in training scenarios.

In addition, a literary review was performed by searching LILACS (Latin American and Caribbean Health Sciences), MEDLINE (System Search and Medical Literature Analysis) and Scopus (Elsevier) databases in June 2014, from which it was concluded there is a low percentage of Brazilian publications addressing the subject patient safety with university students [3]. When performed, it was mainly with nursing and medicine students.

In light of these considerations, the question is: what is the understanding of graduate health care students of a public university in the state of Rio Grande do Sul on patient safety? The next objective of the study was outlined based on this question: to check the understanding of undergraduate health care students on patient safety.

METHOD

This is a descriptive cross-sectional study carried out with students in the Health Sciences Center (CCS) of the Federal University of Santa Maria (UFSM), Rio Grande do Sul, extracted from the dissertation entitled "Patient safety in the understanding of graduate health care students"[3] presented to the UFSM Graduate Nursing Program (PPGEnf/UFSM) in 2016.

Two thousand and one hundred students (2,100) were enrolled when the study took place. Considering the estimated percentage of 50%, a sample error of 0.05 and a significance level of 5%, from the formula: $n = \frac{Z_{\alpha/2}^2 . \acute{p} . \acute{q} . N}{e^2 (N-1) + Z_{\alpha/2}^2 . \acute{p} . \acute{q}}$, a minimum 326 student sample was estimated. Complying with the proportional stratified sample of students per course, 638 students participated in the study.

Inclusion criteria were: being enrolled in one of the following course: nursing, medicine, dentistry, occupational therapy, physiotherapy and pharmacy and to have had contact with patients during practical classes or internships. Students younger than 18 years old were excluded. The selection was by convenience, i.e., students were told about the research and sensitized to access the search tool on the Student Portal. Access was free.

Data collection occurred from March to June 2015 through an *online* questionnaire available on the Student Portal. Before being initiated, several awareness strategies were conducted with students (classroom visits, banners, distribution of folders, *email* delivery and dissemination on social network) to promote the research and encourage student to participate in the study.

The questionnaire consisted of two parts. The first, relating to sociodemographic (sex, age, origin) and academic (semester course, if the student has scientific initiation scholarship, it has formal guidance on patient safety) questions. The second, consisting of 20 questions relating to conceptual (7) and attitudinal (13) aspects on human error and patient safety, built by Brazilian researchers[4]. These questions were measured by the *Likert scale* and responses varied: strongly agree, agree, disagree, strongly disagree and have no opinion.

Data were collected after authorization was provided by the authors of the instrument, agreement by the undergraduate courses' coordination and approval by the Ethics Committee of the Federal University of Santa Maria (CEP/UFSM) under CAAE (Certificate of Presentation for Ethics

Assessment) No. 40248714.4.0000.5346. The database was organized in an Excel® spreadsheet and analyzed in the *Predictive Analytics Software® program,* using descriptive statistics. Results are presented as absolute (n) and relative (%) frequencies.

All the requirements contained in National Health Council Resolution 466/2012 were met, ensuring the voluntary nature of each person's participation, their anonymity and confidentiality of the data. The Free and Informed Consent Form was made available *online,* along with the questionnaire.

■ RESULTS

The sample consisted of 638 students enrolled in the first half of 2015, whereas 101 were from the nursing course (15.8%), 167 were medical students (26.2%), 65 were studying Physical Therapy (10.2%), 76 were enrolled in Dentistry (11.9%), 83 in Occupational Therapy (13%), 34 in Speech Therapy (5.3%) and 112 in Pharmacy (17.6%).

Female students (n = 496; 77.7%), aged between 18 and 22 years (n = 358; 56.1%) and from cities in Rio Grande do Sul (84.8%) prevailed. As for the academic profile, students of the seventh, third, fifth and sixth semesters were those with

largest participation in the survey. When asked about having had a formal patient safety discipline in the course, 64.3% (n = 410) answered no. As for the academic scholarship, 42.6% (n = 272) answered yes. Among these, 14.7% (n = 94) were students with tuition scholarships and 13.3% (n = 85), were students from the research mentorship program.

Table 1 presents the distribution of students' responses on the conceptual aspects related to human error and patient safety.

Regarding the conceptual aspects, most students disagree that making mistakes in health care is inevitable and that competent professionals and committed students do not make mistakes. A higher percentage agrees that there is a big difference between what the professionals know to be right and what is seen in practice, and that when the error occurs, all of those involved should discuss the event.

Table 2 shows the distribution of students' responses on attitudinal aspects related to human error and patient safety.

Regarding the attitudinal aspects, students agree that workers should not tolerate working in places that do not offer suitable work conditions (285; 44.7%), agree or strongly agree that to implement preventive measures a systemic analysis of the facts should always be held (551; 86.4%) and that preventive measures need to be taken whenever any-

Table 1 – Distribution of students' answers on the conceptual aspects related to human error and patient safety. Rio Grande do Sul, Brazil, 2015. (n=638)

Conceptual aspects	SD		D		NO		A		SA	
	N	%	N	%	N	%	N	%	N	%
Making mistakes in health care is inevitable.	69	10.8	**305**	**47.8**	32	5.0	203	31.8	29	4.5
There is a big difference between what the professionals know as being right and what is seen in daily health care practices.	7	1.1	81	12.7	31	4.9	**374**	**58.6**	145	22.7
Competent professionals do not make mistakes that cause harm to patients.	34	5.3	**354**	**55.5**	29	4.5	182	28.5	39	6.1
Committed students do not make mistakes that cause harm to patients.	40	6.3	**353**	**55.3**	37	5.8	175	27.4	33	5.2
In the presence of an error, all involved (professionals, students, managers, patient and family) should discuss the event.	3	0.5	33	5.2	27	4.2	280	43.9	**295**	**46.2**
For the human error analysis, it is important to know what the individual characteristics of the professional who made the mistake are.	13	2.0	92	14.4	88	13.8	**351**	**55.0**	94	14.7
After an error occurs, an effective prevention strategy is to work more carefully.	1	0.2	31	4.9	21	3.3	**311**	**48.7**	274	42.9

Source: Research Data, 2015
Key: SD – Strongly Disagree D – Disagree; NO – I have no opinion; A – I agree; SA – Strongly Agree.

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Table 2 – Distribution of student responses on attitudinal aspects related to human error and patient safety. Rio Grande do Sul, Brazil, 2015. (n=638)

Attitudinal aspects	SD		D		NO		A		SA	
	N	%	N	%	N	%	N	%	N	%
Professionals should not tolerate working in places that do not offer suitable conditions for patient care.	16	2.5	79	12.4	57	8.9	**285**	**44.7**	201	31.5
A systemic analysis of the facts should always be performed to implement human error prevention measures.	2	0.3	11	1.7	74	11.6	**401**	**62.9**	150	23.5
It is necessary to implement systemic error analysis in the health field. but preventive measures need to be taken whenever anyone is injured.	5	0.8	48	7.5	73	11.4	**369**	**57.8**	143	22.4
I always inform my professor about the presence of conditions that favor the occurrence of errors.	7	1.1	46	7.2	107	16.8	**321**	**50.3**	157	24.6
I always inform the professor/manager/person responsible for the internship location about the occurrence of an error.	4	0.6	34	5.3	91	14.3	**332**	**52.0**	177	27.7
I always communicate the occurrence of an error to my colleague.	9	1.4	67	10.5	78	12.2	**358**	**56.1**	126	19.7
I always communicate the occurrence of an error to the patient and his family.	12	1.9	122	19.1	**175**	**27.4**	254	39.8	75	11.8
If no damage occurs to the patient, a need to report the occurrence of the error to the patient and family should be analyzed.	33	5.2	129	20.2	120	18.8	**303**	**47.5**	53	8.3
Professors always perform corrective actions with the student so that he or she will not make new mistakes.	33	5.2	148	23.2	116	18.2	**243**	**38.1**	98	15.4
Systems to report the occurrence of errors make little difference in reducing future errors.	184	28.8	**310**	**48.6**	77	12.1	55	8.6	12	1.9
Only doctors can determine the cause of the error.	**286**	**44.8**	280	43.9	51	8.0	14	2.2	7	1.1
I always perform internship activities in places that promote good practices for the promotion of patient safety.	38	6.0	158	24.8	183	28.7	**207**	**32.4**	52	8.2
Whenever I identify situations that need improvement, I receive support from the institution to implement measures to promote safe practices.	87	13.6	**199**	**31.2**	216	33.9	110	17.2	26	4.1

Key: SD – Strongly Disagree D – Disagree; NO – I have no opinion; A – I agree; SA – Strongly Agree.

one is injured (512; 80.2%). Most disagree or strongly disagree (494; 77.4%) that systems for reporting errors make little difference in reducing future errors. Regarding the question always conduct practical classes in local places that promote good practice responses, the answers do not show a consensus regarding agreement (207; 32.4%) and disagreement (158; 24.8%), just as there was no consensus about whether when they identify situations that need improvement they are fully supported by the institution in implementing safety measures.

■ DISCUSSION

The results showed a predominance of female students aged between 18 and 22 years, corroborating the study conducted at the Federal University of Triangulo Mineiro, that showed 89% of female participants and 34% at 18 years of age[5]. This predominant female profile also reflects the inclusion of women in the work market of professions recognized for being female market[6].

Regarding the presence of a formal discipline in the curriculum, although students do not have a discipline on patient safety, most of them showed favorable perceptions of safety, corroborating the results of other studies [4,6-7]. Such evidence indicates a cross-thematic approach of the evaluated courses in which teachers, although informally, have been keen to develop the theme.

However, research has identified that patient safety tends to be implicit in the curriculum; learning occurs predominantly in isolation and with little chance of interprofessional exchange[8]. Therefore, establishing formal curriculum in patient safety is essential for training[7].

When performing the analysis of students' responses regarding the conceptual aspects, it became clear that in the affirmative making *mistakes in healthcare is inevitable* and *competent professionals and committed students do not make mistakes that cause harm to patients*, there was a higher percentage of discordant responses. This leads to the perception that mistakes can happen to any professional or students, but can be prevented through strategies for patient safety. However, a considerable number of students agreed with these statements revealing a still traditional view of human error, with focus being put on the individual and blame on the professional[9].

The perception of the possibility that the error can happen constitutes the first step to strengthen the safety actions in education. Discussing the mistakes of students is also a way of learning, as these can happen during training[10]. Thus, incorporating a safety culture in early training helps the student to recognize faults and learn with them[11].

Historically, health care courses work in view of assertiveness, considering that teachers teach students what is right, virtually excluding the possibility of error. This approach, to some extent, affects the safety culture, since the hospital is complex and presents many health risks, such as overcrowding, inadequate working conditions, complex treatments, advanced technologies that require updating and constant attention, among others.

Thus, if this chain of factors that are necessary to establish a safety culture is explored from the beginning of training, the better the results of these professionals after graduation, resulting in effective actions for safe care[12]. The training process undergone by professionals should include technical and scientific knowledge, which enable them to intervene in the health/disease process through tools that ensure the quality of health care. One of them is the PNSP, which indicates guidelines and safety protocols for the development of safe practices[2].

Most students agreed that, in the presence of an error, this should be discussed among all stakeholders, including professionals and managers. The incident analysis is an extremely important moment, since together reflections and the construction of action strategies can take place. In this process, it disseminates the principle that the incident is opportunistic, but can be avoided by reviewing work processes and collective establishment of a secure system.

A higher percentage of them agreed or strongly agreed (519; 81.3%) that there is a difference between what the professionals know to be right and what is seen in day-to-day health care practices. A higher percentage (91.6%) was shown in a study conducted at UNIFESP with nursing and medical students[4]. These results are corroborated by a study conducted with nursing students at a university in São Paulo, which revealed that many of the improved tactics in patient safety addressed in undergraduate courses were observed in hospital practice settings[13].

This analysis reflects the existing disconnect between theory and practice, a fact further evidenced in educational institutions. Therefore, a pedagogical proposal that is transformational in nature cannot ignore the theory/practice concurrency and should consider the reality of services, different epidemiological profiles, the work of health professionals and health conditions of the population[14].

A study evaluating the pedagogical projects (PPs) of health courses determined that the teaching on patient safety was fragmented, lacking depth and conceptual breadth and yet it was realized that each course values the specific aspects for the training it wants to give[15]. In this regard, authors point to the importance of patient safety

teachers acting as course coordinators[8], as well as a review of the pedagogical model adopted[10].

In this perspective, it is considered that not only the academic environment, but practical scenarios also have responsibility in the education of students. It is not enough to learn best practices for patient safety in the classroom if, when faced with the reality of health care, the student finds an inflexible system that does not use or under-utilizes the care protocols. In this context, it is common for students to question themselves about why teachers require compliance protocols, if in practice, some professionals do not follow them.

In addition to the classroom environment and practice example, changing individual and collective behavior and the presence of professionals who serve as a model to be followed are fundamental to learning in patient safety. This because it helps students develop and maintain a consistent safety ideal in mind[8]. Still, strengthens behavioral and attitudinal changes in their health team, qualifying the work processes. With this, the more positive examples students have during training, the greater the chances of proactivity in those who have recently graduated.

Most students agreed that it is important to know the individual professional characteristics of the professional who made the mistake *to* analyze the human error and that, once an error occurs, an effective prevention strategy is to work more carefully. Generally, the errors are related to several factors that corroborate for this to happen[9].

Therefore, it is understood that the more the students understand the issues that are involved in the error, the more they will know the importance of reporting and analyzing incidents as a means of prevention. The curriculum should therefore be developed through teaching and learning activities in which the student and the educator experience significant practices that resonate in a safe performance over training and that are also sustained in professional practice [16]. This understanding enables students to establish proactive attitudes as assistance in developing strategies to control risk.

It is known that health services are often stress promoters. It is common to see professionals working in more than one service. Furthermore, there are students that besides the theoretical / practical classes, are also research mentorship students or have a job. Both situations can cause fatigue, decreased concentration and sometimes sleep deprivation. These are factors that can contribute to the occurrence of errors in care.

Another factor that cannot be ignored is that in some health institutions a culture of fear still exists, with the main action being to punish the professional who made the mistake. The safety culture works from the perspective of how an error happened and not who committed it. In addition, we need to change a punitive environment for a fair and transparent culture, enabling an approach that recognizes the causes of the incident and establishes strategies to prevent or minimize errors in health care[2].

The patient safety culture also provides for the safety of the professional, which has been considered as the second victim when an adverse event takes place. This is because society and the media mainly reinforce the negative effects of facts and, in many situations, massacre the professionals who lead the care. The term 'second victim' refers to the health care professional who suffers emotional distress due to an adverse event. A study held with health professionals involved in incidents revealed that they had emotional reactions such as shock, sadness, anxiety, and many said they mentally relived the sequence of events continuously[17].

Regarding the responses that refer to attitudinal aspects, most agreed (401; 62.9%) that, *to implement measures to prevent human error, one should always establish a systemic analysis of the facts.* Visualizing this perspective in the student is very important as it indicates greater future possibility of changing the individual assessment model for an expanded evaluation model, supporting the safety culture.

Most of them agreed that they always inform a colleague, professor/person responsible for the internship location on the occurrence of an error, and that professors always perform corrective action with the student so that the student does not make new mistakes. In this regard, the preparation of teachers should be contemplated, because although it is a professional with extensive experience in their specialty and work field, they have a role as a trigger agent in the health system process improvement[15]. It is worth reflecting on the professor's/supervisor's role of facilitator in the learning process, i.e., to help students understand what happened within the complexity of the care process; providing freedom of expression and helping them in the process related to the transforming action.

Given the occurrence of an adverse event, the PNSP recommends an educational practice in which all stakeholders discuss and learn together [18]. It is important that there be trivialization of error, but the reflection of the reasons that led to the incident and what strategies to be implemented to prevent recurrence[2]. To do this, the faculty also needs to have knowledge and attitudes that contribute to safety, because the way the situation will be conducted may produce different effects on the student. As for professionals, students can suffer a traumatic experience because of failure in the care process. As a consequence is the omission of information, withdrawal from classes caused by a

feeling of guilt and even abandonment of the course. This approach discourages the construction of a safety culture.

In the affirmation, *I always communicate the occurrence of an error to the patient and his family* it was shown that 254 (39.8%) students agreed and 175 (27.4%) had no opinion. In addition, 303 (47.5%) students also agreed that *if no damage occurs to the patient, a need to report the occurrence of the error to the patient and family should be analyzed*. Adopting transparent communication[10] on the occurrence of an error is not easy. To minimize stress and develop behavior that favors sharing information, research suggests, among other strategies, that a mentoring and teaching system on sharing information be created for medical students and doctors who have recently graduated[19].

About the systems used to report the occurrence of errors making little difference in the reduction of future errors, there were disagreements among the highest percentage of students (310; 48.6%). These scholars have a correct understanding that the systems are tools that enable decision making for the implementation of improvements in work processes and therefore should be used by health services to assess and monitor complications in the provision of care. However, limitations to this method can be found in the underreporting due to time constraints, lack of appropriate information systems, fear of litigation, the reluctance of people to report their mistakes, lack of knowledge about the importance of the events, and the lack of change after notification [20]. Permanent education and encouragement to notify errors should be common guidelines of both the academy and the NSP.

Most students disagreed with the statement that *only doctors can determine the cause of the error*, which shows a change of paradigm centered care in the doctor, entering other professions in this scenario. Patient safety crosses the daily life of all professions, through the sharing of responsibilities, adherence to protocols, effective communication, among others.

A higher percentage of college students in this study agreed (285; 44.7%) that professionals should not tolerate working in places that do not provide adequate conditions for the care provided, and there was no consensus on the question *I always perform internship activities in places that promote good practices for the promotion of patient safety*. This perception reflects the concern with practical scenarios and questions about the effective safety of these sites, which is an important concern to reflect on teaching, because the environment can also interfere with patient safety.

Half of the students responded that *I always inform my professor about the presence of conditions that favor* (321; 50.3%). This diagnosis and communication are essential to prevent incidents. However, a higher percentage had no opinion (216; 33.9%) on the assertion *whenever I identify situations that need improvement, I receive support from the institution to implement measures to promote safe practices*. This is an evident reality in health institutions, due to problems of institutional, managerial or financial nature.

In this respect, the recent integration of safety cores in health institutions has allowed for environments promoting socialization, claims and dissemination of patient safety culture to arise. This has allowed the services and managing an ongoing review of work processes, the improvement of care practices and the search for improvements in health services, including training students to integrate practice scenarios.

■ CONCLUSION

The study made it possible to verify the perception of undergraduate health care students, which highlighted key aspects of the safety culture, and the importance of performing a systemic analysis of the error, the concern regarding the work environment and appreciation of teamwork, aspects that were considered by students of several professions. An important fact to be observed in students, as future professionals, participants of health care teams, and that should constitute their aggregate and articulate actions with other professionals focused on safety, not just medical and nursing professionals.

Awareness of teachers and health professionals to this safety culture is necessary so that they can instrumentalize students to actively experience the transition from a punitive culture to one that stimulates a just, transparent culture that recognizes and detects failures and adverse events as a possibility of instituting structural and educational measures to combat unsafe care.

As a possible limitation to the study is the emphasized difficulty of comparing the data because there are no studies including all health care students. The publications were concentrated in nursing and medicine courses. This aspect reflects a gap in knowledge and perhaps the misperception that these are the professions that are more involved in incidents.

On the analysis of data, and a possible limitation of the instrument, emphasis is made that it is not valid to analyze the levels of understanding (high/moderate/low) on the knowledge and attitudes of students, which could provide an inferential statistical analysis, with a correlation or association study. In this sense, they suggest new studies with the instrument for the establishment of scores and cut-off points for the two dimensions evaluated.

A study to assess the internal consistency of the instrument is also suggested, with factorial analysis of the items and dimensions proposed.

Studies in this theme contribute to integrate and strengthen it within teaching, research and extension in their various levels, because it brings important insights for program coordinators, teachers and students about the skills that should be developed during one's academic life, strengthened and deepened daily to ensure safe and quality health care.

■ REFERENCES

1. World Health Organization (CH). Patient safety curriculum guide: multi-professional edition. Geneva: WHO. 2011 [cited 2013 Jul 31]. Available from: http://apps.who.int/iris/bitstream/10665/44641/1/9789241501958_eng.pdf.

2. Ministério da Saúde (BR). Portaria n. 529, de 1º de abril de 2013. Institui o Programa Nacional de Segurança do Paciente. Diário Oficial da União [da] República Federativa do Brasil. April 2013. 04;150(62 Seção 1):43-4

3. Cauduro GM. Segurança do paciente na compreensão dos estudantes da graduação da área da saúde [dissertação]. Santa Maria: Universidade Federal de Santa Maria; 2016.

4. Yoshikawa JM, Sousa BEC, Peterlini MAS, Kusahara DM, Pedreira MLG, Avelar AFM. Compreensão de alunos de cursos de graduação em enfermagem e medicina sobre segurança do paciente. Acta Paul Enferm. 2013;26(1):21-9.

5. Nardelli GG, Gaudenci EM, Garcia BB, Carleto CT, Gontijo LM, Pedrosa LAK. Perfil dos alunos ingressantes dos cursos da área da saúde de uma universidade federal. REAS. 2013;2(1):3-12.

6. Nascimento SD. Precarização do trabalho feminino: a realidade das mulheres no mundo do trabalho. 2014 [cited 2016 sept 2];14(8):39-56. Available at: http://periodicos.ufes.br/temporalis/article/view/6779/6145.

7. Nabilou B, Feizi A, Seyedin H. Patient safety in medical education: students' perceptions, knowledge and attitudes. PLoS ONE. 2015; 0(8):e0135610. doi: http://dx.doi.org/10.1371/journal.pone.0135610.

8. Cresswell K, Howe A, Stevan A, Smith P, Ashcroft D, Fairhurst K, et al. Patient safety in healthcare preregistration educational curricula: multiple case study-based investigations of eight medicine, nursing, pharmacy and physiotherapy university courses. BMJ Qual Saf. 2013;22(10):843-54. doi: http://dx.doi.org/10.1136/bmjqs-2013-001905.

9. Pereira SR, Harada MJCS, Pedreira MLG, Peterlini MAS. O erro humano e a segurança do paciente. São Paulo: Atheneu; 2006.

10. Bohomol E, Cunha IC. Ensino sobre segurança do paciente no curso de medicina da Universidade Federal de São Paulo. 2015 [cited 2016 jan 3];13(1):7-13. Available at: http://www.scielo.br/pdf/eins/v13n1/pt_1679-4508-eins-13-1-007.pdf.

11. Wegner W, Silva SC, Kantorski KJC, Predebon CM, Sanches MO, Pedro ENR. Educação para cultura da segurança do paciente: implicações para a formação profissional. Esc Anna Nery. 2016;20(3):e20160068. doi: http://dx.doi.org/10.5935/1414-8145.20160068.

12. Ilha P, Radünz V, Tourinho FSV, Marinho MM. Segurança do paciente na percepção de acadêmicos de enfermagem. Cogitare Enferm. 2016;21(n.esp):01-10. doi: http://dx.doi.org/10.5380/ce.v21i5.43620.

13. Bogarin DF, Zanetti ACB, Brito MFP, Machado JP, Gabriel CS, Bernardes A. Segurança do paciente: conhecimento de alunos de graduação em enfermagem. Cogitare Enferm. 2014;19(3):491-7.

14. Nietsche EA, organizadora. O processo educativo na formação e na práxis dos profissionais da saúde: desafios, compromissos e utopias. Santa Maria: Ed. UFSM; 2009.

15. Bohomol E, Freitas MAO, Cunha ICKO. Ensino da segurança do paciente na graduação em saúde: reflexões sobre saberes e fazeres. Interface (Botucatu). 2016 [cited 2016 jan 2];20(58):727-41. Available at: http://www.scielo.br/scielo.php?pid=S1414-32832016000300727&script=sci_abstract&tlng=pt.

16. Urbanetto JS, Gerhardt LM. Patient safety in the healthcare education research triad. Rev Gaúcha Enferm. 2013;34(3):8-9. doi: http://dx.doi.org/10.1590/S1983-14472013000300001.

17. Ullström S, Sachs MA, Hansson J, Øvretveit J, Brommels M. Suffering in silence: a qualitative study of second victims of adverse events. BMJ Qual Saf. 2014;23(4):325-31.

18. Ministério da Saúde (BR), Fundação Oswaldo Cruz (BR), Agência Nacional de Vigilância Sanitária (BR). Documento de referência para o Programa Nacional de Segurança do Paciente. Brasília: Ministério da Saúde; 2014.

19. Renkema E, Broekhuis MH, Ahaus K. Explaining the unexplainable: the impact of physicians' attitude towards litigation on their incident disclosure behaviour. J Eval Clin Pract. 2014;20(5):649-65. doi: http://dx.doi.org/10.1111/jep.12194.

20. Lorenzini E, Santi JAR, Báo ACP. Patient safety: analysis of the incidents notified in a hospital, in south of Brazil. Rev Gaúcha Enferm. 2014 jun;35(2):121-7. doi: http://dx.doi.org/10.1590/1983-1447.2014.02.44370.

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