

## Peripheral intravenous cannulation: analysis of undergraduate nursing student reports

Punção venosa periférica: análise dos registros de acadêmicos de enfermagem

Punción venosa periférica: análisis de los registros de estudiantes de enfermeira

**Samylle Pelaes da Mota<sup>1</sup>, Joice Silva do Nascimento<sup>2</sup>, Shirlane Priscilla Barbosa de Melo Azedo<sup>3</sup>, Camylla Cavalcante Soares de Freitas<sup>4</sup>, Alexandra Rodrigues Feijão<sup>5</sup>, Gabriela de Sousa Martins Melo<sup>6</sup>**

**Abstract:** **Aim:** To analyze undergraduate nursing students written report on peripheral intravenous cannulation procedure with catheter. **Method:** Quantitative, descriptive study, developed with 76 undergraduate nursing students at a public university, from February through March 2014. Data collection took place at simulated scenario and procedure reports were evaluated with a structured instrument. Descriptive analysis was performed. **Results:** About fragilities, 100% of the students did not wrote about catheter fixation in the report; The variables complications (87,3%), used device (85%) and reason for procedure (84,1%) were predominantly absent. Adequate date, time and identification were positive highlights. **Conclusion:** Technique registration discrepancies were identified, with essential information being absent or incomplete. This particular subject should be improved with an association between theory and practice, focusing on competence development at teaching environments. **DESCRIPTORS:** Nursing Records; Students, Nursing; Nursing Assessment; Catheterization, Peripheral

<sup>1</sup> Enfermeira. Graduada em Enfermagem pela Universidade Federal do Rio Grande do Norte (UFRN). Macapá, Amapá, Brasil. E-mail: samy\_pelaes@hotmail.com ORCID iD: <https://orcid.org/000-0002-3537-5406>

<sup>2</sup> Enfermeira. Graduada em Enfermagem pela Universidade Federal do Rio Grande do Norte (UFRN). Natal, Rio Grande do Norte, Brasil. E-mail: joicesilvadonascimento@outlook.com ORCID iD: <https://orcid.org/0000-0003-0469-660X>

<sup>3</sup> Enfermeira. Graduada em Enfermagem pela Universidade Federal do Rio Grande do Norte (UFRN). Natal, Rio Grande do Norte, Brasil. E-mail: shirlaneraposo@hotmail.com ORCID iD: <https://orcid.org/0000-0002-8879-6335>

<sup>4</sup> Enfermeira, Mestre em Enfermagem pela Universidade Federal do Rio Grande do Norte (UFRN). Foster City, Califórnia, Estados Unidos. E-mail: camyllafreitas\_@hotmail.com ORCID iD: <https://orcid.org/0000-0001-8508-4220>

<sup>5</sup> Enfermeira. Doutora em Enfermagem. Docente do Departamento de Enfermagem e do Programa de Pós-graduação em Enfermagem da Universidade Federal do Rio Grande do Norte (UFRN). Natal, Rio Grande do Norte, Brasil. E-mail: alexsandrarf@hotmail.com ORCID iD: <https://orcid.org/0000-0002-8686-9502>

<sup>6</sup> Enfermeira. Doutora em Enfermagem. Docente do Departamento de Enfermagem da Universidade Federal do Rio Grande do Norte (UFRN) Natal, Rio Grande do Norte, Brasil. E-mail: gabrielasm@outlook.com ORCID iD: <https://orcid.org/0000-0002-3096-2759>



**Resumo:** **Objetivo:** analisar os registros de acadêmicos de enfermagem sobre o procedimento de punção venosa periférica com cateter agulhado. **Método:** estudo descritivo, quantitativo, realizado com 76 acadêmicos de enfermagem do 5º ao 9º período de uma universidade pública, entre fevereiro e maio de 2014. Para coleta de dados desenvolveu-se cenário simulado com manequim, sendo avaliado o registro do procedimento mediante instrumento estruturado. Realizada análise descritiva. **Resultados:** quanto às fragilidades, 100,0% dos alunos não realizaram o registro sobre fixação do cateter; predominou ausência da informação sobre intercorrências (87,3%), dispositivo utilizado (85,7%) e motivo da punção (84,1%). Sobre os registros adequados, as variáveis data, hora e identificação sobressaíram positivamente. **Conclusões:** identificaram-se discrepâncias relacionadas ao registro da técnica, com ausência de informações essenciais e incompletas. Destaca-se a necessidade de trabalhar a temática em associação teoria e prática, com foco no desenvolvimento de competências no âmbito do ensino e assistência de enfermagem. **DESCRITORES:** Registros de enfermagem; Estudantes de enfermagem; Avaliação em enfermagem; Cateterismo periférico

**Resumen:** **Objetivo:** analizar los registros de estudiantes de enfermería sobre la punción venosa periférica con catéter con aguja. **Método:** investigación descriptiva y cuantitativa con 76 estudiantes de enfermería de una universidad pública desde febrero hasta mayo, 2014. Para la recolección de datos, se desarrolló un escenario simulado con maniquí. Y el registro del procedimiento se evaluó con un instrumento estructurado. Se realizó el análisis descriptivo. **Resultados:** en cuanto a las debilidades, el 100% de los estudiantes no registraron la fijación del catéter; predominaron la ausencia de información sobre complicaciones (87,3%), el dispositivo utilizado (85,7%) y el motivo de la punción (84,1%). En cuanto a los registros apropiados, las variables fecha, hora e identificación se destacaron positivamente. **Conclusiones:** hubo discrepancias relacionadas con el registro de la técnica y ausencia de información esencial e incompleta. Destacamos la necesidad de trabajar el tema en asociación de la teoría y la práctica, con foco en el desarrollo de competencias en la enseñanza y la atención de enfermería. **DESCRIPTORES:** Registros de Enfermería; Estudiantes de Enfermería; Evaluación en Enfermería; Cateterismo Periférico

## Background

The nursing report is a record of chronologically structured information regarding the patient events. It provides important information and that contributes to the healthcare team communication and the 24-hour continuity of care.<sup>1</sup> The patient's medical record holds important information such as the type of care and procedures performed and, therefore, is considered a legal document. In addition, the nursing documentation answers a need for a clear, concise and objective record, as it incorporates the set nursing's legal responsibilities.<sup>2</sup>

Nursing documentation differs from nursing report, as the first one refers to the evidence of the patient's health state in the last 24 hours, written exclusively by the nurse, since

it requires technical-scientific knowledge for reflection, analysis and contextualization of the collected data.

Nursing records have a fundamental role in the care process. They provide safe communication between nursing and other health professionals; contribute to the formulation of the care plan; assist in assessing the quality of services provided; represent a legal document for both the patient and the institution itself; and can be used for a variety of purposes related to teaching, research, ethical and judicial processes.<sup>2-3</sup>

The Resolution of the Federal Nursing Council (COFEN) No. 564/2017 Art. 36 of the Code of Ethics for Nurses establishes that it is the nurse's responsibility to register the procedures and care plan in the patient's medical record and other indispensable documents to the recovery process. In addition, it is the nurse's duty to record information regarding the patient's care plan in a clear, objective and complete manner.<sup>4</sup>

Despite the importance of the nursing record, there is, still a scarcity of information and a disregard concerning the written formalization process besides the lack of notes in the patient's medical record, which could bring damage the institution and/or the nursing care.<sup>5</sup>

Among the many procedures performed in the nursing care routine and that require attention when writing about it in the medical record is the peripheral intravenous cannulation (PIC). Implementation of intravenous therapy through PIC is a routine procedure in a healthcare facility and, when well executed, can assist the patient's rehabilitation.<sup>6</sup> In a punctual prevalence study on the management of intravenous catheters in Spain, 81.9% of patients admitted to a hospital had one or more catheters, of which 95.4% is of peripheral insertion and short duration. The importance of mastering the techniques resides in the fact that it is an invasive procedure.<sup>7</sup> Thus, it's use is not free of complications, the most common being phlebitis, infiltration, hematoma, thrombosis and thrombophlebitis. PIC represents one of the most used procedures in modern clinical care and is highlighted as one of the techniques widely developed by professionals and students in the specific classes of undergraduate nursing.<sup>8-9</sup>

PIC is characterized by the installation of a catheter inside the venous vessel, which may or may not be attached to the skin, and which requires care and periodic maintenance in case of long permanence. It also requires technical competence and dexterity for its execution, as well as basic knowledge of anatomy, physiology, microbiology, pharmacology, psychology, among others.<sup>8</sup>

Effectiveness in performing the venipuncture technique requires knowledge and skills acquired throughout the graduation through theoretical and practical classes – basic requirements for health professionals who perform procedures with such complexity. However, in addition to dexterity in the development of the PIC technique, it is also necessary to register this procedure in the medical record properly.

Inadequate filling or non- implementation of these records causes consequences for patient care, damage to the health service and difficulties to evaluate the care offered. These can occur since the communication process between the medical team is disrupted, interfering with the quality and safety of the care provided.<sup>10</sup>

Therefore, this study is justified due to the importance of the quality of nursing records in the process of the student's education to reach professional status. In addition, the considerations obtained in this work serve as a reflection on the educational methodologies in higher education.

Given the importance and complexity of the procedures performed by nurses, a research question emerged: what is the quality of the records made by nursing students on the IC technique? Thus, this study aimed to analyze undergraduate nursing students written report on peripheral intravenous cannulation procedure with catheter.

## **Method**

This is a descriptive study with a quantitative approach, conducted at the School of Nursing of the Federal University of Rio Grande do Norte (UFRN), from February to May 2014. The research is part of a master's degree research that sought to evaluate knowledge and skills in nursing semiology and nursing techniques in a simulated environment.

The School of Nursing at UFRN offers the undergraduate nursing major with a curriculum of nine semesters and is equipped with two skills' labs, of which a scenario for this research was structured. This simulated scenario had all the material needed to develop the practice of peripheral intravenous cannulation. The procedure was performed in the advanced model 45 CWA Simula Care® advanced patient care and airway management simulator, in its' specific arm, using real technique simulation, in which its structures resemble the human venous system, in addition to the use of artificial blood.

Students were invited to perform the simulation with a patient simulator according following inclusion criteria: to be regularly enrolled in the undergraduate Nursing major at UFRN and present at the School of nursing during data collection; have attended the nursing semiology and techniques class. And, as an exclusion criterion, those academics who did not completed the simulation during data collection process.

A systematic sample was used, which sought to reach 50% of each class. For participant selection, the alphabetized and numbered class frequency lists of all students enrolled in the first semester of 2014 was used. Academics with odd numbers participated in the IC simulation. Thus, 76 students composed the sample. The inclusion of half of each class is justified, since the other students performed other nursing procedures associated with the Masters' research previously mentioned.

An instrument to evaluate the students' performance in writing the report was created. It was composed by the following fundamental items: day and hour; reason why the student performed the PIC; puncture site; device used; medicine used; fixation; complications and identification and professional registration number or student signature. All items followed the Recommendations Guide for Nursing Records and the Nursing Federal Council regarding how to properly register the performance of PIC.<sup>1-3</sup> In addition, information about sociodemographic profile and professional experience was collected through a questionnaire applied before the simulation.

In the simulated scenario a fictitious medical record containing nursing care plan, medical prescription with drugs and procedures was available, as well as a nursing record form, and all the necessary material to perform the PIC. The medical prescription had two medications that should be administered and, as part of the evaluated technique, the student should write the report of the procedure on the record sheet.

Microsoft Excel® 2010 spreadsheets was used to organized data and a descriptive analysis was performed, using relative and absolute frequency, and the results were presented in table and graph format.

The study was approved by the Research Ethics Committee of the Onofre Lopes University Hospital, under protocol N°. 380/09 (CAAE No. 0002.0.294.000-10). The authorization of the head of the School of Nursing was requested for data collection and laboratory use. of skills. In time, all students who met the study inclusion criteria and who agreed to participate voluntarily signed the Informed Consent Form.

## Results

Of the 76 nursing students who performed the simulated PIC with catheter, 70 (92.1%) were female and 63 (82.9%) were single. Regarding the period in the course, 16 (21.0%) were students of the 5th semester; 17 (22.4%) of the 6th; 13 (17.1%) of the 7th; 17 (22.4%) of the 8th; and 13 (17.1%) from the 9th semester. Regarding previous experience in health, 13 (17.1%) had some experience before graduation, 10 (13.2%) had training as a nursing assistant and 5 (6.6%) had worked in the health area.

Considering the 76 participants, 63 students wrote the report about the procedure (88.2%), of these 59 (93.7%) made the report in the right format and only 22 (34.9%) wrote that they've performed drug administration according to the medical prescription. Regarding student performance as classified by semester, as shown in Figure 1, we highlight the students of the 6th semester that in 100.0% of the simulations performed the correct report. As for the lower percentage of adequacy, only 13 of the 8th semester students performed a correct report (76.5%).

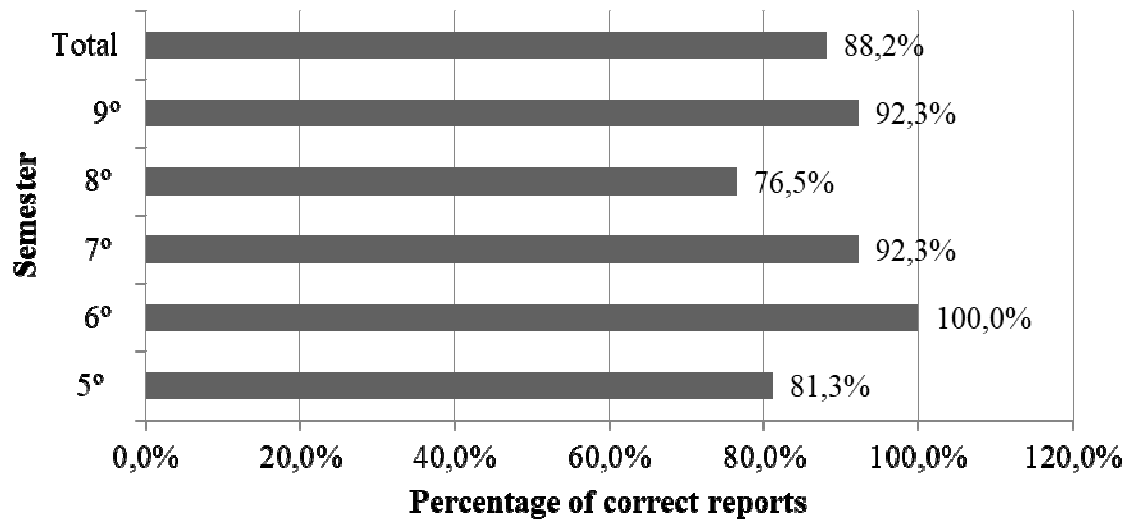


Figure 1 - Percentage of students who performed correct reports about the PIC procedure per semester. Natal, RN, Brazil, 2014.

To evaluate quality of the records, regarding the key items listed in Table 1, we considered the students who made the record in written form. Regarding adequacy of the reports, the percentage was quite variable, items such as date, time and identification requirements stood out positively. Instrument variables, fundamental items for a good nursing report on PIC procedure, revealed a discrepancy between an adequate, an incomplete or absent report.

Discrepancies found the same variable being properly recorded in a low percentage and also incompletely recorded in a high percentage, for example. Regarding the unregistered data, no student wrote about catheter fixation. There was also a lack of information about the reason for the puncture 53 (84.1%); the device used 54 (85.7%), and the presence of complications 55 (87.3%).

Table 1 - Instrument variables regarding students report on peripheral intravenous cannulation procedure (n = 63). Natal, RN, Brazil, 2014

VARIABLES	Adequate report		Incomplete report		Absent report	
	n	%	n	%	n	%
Date	62	98,4	0	0,0	1	1,6
Time	52	82,5	0	0,0	11	17,5
Reason for the procedure	10	15,9	0	0,0	53	84,1
Puncture site	17	27,0	0	0,0	46	73,0
Device used	9	14,3	0	0,0	54	85,7
Medication administered	19	30,2	43	68,3	1	1,6
Catheter fixation	0	0,0	0	0,0	63	100,0
Complications	8	12,7	0	0,0	55	87,3

Identification	42	66,7	18	28,6	3	4,8
----------------	----	------	----	------	---	-----

Considering the nine items evaluated in table 1, it is noteworthy that only none of the 63 students who wrote the report completely, and there was no adequate report which satisfied all items. The minimum of adequacy was 1 item and maximum of 8, average of 3.5 (standard deviation 1.5) and median of 3 items, both below a 50% adequacy index (4.5 items).

In the simulation, two drugs were prescribed. In order to register their administration, the student needed to follow some items (name of the drugs and respective doses of each) to comply with the recommendations. Incomplete reports were found in 43 cases (68.3%), in addition, 19 (30.2%) students performed the registration properly and only 1 (1.6%) was absent. The nonconformities observed for this variable were: reports in which the student did not inform the medication and dose 26 (60.5%); did not report dose 9 (20.9%) and reported only one drug 8 (18.6%).

For the variable identification, considering the 18 students who did not complete the results, the nonconformities observed were: the student did not identify as student or defined the professional category 1 (5.6%) and did not inform the registration number at the Regional Nursing Council (COREN) 17 (94.4%) – in which the student identified himself as a professional fictitious nurse.

It was also observed that 26 (41.3%) of the reports had left blank spaces, 11 (17.5%) contained some erasure and 1 (1.6%) some kind of spelling error.

## Discussion

Nursing in its work within the multiprofessional team is the one that is most incorporated into the care process, and thus staying longer with patients, executing numerous responsibilities such as management, interventions and procedures. Regarding the profile of the researched academics, the predominance of females was presumed. The feminization intrinsic to the profession was corroborated by the nursing profile survey in Brazil, which highlights a predominantly female professional body (85.1%), however demonstrating a continuing trend of increasing male proportion (14.4%)<sup>11</sup>

A report is a means of documenting all assistance provided by making it visible, and when done incompletely, demonstrates weaknesses in the quality of care.<sup>2</sup> A record that has erasures or alterations may lead to suspicion of attempting to alter or conceal information.<sup>12</sup>

PIC is a procedure usually performed by nursing. A study of undergraduate students in Sweden on the knowledge and skills to perform PIC using patient models and self-training has shown that most of them have mastery of the technique.<sup>13</sup> However, as regards the practice of reporting the procedure, students from the undergraduate nursing students at a state university report having difficulty, feeling insecure because they cannot identify fundamental and relevant aspects.<sup>14</sup>

In a nursing report, one of the items that is first described refers to the date and time of the procedure. In the study in question almost all academics recorded the date except one and 11 did not record the time the procedure was performed. Similar results were found in a study on the quality of nursing reports in a university hospital, in which date information was present in 80.9% of professional nurse records, while time was less than 65.5%; while between nursing technician/assistant this index obtained discrepancy, and in 94.3% of the records did not have the date and 52.7% did not have the time.<sup>2</sup>

Studies show divergences regarding registration compared to the present study. A study that performed analysis of nursing records in a hospital with hospital accreditation certification found that 79% of the records lacked the author, date and time in the notes taken<sup>15</sup> The presence of the correct date and time information (hours and minutes) are critical for records to have legal value as well as to avoid ambiguity, and all reports must be preceded by such items, including the PIC report.<sup>1</sup>

A relevant data to be considered, concerns the catheter fixation and the importance of the information. However, in the study, no academic registered it. The need for catheter stabilization to maintain the integrity of the venous access is fundamental. It can prevent damage to the vessel due to

movement and consequent loss of the device, and when associated with the use of adequate coverings to protect the insertion site, it can minimize the possibility of infection, influencing the risk of complications such as phlebitis, infiltration and displacement of catheter.<sup>16</sup>

The variables “reason for puncture” and “puncture site” were predominantly absent. The purpose and length of venous access may influence the choice for puncture site, the type of device and its fixation. Generally, superficial veins and peripheral arteries of the upper limbs are most commonly used for intermittent medication use.<sup>17</sup>

A study, performed in a hospital, with 76 patients, found that 76.3% of the reports were complete regarding aspects such as puncture site, description and size of the device used.<sup>18</sup> Type of device was a variable with high percentage of absence in the reports, revealing the need to improve this skill.

As for reporting complications, few academics did so, prevailing the absence of this item. Venous access' use is often associated with the risk of complications that can lead to increased morbidity and prolonged hospitalization, as venous catheter contamination is a major cause of bloodstream infections.<sup>10</sup>

Still, article 38 of the Code of Ethics for Nurses, it is of the nurse's duty to present complete and reliable information, either written or verbal, fundamental to the continuity of care and safety of the patient.<sup>4</sup> So, according to the recommendation guide for nursing records it is necessary to record the complications and measures adopted.<sup>3</sup>

The lack of information in the PIC reports makes it impossible for professionals to identify catheter duration, which is directly related to the occurrence of infectious complications. A study has shown that a duration bigger than 72 hours is the risk factor for phlebitis<sup>9</sup>, in contrast to the US Centers for Disease Control guidelines, which indicate the ideal maintenance period between 72 and 96 hours – being the change unnecessary when no phlogistic signs are identified.<sup>19</sup>

The “drug administration” was the item with the most incomplete answers by the students. The correct report form integrates the “right nine” items for safe drug administration. According to the Guide for drug preparation, administration and monitoring, published by the Regional Nursing Council of the São Paulo state, in 2017, every health professional, when administering a drug, should always check the “right nine” items: right drug, right dose, right site, right time, right patient, right report, right action, right method, and right answer.<sup>20</sup>

According to Federal Nursing Council Resolution No. 429/2012, which advises about all writing in the patient's medical record, and in other nursing documents, regardless of the means of support, professional identification and signature of the responsible professional is mandatory.<sup>21</sup>

Regarding the adequate registry of the PIC technique, the present study found discrepancies when comparing the percentage of adequate, incomplete or absent reports. Regarding the nine fundamental items for performing an PIC procedure, no academic fulfilled it completely, a worrying fact confirmed by the low average and median adequacy. The importance of quality and complete nursing records is emphasized for continuity of care, patient safety, and legal issues.

Through a survey in two hospitals, one public and one private, 843 nursing reports were evaluated as for the systematization of nursing care (SAE). The study found that on the public hospital, 42% of the report were incomplete regarding the items "materials used", “observed aspects” and "clinical complications". However, in the private hospital 81% of the reports were complete. In addition, hospitals were classified as the quality of their records as satisfactory and unsatisfactory considering all the information needed for a good report, the public hospital was classified as unsatisfactory (71%) and the private satisfactory (81%).

Nursing report is an essential aspect in the nurse's daily working life, as it is a written proof for all the care and procedures provided, with fidelity and legitimacy to the care scenario. Its omission makes the communication within other health professionals about the patient's care unfeasible.<sup>2</sup>

Therefore, a report is a document that when done properly and with quality represents nursing care, but when absent or with gaps, it can result in a compromising care and its continuity.<sup>2</sup> The instrument items about the PIC report, whose indexes were incomplete or missing, were still significant and deserve to be reviewed within the scope of teaching and nursing care.



Faced with the various skills needed for nursing education, anxiety and insecurity are related to the context of academic relationships and demands. Due to factors such as overload, exposure to stressful times, stress, market expectations, skills lab activities and internships, dealing with unfamiliar situations such as performing a new procedure or direct patient care.<sup>23</sup> Such anxieties may be minimized using active methodology, making the teaching-learning process more efficient and interactive.

In this context, realistic simulation stands out as a teaching strategy capable of providing skills development through experiences since it reproduces real aspects and situations in a fictional and safe manner. All of these being done with the help of actors or the use of patient models, in previously established scenarios, allowing improving participants' performance from their own mistakes; In addition to working on technical skills, it enables leadership, teamwork, and critical thinking.<sup>24</sup>

Thus, the transformations that take place in contemporary society establishes a challenge for the educational institutions. These transformations value the formative process that provides a holistic view of the human being and society, as to intervene in their problems by problematizing, liberating, overcoming the dichotomy between theory and practice, demanding greater need for qualification and critical reflection of nurses.<sup>25</sup>

The existence of specific professional classes that teaches techniques such as PIC in a segmented way, make it difficult to consolidate the knowledge and skills required for the procedure. Fragmentation in the formative process becomes a hindering factor for sedimentation of learning, being imperative the development of a continuous and transforming knowledge in an effective and conscious manner.

## Conclusion

This study identified that discrepancies related to the written report about the peripheral intravenous cannulation by undergraduate nursing students were frequent, besides incomplete notes and lack of information. Aspects such as date, time and identification stood out positively, with higher adequacy rates.

There were no records on catheter fixation. The lack of information about the reason for the procedure, the device used, and the presence of complications also prevailed. Of the evaluated items, no student performed the procedure adequately and completely, and the average adequacy was low (3.5 items).

As for the study limitations we highlight the impossibility of association between the participants who wrote that they've performed drug administration according to medical prescription and the written annotation of the procedure. In addition, there was a difficulty to relate the report and who wrote it, since each participant could only sign fictionally and the medical record sheet was not associated with the student's id, leading to difficulties for further analysis – especially regarding the comparison between students in different semesters.

For better results in future studies that address this theme, we recommend reviewing some aspects of teaching and nursing care. Furthermore, to improve the formative and evaluative process throughout the graduation, seeking to identify training strategies and monitoring students as for their performance in doing procedures, as well as for other skills needed to become a nurse.

An approach that associates theory and practice must be used more often and disseminated since undergraduate students will be future professionals, which may affect the quality of the graduates and, consequently, the nursing care. From identifying these aspects, graduates can enhance the teaching progress, as well as foster nursing research that encourages discussion in this area. All these properties can lead to a reflection on the teaching-learning process, the use of active methodologies and resources directed for the improvement of nurses in training.

## References

1. Conselho Regional de Enfermagem de São Paulo (COREN-SP). Anotações de Enfermagem (cartilha). 2009.
2. Diniz SOL, Silva PS, Figueredo NMA, Tonini T. Qualidade dos registros de enfermagem: reflexões analíticas em suas formas e conteúdos. *Rev enferm UFPE* [Internet]. 2015 [acesso em 2017 nov 07]; 9(10):9616-23. Disponível em: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/10908>
3. Conselho Federal de Enfermagem (COFEN). Guia de recomendações para registro de enfermagem no prontuário do paciente e outros documentos de enfermagem (guia). Maio/2016.
4. Conselho Federal de Enfermagem. Resolução COFEN nº 564/2017. Aprova novo Código de Ética dos Profissionais de Enfermagem. Rio de Janeiro: COFEN; 2017.
5. Oliveira AKA, Vasconcelos QLDAQ, Melo GSM, Melo MDM, Costa IKF, Torres GV. Validação de instrumento para punção venosa periférica com cateter agulhado. *Rev Rene*. [Internet] 2015 [acesso em 2017 nov 07]; 16(2):176-84. Disponível em: <http://www.repositorio.ufc.br/handle/riufc/12646>
6. Frota NM, Barros LM, Araújo TM, Caldini LN, Nascimento JC, Caetano JA. Construção de uma tecnologia educacional para o ensino de enfermagem sobre punção venosa periférica. *Rev Gaúcha Enferm*. [Internet] 2013 [acesso em 2017 maio 23]; 34(2):29-36. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1983-14472013000200004&lng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1983-14472013000200004&lng=en).
7. Guembe M, Pérez-Granda MJ, Capdevila JA, Barberán J, Pinilla B, Martín-Rabadán P et al. Nationwide study on the use of intravascular catheters in internal medicine departments. *J Hosp Infect*. [Internet] 2015 [acesso em 2017 nov 07]; 90(2):135-41. Disponível em: <https://www.ncbi.nlm.nih.gov/pubmed/25824558>
8. Oliveira AKA, Medeiros LP, Melo GSM, Torres GV. Passos da técnica de punção venosa periférica: revisão integrativa. *Arq. Ciênc. Saúde*. [Internet] 2014 [acesso em 2017 maio 23]; 21(1):88-95. Disponível em: [http://repositorio-racs.famerp.br/racs\\_ol/vol-21-1/v21-1.htm](http://repositorio-racs.famerp.br/racs_ol/vol-21-1/v21-1.htm)
9. Johann DA, Danski MTR, Vayego AS, Barbosa DA, Lind J. Fatores de risco para complicações no cateter venoso periférico em adultos: análise secundária de ensaio clínico randomizado. *Rev. Latino-Am. Enfermagem*. [Internet] 2016 [acesso em 2017 nov 07]; 24:e2833. Disponível em: <http://www.redalyc.org/articulo.oa?id=281449727056>
10. Silva BF, Lopes FA, Queiroz TQ, Sousa TDL, Gomes RKG. Inovações na segurança do paciente assistido em clínica-médica: qualidade dos registros da equipe de saúde nos prontuários. *Revista expressão católica saúde*. [Internet] 2016 [acesso em 2017 nov 07]; 02(2). Disponível em: <http://publicacoesacademicas.fcrs.edu.br/index.php/mice/article/view/1155/929>
11. Machado MH (Coord.), Aguiar WF, Lacerda WF, Oliveira E, W Lemos, Wermelinger M, et al. Relatório final da Pesquisa Perfil da Enfermagem no Brasil. Rio de Janeiro: Fiocruz; Brasília, DF: Cofen, 2015.
12. Caveião C, Hey AP, Montezelli JH, Gastandi AB, Bobroff MCC, Farias DS. Anotações de enfermagem na perspectiva de auxiliares de enfermagem. *RevEnferm UFSM* [Internet] 2014 [acesso em 2017 junho 12]; 4(2):401-409. Disponível em: <https://periodicos.ufsm.br/reufsm/article/view/10720/pdf>
13. Ahlin C, Klang-Söderkvist B, Johansson E, Björkholm M, Löfmark A. Assessing nursing students' knowledge and skills in performing venepuncture and inserting peripheral venous

- catheters. *Nurse Educ Pract.* [Internet] 2017 [acesso em 2017 nov 12]; 23:8-14. Disponível em: <https://www.ncbi.nlm.nih.gov/pubmed/28171853>
14. Silva JP, Garanhan ML, Peres MA. Sistematização da Assistência de Enfermagem na graduação: um olhar sob o Pensamento Complexo. *Rev. Latino-Am. Enfermagem.* Ribeirão Preto [Internet]. 2015 [acesso em 2017 nov 07]; 23(1):59-66. Disponível em: <http://www.redalyc.org/articulo.oa?id=281438429009>
  15. Moraes CGX, Batista EMS, Castro JFL, Assunção SS, Castro GMO. Registros de enfermagem em prontuário e suas implicações na qualidade assistencial segundo os padrões de acreditação hospitalar: um novo olhar da auditoria. *Revista ACRED.* [Internet] 2015 [acesso em 2017 maio 7]; 5 (9): 64-84. Disponível em: <https://dialnet.unirioja.es/servlet/articulo?codigo=5626617>
  16. Brasil. Agência Nacional de Vigilância Sanitária. Medidas de prevenção de infecção da corrente sanguínea In: Brasil. Agência Nacional de Vigilância Sanitária. Medidas de Prevenção de Infecção Relacionada à Assistência à Saúde. Brasília: Anvisa, 2017. p. 49-70.
  17. Soares CR, Almeida AM, Gozzo TO. A avaliação da rede venosa em mulheres com câncer ginecológico. *Esc Anna Nery.* [Internet]. 2012 [acesso em 2017 maio 23]; 16(2):240-246. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1414-81452012000200005&lng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452012000200005&lng=en).
  18. Tertuliano AC, Borges JLS, Fortunato RAS, Oliveira AL, Poveda VB. Flebite em acessos venosos periféricos de pacientes de um Hospital do Vale do Paraíba. *Rev Min Enferm.* [Internet] 2014 [acesso em 2017 maio 23]; 18(2):334-345. Disponível em: <http://reme.org.br/artigo/detalhes/931>
  19. Webster J, Osborne S, Rickard CM, New K. Clinically-indicated replacement versus routine replacement of peripheral venous catheters. *Cochrane Database Syst Rev.* [Internet] 2015 [acesso em 2017 maio 7]; 14: CD007798. Disponível em: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD007798.pub4/full>
  20. Conselho Regional de Enfermagem de São Paulo. Uso seguro de medicamentos: guia para preparo, administração e monitoramento/ Conselho Regional de Enfermagem de São Paulo. – São Paulo: COREN-SP, 2017.
  21. Conselho Federal de Enfermagem. Resolução COFEN nº 429/2012. Dispõe sobre o registro das ações profissionais no prontuário do paciente, e em outros documentos próprios da enfermagem, independente do meio de suporte – tradicional ou eletrônico. Brasília: COFEN; 2012.
  22. Silva TG, Santos RM, Crispim LMC, Almeida LMWS. Conteúdo dos registros de enfermagem em hospitais: contribuições para o desenvolvimento do processo de enfermagem. *Enferm. Foco.* [Internet]. 2016 [acesso em 2017 nov 23]; 7(1):24-27. Disponível em: <http://revista.portalcofen.gov.br/index.php/enfermagem/article/view/679/293>
  23. Jesus IS, Sena ELS, Souza LS, Pereira LC, Santos VTC. Vivências de estudantes de graduação em enfermagem com a ansiedade. *Rev enferm UFPE on line.* [Internet].2015. [acesso em 2018set03]; 9(1):149-57. Disponível em:<https://periodicos.ufpe.br/revistas/revistaenfermagem/article/download/10319/11001>.
  24. Shapira-Lishchinsky O. Simulations in nursing practice: toward authentic leadership. *J NursManag.* [Internet]. 2014. [acesso em 2018 Set 05]; 22(1):60-9. Disponível em: <https://www.ncbi.nlm.nih.gov/pubmed/23410036>.

25. Pires AS, Souza NVDO, Penna LHG, Tavares KFA, D'Oliveira CAFB, Almeida CM. A formação de enfermagem na graduação: uma revisão integrativa da literatura. Revista Enfermagem UERJ. [Internet]. 2014.[acesso em 2018 Set 05]; 22(5):705-711. Disponível em: <http://www.e-publicacoes.uerj.br/index.php/enfermagemuerj/article/view/11206/12315>

### **Corresponding author:**

Gabriela de Sousa Martins Melo

E-mail: gabrielasmm@hotmail.com

Address Campus Universitário, BR 101 – Lagoa Nova. Natal/ RN

Zip code: 59072-970

### **Authors Contributions**

Author 1 – Samylle Pelaes da Mota

Contributions: Author was responsible for project planning and execution and manuscript writing. This study is part of her UFRN nursing degree requirements.

Author 2 – Joice Silva do Nascimento

Contributions: Author contributed with data tabulation, analysis and interpretation and manuscript writing.

Author 3 – Shirlane Priscilla Barbosa de Melo Azedo Raposo

Contributions: Author contributed with data tabulation, analysis and interpretation and manuscript writing..

Author 4 – Camylla Cavalcante Soares de Freitas

Contributions: Author contributed as research assistant, and with data collection, manuscript critical review and writing.

Author 5 – Alexsandra Rodrigues Feijão

Contributions: Author contributed with manuscript critical review and writing.

Author 6 – Gabriela de Sousa Martins Melo

Contributions: Author contributed as main researcher and head of the Project, with research conception and planning, data collecting and analysis, and manuscript and final paper review.

### **How to cite this article**

Mota SP, Nascimento JS, Azedo SPBM, Freitas CCS, Feijão AR, Melo GSM. Peripheral venous cannulation: analysis of undergraduated nursing student reports. Rev. Enferm. UFSM. 2019 [Acesso em: Anos Mês Dia]; vol e39:1-14. DOI:<https://doi.org/10.5902/2179769230148>

