Objective: Identifying the iatrogenic complications related to nursing care in the emergency sector of a public hospital. Method: this is a descriptive study with a quantitative approach, carried out in a public hospital in the city of Recife, Pernambuco, Brazil, with 263 nursing professionals. Data collection was conducted through a questionnaire, in four stages: pre-test, instrument application, direct observation, and identification of iatrogenic complications. Data were analyzed in the software Epi-Info, version 3.3.2. The study was approved by the Research Ethics Committee of Hospital da Restauração, under the CAAE 0096.0.102.000-09. Result: the distribution of iatrogenic complications related to the procedure executor is more frequent in procedures performed by nursing assistants. Conclusion: the importance of in-service education for nursing professionals is regarded as a mainstay to the effective care for patients; through an education process which is updated and coherent with the unit’s specific needs, it keeps the team valued and able to present a good professional performance. Descriptors: Iatrogenic Disease; Emergency Nursing; Medication Errors; Nursing Education.

RESUMO
Objetivo: identificar as complicações iatrogênicas relacionadas à assistência de enfermagem no setor de emergência de um hospital público. Método: trata-se de um estudo descritivo, com abordagem quantitativa, realizado em hospital público na cidade do Recife-PE com 263 profissionais de enfermagem. A coleta de dados foi realizada por meio de um questionário, em quatro etapas: pré-teste, aplicação do instrumento, observação direta e identificação das complicações iatrogênicas. Os dados foram analisados no programa Epi-Info, versão 3.3.2. O estudo foi aprovado pelo Comitê de Ética em Pesquisa do Hospital da Restauração, sob o CAAE n. 0096.0.102.000-09. Resultado: a distribuição das complicações iatrogênicas relacionadas ao executor do procedimento é mais frequente nos procedimentos executados pelos auxiliares de enfermagem. Conclusão: a importância da educação em serviço para os profissionais de enfermagem é vista como um estímulo para a assistência eficaz aos pacientes; por meio de um processo educativo atualizado e coerente com as necessidades específicas da unidade, ela mantém a equipe valorizada e capaz de apresentar bom desempenho profissional. Descriptores: Doença iatrogênica; Enfermagem em Emergência; Erros de Medicação; Educação em Enfermagem.

RESUMEN
Objetivo: identificar las complicaciones iatrogénicas relacionadas con la atención de enfermería en el sector de urgencia de un hospital público. Método: esto es un estudio descriptivo, con abordaje cuantitativo, realizado en un hospital público de Recife, Pernambuco, Brasil, con 263 profesionales de enfermería. La recogida de datos fue realizada por medio de un cuestionario, en cuatro etapas: pre-prueba, aplicación del instrumento, observación directa e identificación de las complicaciones iatrogénicas. Los datos fueron analizados en el programa Epi-Info, versión 3.3.2. El estudio fue aprobado por el Comité de Ética en Investigación del Hospital de la Restauración, bajo el CAAE 0096.0.102.000-09. Resultado: la distribución de las complicaciones iatrogénicas relacionadas con el ejecutor del procedimiento es más frecuente en los procedimientos ejecutados por los auxiliares de enfermería. Conclusión: la importancia de la educación en servicio para los profesionales de enfermería es vista como uno de los pilares para la atención eficaz a los pacientes; por medio de un proceso educativo actualizado y coherente con las necesidades específicas de la unidad, ella mantiene el equipo valorado y capaz de presentar un buen desempeño profesional. Descriptores: Enfermedades iatrogénicas; Enfermería de Urgencia; Errores de Medicación; Educación de Enfermería.
Ramos EM.

INTRODUCTION

The concept of iatrogenic disease varies according to the authors, having a broader sense to some and a more restrict sense to others. Iatrogenesis in care is the imposition or unsatisfactory provision of them so that they would determine any inconvenience, damage, or loss to the well-being of a human being. It’s observed that the emergency hospital services constituted themselves, in the last decade, as a location where the population, usually, looks for solutions to their health needs; thus, one can realize that the search for emergency services occurs to the detriment of other services and it’s intimately related to the distortions of the current health system and their implications.

In a simplified way, one may say that the Brazilian Unified Health System (SUS) proposes a model in which all citizens, regardless of their socioeconomic status, have the right to access health care services and be cared for so that their needs are met in an integral manner, in a hierarchical network according to complexity of the assistance.

This is a descriptive study, with a quantitative approach, carried out at Hospital da Restauracao, which belongs to the Health Council of the State of Pernambuco, in the city of Recife and it’s a reference in emergency care.

In this unit, any iatrogenic occurrence becomes not only undesirable, but harmful, giving rise to the issue of quality of care and the context in which it happens, something which inevitably leads to the evaluation of health care services. One observes that excessive interventions, medications, and examinations, many of them unnecessary, commonly cause physical and psychological iatrogeneses to patients. In this context, addressing iatrogeneses in emergencies is covered with a particular importance, especially when one takes into account that the detection of deviations in quality during an analysis of the process and not the final product implies attitudes to prevent failures.

METHOD

This is a descriptive study, with a quantitative approach, aiming to identify the iatrogeneses related to nursing care in the emergency sector. The population consisted of professionals working at the adult emergency sector of Hospital da Restauracao, in the city of Recife, Pernambuco, Brazil; they have attended courses to care for the traumatized patient, BLS, TLSN, ACLSN, and PHTLS, in the past four years, perform nursing procedures in the emergency sector. The choice of this institution was due to the fact that it’s part of the research field of the program of residency in general emergency. The study had the participation of 263 nursing professionals (nurses, nursing technicians, and nursing assistants).

The data were collected through a questionnaire, divided into two parts: 1) characterize the socioeconomic profile; and 2) address iatrogenic complications, according to Beckman⁴, something which was performed through direct 24-hour observation after the procedure.

Regarding the ethical aspects, the study complied with the Resolution CNS 196/96, from the Brazilian National Health Council, with submission of the project to the Research Ethics Committee of Hospital da Restauracao, and all those involved in the study signed the free and informed consent term. The research was approved under the CAAE 0096.0.102.000-09, on 09/29/2009.

RESULTS

One observes that, out of the 263 professionals analyzed, 84.7% were women and 15.3% were men; with regard to the age group, one observes 52.3% aged between 30 and 40 years, 20.2% aged between 20 and 30 years, 15.2% aged between 50 and 60 years, and 12.3% aged between 40 and 50 years.
Table 2. Participation of nursing professionals refresher courses in emergency care. Recife, Pernambuco, Brazil, 2009.

<table>
<thead>
<tr>
<th>Courses attended</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLS</td>
<td>50</td>
</tr>
<tr>
<td>PHTLS</td>
<td>26.9</td>
</tr>
<tr>
<td>ACLSN</td>
<td>3.8</td>
</tr>
<tr>
<td>MAST</td>
<td>15.5</td>
</tr>
<tr>
<td>TLSN</td>
<td>3.8</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

At Hospital da Restauração, one observes that 50% of nursing professionals attended the course “Basic Life Support” (BLS) and “Prehospital Trauma Life Support” (PHTLS) was attended by 26.9% of nursing professionals.

When questioned with regard to the frequency with which nursing care is performed in accordance with the international protocols and flowcharts, many professionals informed they had never performed it (42.4%), 30.7% often performed it, and 26.9% rarely performed it.

Table 3. Nurses’ discretion according to priority in care provided for the initial assistance to the polytraumatic patient. Recife, Pernambuco, Brazil, 2009.

<table>
<thead>
<tr>
<th>Care priority</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vital signs measurement</td>
<td>25.2</td>
</tr>
<tr>
<td>Glasgow</td>
<td>33.3</td>
</tr>
<tr>
<td>Revised Trauma Score &lt; 12 points</td>
<td>8.3</td>
</tr>
<tr>
<td>Venous puncture</td>
<td>8.3</td>
</tr>
<tr>
<td>Oxygen administration</td>
<td>8.3</td>
</tr>
<tr>
<td>Airways opening</td>
<td>8.3</td>
</tr>
<tr>
<td>Orotracheal intubation</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 3 presents the priorities in initial care for the patient, with a prevalence of the Glasgow Coma Scale (33.3%), followed by the evaluation of vital signs (25.2%).

Regarding the organizational difficulties found in the emergency unit according to nursing professionals, one observes that 30.2% are related to insufficient number of employees, 22.2% to the insufficient number of beds, 7.5% to the emergency unit location, 5.5% to the presence of noise, 3.7% to the nursing station location, 2.3% to the clean and dirty utensils room location, 10.8% to the patients’ bathroom location, 3.7% to illumination, 4.5% to the gas and vacuum system, 7.5% to the severe patients hospitalized in unit, 2.3% to lack of specific clothing to be used within the unit.

When the distribution of iatrogeneses related to the procedure executor was addresses, it was found out that: 95.2% were performed by nursing assistants and 85.4% were performed by nursing technicians. One observes that 83% of the procedures performed by nurses had no iatrogeneses. The main iatrogenic complications related to the nursing procedures were:

- Regarding the venous puncture with a “Jelco” device: edema due to solution extravasation at site (31.7%), pain and irritation (33.3%), hematoma (8.3%), puncture in the opposite direction to blood flow (16.7%), and infusion of solution contrary to the medical prescription (10%). One highlights in nasogastric probing: hygiene and comfort (42%), positioning (24%), and nasal injury (34%).

- Regarding the administration of medicines: dosing errors (28.2%), dilution with inadequate amount of solution (3%), incorrect checking (10%), wrong time (12.8%), toxic and irritative effects of drugs in use (5%), unreadable prescription (12%), drug interaction (21%), and medicines not administered (8%).

DISCUSSION

The findings in this study are consistent with other studies, in which women predominate in nursing teams, something related to historical factors. One of the most remarkable movements which partly explain the sustained population growth, in spite of the crises due to the poor economic performance within the period, was the
massive entry of women into the labor market. Several scholars concerned with the issue have called attention to this phenomenon, also highlighting the increase in the activity rate of women with a higher education level. The age group from 30 to 40 years consists of the economically active population and responsible for the family budget. When one takes into account the total number of nurses and nursing technicians and assistants working at a highly specialized unit, in case, emergency under the adequate specialty title, the emergency nursing practice is entirely connected to clinical competence, performance, holistic care, and scientific methodology, thus, one stresses the importance of team’s continued education to act at this sector; however, in the reality of this study, there’s a need for focusing on all nursing categories, something which is real for those working at the emergence, since both the nurse and the nursing technician and assistant provide patients undergoing critical conditions with care and they need to be trained and updated, given the presence of high technology and constant challenge for the professional.

It’s known that the emergency nursing professional must be able to quickly recognize, diagnose, and perform maneuvers, instituting the appropriate treatment according to the use of flowcharts and internationally standardized protocols, which have been disseminated and used for learning in courses and training workshops. The importance of in-service education in an emergency nursing service with specific courses is regarded as a mainstay for effective care for the patient, since through an education process which is updated and consistent with the specific needs of the area, it keeps the team valued and able to present a good professional performance. The advanced trauma life support handbook advocates that all health professionals should know how to provide the support care, i.e. ABCDE (airways with cervical spine control, breathing and ventilation, circulation, and bleeding control, disability [neurological evaluation], and exposition with victim control).

The method used should be standardized, complete, and effective, not forgetting that history and examination may be obtained at the same time. The surveyed population proved to have as a priority the Glasgow Coma Scale assessment, which, according to the regulation proposed by advanced trauma life support (ATLS) is the next to last step in the planning of actions and the setting of the polytrauma patients’ priorities. The insufficient number of employees is one of the situations causing iatrogeneses, because it generates a bad work condition, so, the employee cares for a growing number of patients through a fast and low quality assistance.

One must remember that the facility’s physical conditions may influence the professional’s conduct. There’s an already consecrated justification that the health professional is a human being, like any other professional, and, therefore, she/he has the same opportunities to commit errors, although pertinent, it still doesn’t receive a due social support. In the Brazilian reality, the issue of structure, differently from what happens in the United States and Australia, where high standards are observed under periodic evaluation, presents considerable problems which need to be taken into account when investigating iatrogeneses occurrences.

The lack of resources to provide health care, ineffectiveness in services, the poor facility conditions, the lack of human resources and obsolete equipment are aspects much discussed in daily work. Thus, although studies point at the issue of the human factor in the occurrences, specific health care conditions in the national context lead to invest in investigation of the structural aspects, too. It’s also worth demonstrating that disorganization in the available staff, low wages, lack of opportunity for formal training workshops or even informal, individual and interdisciplinary ones, the lack of physical space management trigger the degradation process in the quality of emergency services, generating high rates of iatrogeneses in emergency units.

The nursing professional must remember her/his legal responsibility when performing a procedure that she/he hasn’t competence to; she/he should carefully evaluate her/his technical and legal competence and only accept tasks or attributions when she/he is able to perform them, in order to avoid iatrogenic complications to the patient. It’s noteworthy that several of these procedures are regarded as complex, but in spite of this there wasn’t a nursing register in the medical record. It’s known that there’s no reality in which less qualified nursing staff is used under the allegation that hiring a more skilled workforce becomes more costly to the institution, something which contributes to minimization of the nursing care quality and implies greater risks to the patient.
Thus, it’s observed that the theoretical and practical knowledge background of nurses and the other members of the nursing team, acquired during their training and through their own professional practice, influenced on the results. In the research, one observes that the most frequent errors in medicine administration, in general, are related to dosage errors, due to the difficulty for understanding certain medical prescriptions and the inexistence of nursing records which allow demonstrating whether the medicine has been administered, something which was also observed to be quite common that the nursing professional delegates to the patient or a relative the task of administering the medicine.

One should remember that failures are due to several reasons, ranging from training deficit, lack of experience, too long and fast verbal orders to unacceptable reasons, such as inattention and negligence. To prevent this from occurring, it’s needed that the hospital and nursing team create a safe system of medicine administration to patients. To prevent these undesirable effects, it’s recommended to use the nursing process, through an integrated or single nursing record containing the patient’s history data, addressing the issue of allergies, aiming its actions at a safe and qualified care. The causes of these errors are the most varied, broad and complex ones, and they often culminate in the ultimate process agent, i.e. the nursing professional.

The nurse must remember her/his legal and ethical responsibility with regard to the invasive procedures which are delegated to her/him. Researches demonstrate the nursing professionals’ lack of knowledge, such as identifying the sites and the status of veins, the size and type of catheter to be used during puncture, the type of liquid, the volume, the ratio, and the duration of infusion, the desired patient’s mobility degree, and the application.

Regarding the nasogastric probing as a technique seemingly ordinary and constant in the emergency services, it’s known that nursing has a direct and effective participation, saying that when certain safety measures aren’t taken it may bring discomfort or even severe complications to the patient. Some nurses delegate this procedure to the other elements of the nursing team, so, the nasogastric tube isn’t adequately placed in the patient’s face, in order to pull the nose wing, thus, it doesn’t prevent ischemia or necrosis.

Often, the professional who performs the procedure doesn’t check through the gastric content aspiration or by means of auscultation of borborygmus in the epigastric region due to lack of training to execute the adequate procedure. The patient hospitalized at the emergency unit has specific care demands which must be met in order to be discharged from the unit and admitted to other intra-hospital units, without submitting her/himself to unnecessary risk and failures and so that she/he’s able not only to survive, but to have a good quality life.

The interventions adopted by the supervisors, in face of the occurrence of iatrogeneses in general, constitute punitive and individual censorship actions, verbal warning, reports, transfer to another sector, and possible dismissal from the institution. Rarely training workshops and refresher courses needed to prevent errors take place. Individuals are penalized according to the severity and consequence of the error to patient. The importance of in-service education for nursing points out ways to iatrogenic causes by encouraging scientific research and, this way, there’s a contribution to search for solutions so that they don’t occur again.

- Prevention and control actions of nursing professionals with regard to iatrogeneses

1. The nurse must have the ability to appropriately plan and coordinate work in emergency sectors.

2. Planning activities, according to the sector needs, in order to avoid problems both with human resources and material and equipment and, as a consequence, avoid crowding on the emergency sectors.

3. Maintenance of records of complications in a clear and objective way, without erasures or amendments, so that they can constitute evidence within the domain of Justice.

4. Before performing any procedure, personally make sure that all caring actions (personal, material, equipment) were taken and kept, with the systematization of appropriate care with regard to the sector’s reality.

5. Update the scientific and technological knowledge in the work area of emergency services, if there’s a doubt ask for opinions from specialists.

6. Educate and train health professionals, but also search for structural interventions which make the hospitalization experience be more comfortable for the patient.
7. Implement a quality management system which drives the institutional resources towards the construction of a paradigm on which they develop routines, procedures, processes, and methodologies in order to satisfy the patient.  

8. Implement intra-hospital screening teams (QualiSUS).  

9. Implement the classification screening, with a specific form aimed at the nurse, where the professional will record all information obtained and the performance of a pre-screening may greatly improve the sector’s routine.  

10. Embrace the patient, providing the environments of access to the units with a “gateway” – with a comfort aspect, a broad information supply, convenient signaling, facilitation of flows, comfortable waiting rooms, ease of telephone communication, assistance from the social service, agility in access to high severity or high complexity occurrences.  

11. Stimulate the notification of iatrogenic occurrences.  

12. Provide a continued education work to professionals, in order to avoid iatrogenic occurrences and improve the quality of services.  

13. Point out pathways for the iatrogenic causes by encouraging scientific research and, thus, help in the search for solutions so that they don’t occur again.  

14. Establish a functional and consciously driven epidemiology system, in order to better evaluate what are the iatrogenic situations and how often they occur.  

CONCLUSION

The analysis of 263 professionals from the nursing team with regard to the iatrogeneses in the emergency care at Hospital da Restauracao allowed one to draw the following conclusions:  

• Regarding the characterization: concerning the nurse, it was found out that 26 (74.3%) nurses are specialists, 144 (63.3%) are nursing technicians, and 84 (36.7%) are nursing assistants, they perform their work activities during daytime, there’s a predominance of women and the age group between 30 and 40 years, with 138 individuals (52.3%).  

• Regarding continued education: in the study one observes that the deficit of specific training workshops for the nursing team at the hospital level, such as Trauma Life Support and Advanced Cardiology Life Support, both for nurses, of paramount importance at a reference hospital in emergency. One observes that 182 individuals (69.3%) attended the course within a period above four years, and they must attend other courses according to the international requirement. One finds out that 111 individuals (42.4%) have never performed nursing care in accordance with the protocols ACLSN, PHTLS, and TLSN.  

• Regarding organizational difficulties found in the emergency unit to carry out a nursing care which favors the emergence of iatrogeneses: one observes that 79 individuals (30.2%) indicate the insufficient number of employees, which is one of the situations causing iatrogeneses, because it generates a bad working condition. In the research, the fact that only 4 individuals (8.3%) indicate the importance of nurse’s action to take the patient’s initial evaluation responsibility stands out.  

• Regarding the distribution of iatrogeneses related to the procedure executor: one finds out a higher incidence of iatrogenesis in the procedures performed by nursing assistants and the procedure complexity degree wasn’t taken into account having the professional category in mind.  

• Regarding the usual procedures in emergency: venous puncture with a “Jelco” device and iatrogenic complications related to pain and irritation at the site was indicated by 70 individuals (33.3%); 88 individuals (42%) indicated that the nasogastric probing procedures present complications in care with hygiene and comfort; and 59 individuals (28.2%) report dosing errors in the administration of intravenous/oral medicines.

REFERENCES


iatrogenic complications in the emergency...