

ORIGINAL RESEARCH

Comparing the capacity of nurses and nursing students in assessing patient problems during clinical internship: A descriptive comparative study

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ABSTRACT

Objective: No studies were found in the literature which compared the capacity of nurses and nursing students to assess patient problems using the clinical cases followed during internship. Therefore, the aim of this study was to formulate a method for comparing these skills in cases followed during a practical clinical internship.

Methods: The sample studied was made up of students of the degree course in nursing during their internship and by community nurses, both trained in using assessment. Each student identified a patient and carried out an assessment of the problems according to the functional patterns of M. Gordon; the nurses also simultaneously carried out the same activity without comparing their work with that of the students. A method was formulated for evaluating the correctness of the two evaluations.

Results: The results relative to the assessment showed a percentage of correctness of 85.77% for the students and 91.28% for the nurses with a statistically significant difference ($p = .027$).

Conclusions: The results obtained demonstrated that the students in the last year of their degree course in nursing had developed a good capacity of assessment during their internship in clinical practice in the community in line with the capacity of the nurses who taught them.

Key Words: Nursing assessment, Students nursing, Home nursing, Schools nursing

1. INTRODUCTION

The practice of nursing is the application of problem solving to nursing care and is used to furnish quality nursing care.^[1] From researching the literature, it was evident that the knowledge of nurses regarding the practice of nursing is very extensive but often what is lacking is its practical application and, therefore, the effects that planning could have at the level of assistance to the patient and at the level of organization.^[2]

Some reasons related to the failure of the nursing process (NP) execution are: inadequate knowledge, nurses' negative attitude, lack of resources, lack of time, inadequate staffing and work over load, lack of NP implementation tools.^[3] A previous study found that the main barrier to NP implementation, as perceived by nurses, was lack of time.^[4]

In particular, one phase of the practice of nursing is very important for the student: assessment. This phase consists of the collection and critical evaluation of the data of the patient,

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the family and the community with the aim of guiding nursing care and identifying appropriate nursing diagnoses. Professional responsibility towards the patient assisted requires that the information collected be as accurate as possible with the aim of obtaining targeted assistance which actually responds to the needs of the patient. The assessment can take place according to various reference models, including the functional patterns of M. Gordon. According to Gordon, the initial assessment takes place each time that a new patient is added to those already in the case load of a nurse and is carried out using the 11 functional patterns of health.^[5] The aim of the initial assessment is to evaluate the state of the patient, identify those patterns which could present a problem and establish a therapeutic and care relationship.

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Much of what regards the theoretical knowledge and methodology of nursing practice is already present in the literature; however, demonstrations of practical applications are lacking. A review of the literature was carried out in order to verify whether there is a connection between didactic strategies and the training of nursing students with the aim of clarifying which of these strategies furnish optimal training results.^[6]

The results demonstrate that laboratories which use simulation techniques furnish an environment which supports the training of the students. However, the necessity of improving didactic strategies was evident to eliminate the differences between learning in a classroom and clinical practice.^[7,8] In fact, one of the principal problems is represented by this lack of coherence between theoretical learning and clinical practice as was also reported in a revision in 2013 which held that it was fundamental that the teachers move away from traditional teaching methods and develop more practical approaches.^[9] Therefore, it is important not only to perform classroom lectures but to use learning models (e.g. preceptorship) which can improve students' involvement in the clinical practice and their critical thinking and decision-making skills, especially in the third year of nursing program.^[10]

It is important that nurse educators spend time in clinical practice updating their clinical skills and re-experiencing the realities of practice in order to improve students learning and find ways of merging theory and practice in the delivery of patient care. Thus, the exchange should occur between the education setting and the clinical setting where students are.

A literature review published in 2018 summarized evidence pertaining to the knowledge and practical skills of new graduate registered nurses compared to expert nurses. It found

that nursing practice has different stages of knowledge and skills and that new graduate registered nurses experience a theory-practice gap.^[12] Therefore, organizations should understand the knowledge of a new graduate registered nurse upon entering clinical practice to provide appropriate clinical and theoretical support. Also, another literature review published in 2015 reported that newly qualified nurses feel unprepared for practice, lacking confidence in their own capabilities. Newly qualified nurses also felt that not enough time was dedicated to the clinical skills training during the academic program.^[13]

With regard to professionals, the NP use should be supported by the ability to make decisions based on evidence and critical thinking.^[14,15] No previous studies have been published to date on the effectiveness of educational interventions to improve nursing judgement and decision making. A systematic review published in 2011 found that a wide range of educational approaches were reported but their effectiveness and efficacy was mixed.^[16]

A more recent integrated review analysed the correlation between critical thinking ability and clinical decision-making among nurses and confirmed contradictory results. Therefore, nurse leaders and nursing academics are called to produce quality studies to support or reject the correlation between critical thinking and clinical decision-making.^[17]

Considering the home healthcare context, chronic patients require holistic care delivered by competent nurses. It has been seen that community care nurses used complex cognitive processes involving both inductive and deductive reasoning, in order to deliver high-quality care.^[18]

The degree course in nursing is, in our context, organized as a course of the European Credit Transfer and Accumulation System (ECTS) of 180 credits. According to the current curriculum, 110 ECTS credits are destined to lessons while 67 ECTS credits are reserved for clinical practice and non-traditional teaching methods: analysis of clinical cases, practical exercise laboratories and role play. These methods are aimed at developing cognitive (critical thinking, decisional capacity, clinical reasoning), emotional and psychomotor capacities, and promoting integration between theory and practice. Nursing tutors play a key role in supporting the students.

In the literature, no studies were found which compare the capacities of nurses and those of students in carrying out assessment of patient problems using the clinical cases followed during the internship. Therefore, with this study, a method for comparing these skills in the cases followed during the practical clinical internship was formulated.

2. METHODS

2.1 Research design

A descriptive comparative study was designed, involving the students in their last year of the degree course in nursing and nurses who work in community welfare. In order to carry out the evaluation, the capacities of the students at the end of their training in the practical clinical internship were compared with the capacities of the nurses expert in that context, regarding the same clinical cases.

The principal objective of the study was to compare the care assessment carried out by the students in their last year of nursing school with that formulated by the nurses in the same clinical cases.

The secondary objectives were to compare how the evaluations of the students and the nurses in the various dominions of care assessment.

2.2 Research setting and sample

Fourteen community assistance nurses and 42 students in their last year of the degree course in nursing during their clinical practice training internship in the community were enrolled. Data collection was based on case reports identified by nursing students during their clinical experience in the community setting (Spring, 2017).

2.3 Data collection instruments and process

In the present study, the following research instruments were used:

- a nursing record structured according to the Gordon's functional health patterns and to the domains of the North American Nursing Diagnosis Association International (NANDA),^[5,19] which have been routinely used by the nursing school. It consisted of 122 items grouped in 12 domains. During the clinical internship in the community setting, the students and their nurse tutors, trained in this regard, were both asked to complete the nursing record, thereby carrying out care assessment on the same patient in a contextual manner but without consulting with each other. Assessment information was obtained by interviewing the patient, clinical observation and consulting medical charts.
- a data comparison sheet consisting of a Microsoft Excel® worksheet, which allowed analyzing the capacities of assessment of the students and of the nurses. Items referring to the assessment of the dominions were inserted into this worksheet. Subsequently, the cases, progressively numbered, were put into columns. For each item, a criterion of evaluation was established which permitted assigning a score in order to be able

to reach a final score and illustrate to the participants the correctness or not of the answer and the motive.

The scores were divided as follows:

- -1: not filled in but necessary
- 0: not filled in
- 1: filled in but not correctly
- 2: filled in correctly

When the nursing documentation of a clinical case was ready, the corresponding record on the worksheet was filled in. A score of 0 was assigned to an item which was not filled in because it was not possible (e.g., environmental evaluation for a patient seen only in the office) while a score of 2 was assigned to an item evaluated correctly and completely. A score of 1 was assigned to items which the student evaluated but incorrectly or incompletely while a score of -1 regarded an item which was not evaluated but was necessary. The concordance between nurses was high (Cohen K = 0.69).^[20,21]

2.4 Domains description

Health promotion (10 items): substance and pharmaceutical consumption, how health is perceived, what is done for health, adhesion to screening, vaccinations, accidents taking place, capacity/application of the indications relative to health, what to expect from assistance, personal care, environmental conditions.

Nutrition (24 items): diet, preferences, supplements, food allergies, liquids, appetite, swallowing, nausea/vomiting, state of teeth and the mouth, modality of acquiring and preparing food, influences on food choices, problem of wound healing, weight, recent variations in weight, height, variations in height, skin, mucosa, hair, nail and abdominal conditions, edema, glycemia, water balance, electrolytes, protidemia, sideremia, transferrin, hepatic enzymes.

Elimination/Exchange (12 items): habitual and current pattern of intestinal elimination, aids/devices, habitual and current pattern of urine elimination, aids/devices, external genitalia, diuresis, urine examinations, azotemia, creatinine and urine retention, post-void residual, sweating.

Activity/Rest (29 items): habitual and current pattern of sleep and rest, physical exercise, leisure time activities/play, energy for activities, aids, capacity of self-care, force, muscular tone, range of motion, equilibrium and gait, hemiplegia, paraplegia, tetraplegia, breathing characteristics, saturation, characteristics of tracheobronchial secretions, assisted/controlled ventilation, oxygen therapy, estimated gestational age (EGA), skin complexion, skin temperature, capillary refill time, arterial pressure, central venous pressure, pulse characteristics, peripheral pulses, cardiac electrical activity, blood count, platelets.

Perception/Cognition (11 items): state of consciousness, temporal-spatial orientation, concentration, memory, disorientation, hearing, sight, language, spoken language, reading skills, writing skills.

Self-perception (7 items): occupation, family situation, self-description (strong and weak points), opinion of the future, opinion of one’s own body, self-esteem, threat to self-esteem.

Role/Relationship (7 items): roles, family structure, family components living at home, support systems, caregiver, terms of the caregiver, social interactions.

Sexuality (6 items): sexual worries/problems, contraception, pregnancy, parity, menstrual problems, menopause.

Coping/Stress tolerance (3 items): nature of the stressors, strategies normally adopted to combat stress and their efficacy, knowledge and use of the management of stress techniques.

Life principles (2 items): projects and objectives, spirituality.

Safety/Protection (7 items): presence of invasive devices, signs and symptoms of complications, falls/traumas/lesions, safety risks, body temperature, drain characteristics, aspect of surgical wound/point of device insertion.

Comfort (4 items): environmental comfort, social well-being, physical well-being, pain.

2.5 Data analysis

The statistical analyses provided the calculation of the frequency distribution, the median, the standard deviation (SD) and the mean difference of the responses. When the calculations of the frequencies of the responses were completed, the responses “0” and “2” were considered to be correct while the responses “1” and “-1” were considered to be wrong. Comparison of the means was carried out using the Student’s t test, and a *p* value < .05 was considered statistically signifi-

cant.

2.6 Ethics

Written informed consent was obtained from nurses and nursing students who participated in the study.

3. RESULTS

The cases studied by a sample of students in community internship during the period from February 2017 to July 2017 were analyzed. Forty-two third-year nursing students were recruited during their clinical placement in the community setting. They were placed in seven different community districts of a big city in the North of Italy. Fifteen nurses who worked in the community districts where the students were placed, were also involved. Twenty-five case reports were analyzed.

The nursing students sample involved 20 females (80%) and 5 males (20%) with an age ranging from 22 and 26 years, except for a student who was 46 years old. The nurses sample involved 15 women with an age ranging from 32 and 59 years and an experience as a nurse ranging from 7 and 34 years.

Regarding the results relative to the worksheet with the evaluation of the dominions assessed, 22 out of 25 cases were considered with the remaining 3 considered outliers. Outliers were defined as a negative difference of less than 10% between the nurse and the student. As reported in Table 1, the mean of the cases carried out by the students had a mean correctness of 104.64 answers out of 122, equal to 85.77% (SD 6.91%) while that of the nurses had a mean correctness of 111.36 answers out of 122, equal to 91.28% (SD 5.73%). The mean difference of correct answers was -6.73% (-5.51) (*p* = .027). Standard deviation was higher for the nursing students group (6.99), as compared to the nurses group (11.73).

Table 1. Mean of correct answers and mean difference between nurses and nursing students

Group	Correct answers (122)		Mean difference (%)	p-value
	Mean (%)	SS (%)		
Nurses	111.36 (91.28)	6.99 (5.73)	6.73 (-5.51)	.027
Students	104.64 (85.77)	11.73 (9.61)		

Note. SD = standard deviation

In Table 2, the means of the correct responses in the various dominions relative to assessment in the sample of the students and in that of the nurses, and the difference between the means are reported, there is only one statistically significant difference in the nutrition dominion (*p* = .003).

4. DISCUSSION

The study was carried out with the aim of comparing the capacities of the students and those of the nurses regarding care assessment in the context of a practical clinical internship.

Table 2. Means of the correct responses (scores 0 and 2) of the various domains relative to the assessment of the evaluations of the group of the students and of the group of nurses, and the difference between the two means

DOMAINS (items)	Groups	Correct answers (122)		Mean difference	p value
		Mean (%)	SD (%)		
Health promotion (10)	Nurses	8.91 (89.1)	1.06 (10.6)	0.36	.391
	Students	8.55 (85.5)	1.65 (16.5)		
Nutrition (24)	Nurses	23.32 (97.17)	1.21 (5.04)	1.82	.003
	Students	21.5 (89.58)	2.35 (9.79)		
Elimination/Exchange (12)	Nurses	11.05 (92.08)	1.29 (10.75)	0.64	.192
	Students	10.41 (86.75)	1.84 (15.33)		
Activity/Rest (29)	Nurses	26.32 (90.76)	2.78 (9.59)	1.77	.105
	Students	24.55 (84.66)	4.15 (14.31)		
Perception/Cognition (11)	Nurses	10.36 (94.18)	0.58 (5.27)	0.41	.116
	Students	9.95 (90.45)	1.05 (9.55)		
Self-Perception (7)	Nurses	6.64 (94.86)	0.58 (8.29)	0.64	.087
	Students	6 (85.71)	1.57 (22.43)		
Role/Relationship (7)	Nurses	5.05 (72.14)	0.84 (12.00)	-0.36	.257
	Students	5.41 (77.29)	1.22 (17.43)		
Sexuality (6)	Nurses	5.95 (99.17)	0.21 (3.50)	0.22	.416
	Students	5.73 (95.50)	1.28 (21.33)		
Coping/Stress tolerance (3)	Nurses	2.59 (86.33)	0.96 (32.00)	0.09	.742
	Students	2.5 (83.33)	0.86 (28.67)		
Life principles (2)	Nurses	1.91 (95.50)	0.43 (21.50)	-0.09	.329
	Students	2 (100.00)	0 (0.00)		
Safety/Protection (7)	Nurses	6.41 (91.57)	1.01 (14.43)	0.55	.156
	Students	5.86 (83.71)	1.46 (20.86)		
Comfort (4)	Nurses	2.86 (71.50)	1.17 (29.18)	0.68	.074
	Students	2.18 (54.50)	1.3 (32.50)		

Note. SD = standard deviation

The characteristics distribution of our student sample (80% females and an age ranging from 22 and 26 years) was similar to that observed in the Italian nursing student population.

The results showed that there was a better capacity of assessment by the nurses with respect to that of the students, but the differences found were not particularly relevant and, therefore, it should be pointed out how internship in the context of clinical practice allows training students to perform better in carrying out assessments. The better capacity of the nurses in carrying out assessments was supported not only by the mean value obtained (85.77% vs. 91.28%) but also in the reduced dimensions of the standard deviation (5.73% vs. 9.61%). The performance of the nurses was better thanks to their greater experience which helped them in their capacity of obtaining data relative to the assessment.

Analyzing the individual domains relative to assessment showed that the performance of the students was not dif-

ferent from that of the nurses except for the nutrition domain where the students had a mean correctness of 21.50 versus 23.32 of the nurses with a statistically significant difference ($p = .003$). With regard to the nutritional domain, nurses were able to give more focused information, this result could be explained by the fact that they have cared for the patients involved in the study for a long time.

The overall results of this study were consistent with those reported by Monaghan and colleagues.^[13] It seems that the clinical internship experience permitted students to achieve a good level of performance in patient's assessment, similar to that observed in the nurse group.

Carrying out a practical internship in a clinical environment overcame the differences which are frequently found between teaching in the classroom and clinical practice, and permitted maintaining coherence between these two teaching methods.^[11] The capacities acquired by the students during

the clinical internship permitted them to obtain a positive performance; the analysis and consultation of the clinical cases decisively contributed to reaching good results on the part of the students.^[6,9]

According to Bryant's models,^[10] the present study confirmed the value of preceptorship to improve nursing students' clinical thinking, especially in the final part of their academic training. The main limit of the study was the lost of many case reports (17/42) due to the fact that they were incomplete.

5. CONCLUSION

The students in the last year of their degree course in nursing developed good capacities of assessment during the training

period of the clinical practice internship in line with the capacities of the nurses who followed them. Clinical teaching by the nurses permitted the students to achieve their results in carrying out the assessment. However, the nurses maintained a better capacity of collecting data, thanks to their experience. With respect to the various dominions of assessment, the nurses maintained a higher level in the nutrition dominion; in all the other dominions of assessment, the results were similar, demonstrating the importance of a clinical internship in the training of nursing students.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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