Competence assessment in nursing education during field practices
Avaliação de competências no ensino da enfermagem durante as práticas de campo
Evaluación de competencias en la educación de enfermería durante las prácticas de campo

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Abstract: Objective: to analyze the knowledge of nursing students about the competences assessed during practical field classes during the training of nurses. Method: quantitative and exploratory study, with simple and descriptive statistical analysis, performed in a higher education institution in the city of Curitiba, Brazil. Data collection occurred in August 2018, with 113 nursing students through questionnaires with open and closed questions, applied during the period of classes. Results: the health care competence was highlighted as the most relevant indicated by students, followed by the skills related to health care as one of the points to be assessed during field practices; leadership did not achieve any place on the relevance scale of the assessed competences. Conclusion: the competences cited by the Brazilian National Curriculum Guidelines are assessed during the entire training process and other findings in this study make it necessary to develop more appropriate situational strategies during academic training.

Descriptors: Students, Nursing; Nursing Education Research; Competency-Based Education; Educational Measurement; Professional Competence

Resumo: Objetivo: analisar o conhecimento dos acadêmicos de enfermagem sobre as competências avaliadas durante as aulas práticas de campo na formação do enfermeiro. Método: estudo quantitativo exploratório, de análise estatística simples e descritiva, realizado em uma instituição de ensino superior na cidade de Curitiba,

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Brasil. A coleta de dados ocorreu em agosto de 2018, com 113 acadêmicos de enfermagem por questionário com perguntas abertas e fechadas, aplicado durante o período de aulas. **Resultados:** destacou-se a competência atenção à saúde como a mais relevante indicada pelos acadêmicos, seguido das habilidades relacionadas a assistência como um dos pontos a serem avaliados durante as práticas de campo; a liderança não atingiu nenhuma colocação na escala relevância das competências avaliadas. **Conclusão:** as competências citadas pelas Diretrizes Curriculares Nacionais são avaliadas durante todo processo formativo e outros achados nesse estudo perfazem a necessidade da criação de estratégias situacionais mais adequadas durante a formação do acadêmico. **Descritores:** Estudantes de Enfermagem; Pesquisa em Educação de Enfermagem; Educação baseada em competências; Avaliação educacional; Competência Profissional

**Resumen: Objetivo:** analizar el conocimiento de los estudiantes de enfermería sobre las competencias evaluadas durante las clases prácticas de campo en la formación de enfermeros. **Método:** estudio exploratorio cuantitativo, con análisis estadístico simple y descriptivo, realizado en una institución de educación superior en la ciudad de Curitiba, Brasil. La recolección de datos ocurrió en agosto de 2018, con 113 estudiantes de enfermería mediante cuestionarios con preguntas abiertas y cerradas, aplicadas durante el periodo de clases. **Resultados:** se destacó la competencia atención de salud como la más relevante señalada por los académicos, seguida de las habilidades relacionadas con la asistencia como uno de los puntos a evaluar durante las prácticas de campo; el liderazgo no logró ningún lugar en la escala de relevancia de las competencias evaluadas. **Conclusión:** las competencias citadas por las Directrices Curriculares Nacionales de Brasil se evalúan durante todo el proceso formativo y otros hallazgos en este estudio subrayan la necesidad de crear estrategias situacionales más apropiadas durante la formación académica. **Descritores:** Estudiantes de Enfermería; Investigación en Educación de Enfermería; Educación Basada en Competencias; Evaluación Educacional; Competencia Profesional

**Introduction**

The assessment methods applied in the field practices of the undergraduate nursing course are elementary tools in the process of training nurses. Although they are related to health care actions, nursing professionals must gain, throughout their training, competences necessary to develop critical-reflective thinking, going beyond the context in which they are inserted.¹

Competence is a word for an individual’s ability to accomplish something, which is not limited to knowledge. Although it is understood as a set of skills, attitudes and knowledge, we should highlight that they consists in the range of aptitudes that include knowing, mobilizing, integrating and transferring knowledge, resources and skills.² Although there are other
definitions for the meaning of competence, it is highlighted in the subject’s daily situations, that is, it can be observed in professional practice.¹

In higher education in the health area, the process of training new professionals is guided by the Brazilian National Curriculum Guidelines (DCNs, as per its Portuguese acronym), which emphasize the importance of constructing innovative pedagogical projects.³ In the undergraduate nursing course, they have a list of competences, which require that the academic can learn and develop throughout the undergraduate course.

In order to exemplify that this is a global concern, a study performed in South Korea has shown that additional competence measurements and analyzes are necessary to identify potential competence factors or predictors, besides the fact that an active teaching-learning schedule can contribute to meeting the training of competences that were pointed out by the Korean Accreditation Board for Nursing Education.⁴ As in the cited study, the results of the application of an appropriate instrument can help undergraduate nursing courses to identify strengths and areas that need to be improved in their own curriculum.

The nursing student must receive generalist training, which gives him/her a humanistic, critical and reflective view, thereby preparing him/her to recognize and intervene in the various settings in which he/she is inserted. The general competences of a nurse are: health care, decision making, communication, leadership, administration and management, and continuing education.⁵ These competences described in DCNs serve as a guidance device for educational institutions and can assist in the preparation of the planning of the Pedagogical Course Project (PPC, as per its Portuguese acronym). It should contain pedagogical strategies that articulate learning, knowing, doing and living, which are intrinsic attributions of nurses.

The DCNs of undergraduate nursing courses define: trainee profile, general and specific competences, skills, curriculum content, internships, complementary activities, organization of teaching, monitoring and assessment.⁵ Competence assessment during academic training is
substantial to delineate the monitoring of progression in the construction of knowledge of the future professional. Accordingly, the assessments should be based on the developed competences and curriculum content, having as reference these DCNs.6

The teaching of field practice is correlated with the training of nurses, since having previous aptitudes and knowledge is a condition for the development of activities. Teachers, on the other hand, should be able to perform such activity, allowing critical and reflective thinking in the construction of specific knowledge.7

It is possible to highlight that the assessment process needs to be dialogical, with involvement throughout the process. This will make the academic student become the main figure of learning, thereby transforming the assessment method into a solidarity, participatory and inclusive process. To that end, it is necessary to deconstruct the view of punitive and controlling assessment, transforming the teaching-learning process so that it has as main focus the student’s individuality.8

In order to assess field practices, we must understood competence as the ability to mobilize a set of skills to resolve professional situations with relevance and effectiveness. In educational practice, in a competence-based approach, assessment is no longer centered on curricular units, but is measured through specific situations and tasks.9

The development of competences during teaching makes it possible to develop the aptitudes necessary for professional practice, using strategies capable of enhancing the student’s performance.10 Accordingly, the assessment of field practice must be broad, addressing the competences described in DCNs in line with PPC, these being the defining criteria for assessments in educational institutions. The continuously performed assessment, using valid and accurate instruments, is distinguished by its diagnostic, summative and formative nature.9
Therefore, this study may provide subsidies for the elaboration of an instrument capable of assessing students in their training process resulting from the assessment process, addressing the competences required by the DCNs of the undergraduate nursing course. Accordingly, the present investigation was anchored in the following research question: what is the knowledge of academic nursing students about the competences assessed in the learning process of practical field classes?

In order to elucidate this question, we outlined the following objective: to analyze the knowledge of academic nursing students about the competences assessed during practical field classes in the training of nurses.

Method

This is an exploratory and descriptive study, with a quantitative approach, conducted with students of the nursing course who perform field practices and who are in the classes of the fourth, fifth, sixth and eighth periods of a private Higher Education Institution (HEI) in southern Brazil, who accepted to voluntarily participate in the research by signing the Free and Informed Consent Form. We should underline that, in the researched HEI, the course consists of eight semester periods. The established inclusion criteria were: students who were enrolled in the undergraduate nursing course, who attended subjects and developed field practice activities. Regarding the exclusion criteria: students absent during the data collection period.

The instrument used in data collection was designed by the authors and contained 13 questions with open and closed multiple choice questions, related to the competences assessed during field practices, about the feedback practice in the assessment process, and the main points to be observed by teachers during this process, in addition to questions to characterize the participants. After preparing the data collection instrument, it was assessed by appearance and content by three nurse teachers.
Data collection took place in August 2018, and the instruments were applied in person in
the classroom in the morning shift, after scheduling with the course coordinator. The student
was given the opportunity to participate in the research or leave the classroom at the moment of
application. The institution contained 118 students enrolled in the fourth, fifth, sixth and eighth
periods of the undergraduate nursing course; of these, five refused to participate when the
questionnaires were applied, and then the sample was made up of 113 students.

In order to organize and collect data, participants were coded with alphanumeric acronyms to
ensure their anonymity (for example, academic 1 = A1 and so on). The results were typed in a
Microsoft Excel® spreadsheet, using double typing, with a view to avoiding an error margin. In order
to investigate the results, we used a basic descriptive analysis, which involves the calculation of
simple measures of composition and distribution of variables. The results were calculated in
percentages and displayed in table format and, subsequently, analyzed through the scientific
literature.

This research started after the approval of the Research Ethics Committee, under
Opinion nº 2.814.338, on August 10th, 2018. Ethical aspects were respected in all stages of the
study, in accordance with Resolution 466/2012, which deals with recommendations that regulate
research involving human beings.

Results

Of the 113 participants, 98 (86.7%) were female and 15 (13.3%) were male, with an average
age of 27.5 years. Students who had technical or auxiliary nursing training corresponded to 66
(58.4%) participants, where 31 (27.4%) did not indicate such training; and 16 (14.2%) did not
answer the question.

As for the enrollment period, we found that there are 21 students in the fourth period of
the course (18.6%), 14 students in the fifth period (12.4%), 42 students in the sixth period (37.2%)
and 36 students in the eighth period (31.9%). At the moment of the research, the institution did not have the seventh period.

When students were asked if they had knowledge about the assessment tool for practical field classes, 101 (89.4%) answered yes and 10 (8.8%) answered no; 02 (1.8%) participants did not answer the question. Regarding the guidance about the items assessed during field practices, 99 (87.6%) indicated that the guidance is held, while 14 (12.4%) indicated that they did not receive it.

The instrument for assessing field practices is presented to students on the first day of class, together with the teaching plan, according to 46 (40.7%) participants, as displayed in Table 1.

**Table 1** - Moment of presentation of the instrument for assessing field practices in an HEI in Curitiba-PR, 2018. (n = 113)

<table>
<thead>
<tr>
<th>Moment</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the first day of class, together with the teaching plan</td>
<td>46</td>
<td>40.7</td>
</tr>
<tr>
<td>When starting the practical classes</td>
<td>31</td>
<td>27.4</td>
</tr>
<tr>
<td>During the practical classes</td>
<td>12</td>
<td>10.6</td>
</tr>
<tr>
<td>At the end of the practical classes</td>
<td>14</td>
<td>12.4</td>
</tr>
<tr>
<td>Only on the day of the final evaluation</td>
<td>7</td>
<td>6.2</td>
</tr>
<tr>
<td>Unanswered</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Total number of participants</td>
<td>113</td>
<td>100</td>
</tr>
</tbody>
</table>

In one question, we listed the general competences that nurses must gain during the undergraduate nursing course, one being very relevant and six not very relevant. Health care competence ranked the first position, with 37 points; communication ranked the second position, with 25 points; decision making ranked both the third and fourth positions, with 35 and 24 points respectively; administration and management ranked the fifth, with 24 points; and the sixth position was occupied by continuing education, with 52 points. The leadership competence did not achieve any position on the scale according to Table 2.
Table 2 - Relevance scale of competences assessed according to the number of participants in an HEI in Curitiba-PR, 2018. (n = 113)

<table>
<thead>
<tr>
<th>Competence</th>
<th>Very relevant</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Little relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care</td>
<td>37</td>
<td>16</td>
<td>7</td>
<td>17</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Decision making</td>
<td>14</td>
<td>13</td>
<td>35</td>
<td>24</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Communication</td>
<td>29</td>
<td>25</td>
<td>9</td>
<td>17</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Leadership</td>
<td>17</td>
<td>18</td>
<td>24</td>
<td>15</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Administration and management</td>
<td>15</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Continuing education</td>
<td>14</td>
<td>9</td>
<td>4</td>
<td>6</td>
<td>16</td>
<td>52</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unanswered</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Moreover, students were asked if the assessments of the field practices included the DCNs of the undergraduate nursing course, when we found that 72 (63.7%) answered yes, 40 (35.4%) answered no and 01 (0.9%) did not answer. When asked if they were instructed by the teacher to develop competences, 84 (74.3%) answered yes, 26 (23%) answered no and 03 (2.7%) did not answer.

Regarding the number of individual assessments in the field practice, 47 (41.6%) answered that they received only one assessment at the end of the field practice; 12 (10.6%) two assessments; 08 (7.1%) three assessments at different moments, and at the end of the field practice; 44 (38.9%) indicated that they receive daily assessments, and at the end of the field practices; and 02 (1.8%) did not answer the question.

From the students’ viewpoint, health care skills (technique, practice and procedures) are the main points to be assessed during field practice, constituting the item most mentioned in the open question, appearing 62 times. In contrast, competence assessments, such as those described in DCNs, occupy the 5th position, being cited 18 times as displayed in Table 3.
Table 3 – Main points to be considered in the viewpoint of nursing students during the assessment of field practices in an HEI in Curitiba-PR, 2018. (n = 113)

<table>
<thead>
<tr>
<th>Topics to be assessed, according to students</th>
<th>N° of citations in the answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care skills (technique, practice and procedures)</td>
<td>62</td>
</tr>
<tr>
<td>Scientific and technical knowledge</td>
<td>49</td>
</tr>
<tr>
<td>Ethical stance</td>
<td>21</td>
</tr>
<tr>
<td>Academic interest</td>
<td>19</td>
</tr>
<tr>
<td>Competences</td>
<td>18</td>
</tr>
<tr>
<td>Initiative</td>
<td>12</td>
</tr>
<tr>
<td>Commitment or responsibility</td>
<td>4</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>108</td>
</tr>
<tr>
<td>Unanswered</td>
<td>5</td>
</tr>
</tbody>
</table>

Regarding the importance of feedback during field practices, 112 (99.1%) considered it important and 01 (0.9%) answered that it was not important. Based on this, we questioned about the frequency of such practice in the professional’s development during field practices, 34 (30.1%) answered that it is daily; 27 (23.9%) that it is weekly; 46 (40.7%) said that they receive it at the end of the field practices; and 06 (5.3%) said that it was never held. The alternative that corresponded to the monthly was not selected by any participant. When asked about the frequency of individual feedbacks, 15 (13.3%) answered that they received none; 35 (31.0%) at least one; 20 (17.7%) two; 12 (10.6%) three; 28 (24.8%) answered that they received four or more during their field practices; and 03 (2.7%) did not answer this question. In addition, students were asked if the technical or auxiliary nursing training influences the assessment process in field practices, 44 (59%) believe that previous training influences the assessment, 16 (22%) answered that it does not influences and 14 (19%) did not reveal a positioning.

Discussion

We noted that the predominance of women in this research is in line with the most recent data published by the Brazilian Federal Nursing Council (COFEN, as per its Portuguese
acronym) in conjunction with the Oswaldo Cruz Foundation (FIOCRUZ), which highlight that 86.2% of the nursing professionals in Brazil are female.\textsuperscript{11}

It is important that the assessment instrument is presented to the student, as well as the main points are discussed. This reading ensures the discernment of what is being assessed among the parties. In their training process, students must be instructed about the topics that make up the assessment, where they must understand what competences will be developed in view of the assessed points. It is important to emphasize that the presentation of the assessment instrument must occur on the first day of class together with the teaching plan, or whenever necessary, which will foster knowledge of the addressed content.\textsuperscript{2}

There is no distinction among the general competences of nursing professionals, but domains that each individual develops throughout his/her professional journey, creating an affinity with the competence in use. It is understood that all competences are of high relevance, each of which must be gained during the training of the future professional.\textsuperscript{2}

DCNs guide the construction of PPC, despite the fact that it is poorly constructed. In their theoretical assumption, they point out that nurses must gain distinct competences and skills throughout their training, but there are no assurances for achieving the targeted goal, requiring adjustments in terms of teaching methodologies and assessments used in the training process, which can ensure a broad development to the academic student.\textsuperscript{5} This is due to changes in the world of work, aimed at meeting the health needs of the population. Therefore, professionals are expected to be more flexible and dynamic when faced with decision-making in work processes, requiring training focused on competences, rather than professional qualification.\textsuperscript{12}

As a result of the changes that occur in the world of work, Resolution n° 573, dated from January 31\textsuperscript{st}, 2018, presents recommendations regarding the proposal of DCNs for the Undergraduate Nursing Course and underlines its synergistic role between professional
training and health services needs. In this document, points that make up the development of knowledge, expertise, skills and attitudes were observed, where these characteristics are defining elements in relation to professional performance and essential for the population’s health.13

Among those mentioned by the surveyed students, the “leadership” competence was the only one that did not present significant answers, by degree of relevance. This denotes that there is a subjectivity in the presentation of “leadership” among academic students, which may or may not be attributed during field practices, due to the limitation imposed on professional practice by the field of practice.

It is important that, during the undergraduate course, the academic student is encouraged to develop leadership through the involvement of teachers. This stimulus should contribute to the training of qualified, critical and reflective professionals, developing the ability to make decisions in the face of conflicting situations, thereby assisting in the provision of health services.14 Competencies are addressed in different ways during training and, therefore, are highlighted through the specific skills mentioned in DCNs.

Another finding obtained in the study points out that the health care competence was the most relevant. On the other hand, continuing education appeared with the lowest rate of answers by relevance. This adequacy observed in this study denotes that the other competences have been addressed in a greater or lesser degree among students, due to the needs presented during the course.15 This factor may indicate that the teaching of these competences occurs in a fragmented way. To that end, teaching strategies aiming at the restructuring of the course, as well as the use of active methodologies during this process, may foster the complementation of this existing gap.16

In the competency-based assessment model, it is essential that the individuals are involved throughout the assessment process. The academic student becomes the main figure,
raising his/her knowledge through practical situations, while the teacher, in his/her professional practice, leads him/her to develop the objectives proposed in PPC.\textsuperscript{10}

Assessments should not be an isolated resource during training. They can encompass the entire teaching-learning process, guiding the construction of the new professional. In view of the above, procedural assessment is an important teaching regulation tool, allowing academic students to identify the proposed objectives and analyze if they have achieved the expected results.\textsuperscript{17}

Although the competences are not directly highlighted through the assessment instruments, they are present in the assessment of specific skills and are developed throughout the training process. Accordingly, it is considered that the assessments of field practices need to occur daily, constituting an important step for the construction of learning. Therefore, students will be able to gradually understand their training process, as well as to develop the necessary competences, as envisaged by DCNs.\textsuperscript{15}

Among the main points to be considered during the assessment of field practices, the health care skills that involve technique, practice and the accomplishment of procedures were the most cited among the surveyed academic students. This result corroborates the findings presented in this study, with health care competence being the most relevant in comparison with the others. In addition, other points presented by students denote the desire for health care practices; however, the assessment of competences should take into account all the variables presented during the course, mainly focusing on the individual and integral development of the academic student.\textsuperscript{18}

In order to assist the daily assessments, the use of feedback stands out, as it can address the results of their actions and practices in the field activity, which is previously established in the teaching plan, being used as a monitoring and development strategy. Feedbacks can be used as a
reference for future assessments, with respect to the development of competences not yet achieved previously.

Health care skills are described in DCNs as specific skills, which nursing professionals must gain during their training. To that end, the student must develop the ability to intervene in the health-disease process, being responsible for the quality of the care provided, with a view to promoting, preventing, protecting and rehabilitating health in the integrality of care.

The planning of care provides nurses with responsibility towards customers, allowing the accomplishment of diagnoses consistent with the current needs and adapting the care to be performed. Field practices constitute a great potential in the development of the competences of the future nursing professional. It must be ensured that the evolution of the activities is capable of ensuring a formative and summative development, and that the assessments provide a critical and reflective development to academic students. Conversely, students are hesitant to apply systematized care, since there is a gap between these practices and the development of these skills.

To that end, the ability to give and receive feedback allows academic students to identify their performance through the development of their field activities. Accordingly, feedback is necessary when it is requested or even when it is not, awakening in these academic students the improvement of their learning process, which is essential in the teaching process. In this context, feedback regulates the teaching-learning process, since it provides information for the academic student to realize how far or close he/she is from the desired goal. The obtained results point out that individual feedbacks occur according to the need of each individual, relative to the moment, allowing the necessary adjustments for better quality of learning, and these stimuli must occur so that students can carry out a self-assessment of their learning.

In this sense, according to Law n° 7.498, dated from June 25th, 1986, which provides for the regulation of nursing practice, nursing technicians are mid-level professionals, who provide
guidance and monitoring in an auxiliary way, thereby taking part in the planning of nursing care, except in activities exclusive to nurses. Nursing assistants are responsible for simple activities, under supervision, observing and recognizing signs and symptoms, as well as performing simple activities. Nurses perform all nursing activities, including the management position of nursing agencies and services, planning and organization, consultancy and audit of health services, as well as care that requires greater complexity.22

In light of the foregoing, it is clear that the assessments of field practices are leaving doubts concerning the applicability. It is understood that the functions held between classes are different, and, therefore, higher education training should not be understood as a complement to technical training, or even as a professional improvement. This training must include all competences and skills, as proposed by DCNs. To that end, the other trainings must not interfere, taking into account the differentiation of the professional’s performance. The study presented as a limitation the accomplishment of research in a single HEI and the non-participation of teachers, which may or may not characterize an isolated fact. Accordingly, it is recommended to perform future studies about this theme, with a view to producing knowledge in the area.

**Conclusion**

When analyzing this study, we found that the competences cited by the DCNs are assessed throughout the academic training process, with health care being more prominent. Among the competences addressed during nursing education, leadership stands out, which did not present satisfactory data in the composition of the results. Moreover, other findings in this study underline the need to create appropriate situational strategies, indicating the continuous use of feedback practices during the formative process.
Finally, we should highlight that the competences presented by DCNs may foster subjectivity and that these have raised criticisms and reflections in several studies related to the theme. Moreover, this fact may justify the search for professionals in the labor market with technical aptitudes, linked to the understanding of qualification and enhancement of mid-level professionals.

We can consider that this research constitutes a step in the construction of an instrument for assessing field practices, which considers the different aspects during academic training. Moreover, it contributes to enabling formative planning and constructing trained professional profiles for the various segments of activity.

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Support and guidance for the final version of the research report and critical review of the article.

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