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Nursing students' perception of the quality of clinical learning: a mixed methods inquiry

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Abstract. *Background and aim:* As part of the Nursing Degree Course, the "internship" period represents a strategic lever to systemize the fundamental combination of theoretical study and nursing practice. However, only a few studies have examined in depth students' perception of this experience. The aim of the study was to assess the quality of the places in which the University of Parma's Nursing students did their internships based on their experience. *Methods:* Through a quantitative and qualitative study, students who had completed at least one clinical internship (n.200) were asked to fill out a self-report questionnaire on the quality of learning using the CLEQUEI scale (1) and answer a few social and demographical questions. In addition to the questionnaire, 24 narrative interviews (semi-structured) were conducted; these interviews deepened the significance of the assigned internship experience. *Results:* Throughout all the clinical contexts that were analyzed, the dimension of the perceived quality of the internship averaged a value ≥ 44 (the minimum cut-off indicating the presence of necessary elements to promote the processes of quality clinical learning). The perceived quality dimension particularly stands out in the Pediatric Area, in which it amounted to a mean value of 66 (close to the maximum cut-off value of > 66). This result indicates the opportunity to further develop the processes used in students' quality clinical learning. The latter describe the internship as a moment of both personal and professional growth of fundamental importance in one's own training process. *Conclusions:* Overall, the University of Parma's Nursing students have a good perception of the quality of clinical learning. The significance of assigned internship presents some elements which are a relevant part of the new paradigm. However, there are still some aspects which need improvement, such as the necessity to reevaluate certain parts of the teaching organization of the professionalizing activities and of the clinical internships throughout the duration of the three-year course. (www.actabiomedica.it)

Key words: clinical learning, clinical learning quality, clinical teaching model, student education, collaborative model, learning environment, learning experience

Introduction

There is great interest, both nation-wide and at European level, about the qualification of the internship as a privileged channel for entering the job market and to systematize the joining between work and professional training. Thus it shouldn't only be employed in the years at the end of training, but also in the earlier years and during curricular internships which are integrating part of nurses' three-year training.

Today's new cultural prospect about the internship underlined the importance that it has to be the designated moment for the integration of disciplinary contents, theoretical knowledge and the practical students' skills. For this reason the internship is creating a great deal of interest both in Italy and in Europe. The

cultural prospect concealed by the university internship leaves the previous idea of development of practical skills as the only pragmatic and applied approach for the future nurse. Instead, it engages a reflexive thinking it in a more project-oriented dimension for the aspiring healthcare professional (2). He is guided towards the awareness of the complexity of the areas in which healthcare professionals operate both today and in the future.

Therefore, it is advisable to organize the clinical learning context as a privileged and ideal setting oriented towards quality internship courses It start from the evaluation and monitoring of elements appropriately arranged for substantial training which should be an opportunity for learning both in a group and alone. It also uses innovative tutorial strategies also oriented towards problem based learning and guarantes professional involvement based on safety and the quality of care (2).

It is known that in order to work well in a certain context there has to be a responsible deployment of all personal abilities even in places in which knowledge in used both theoretically and practically.

The challenge is to adequately place knowledge in the real context in which the problem arises (3).

To imagine that this responsible and informed placement should exclusively mature in classroom and in university laboratories is impossible. First of all, a continuous contribution of psychological and sociological theories corroborates the now widespread awareness that the larger part of one's knowledge, particularly young people, is acquired in informal settings.

Secondly, the application of a single pedagogical perspective of a person's learning inevitably leads to setting up a training system that opens its doors to the job market, and, with an important investment in practical experience, the future nurse acquires a mindset for a stable work environment, and the importance of combining reflection with practical application. Third, the front-line training prospective pushes towards the reiteration of the education model for the internship in which both student and the healthcare professional are involved. Despite the asymmetry of their roles, they discover what goes on in observed professional behaviors. This allows us to determine which, among said behaviors, can be accepted as human actions, characterized by intent, lógos, liberty and responsibility, or which, on the contrary, are mechanical, automatic, routine actions of which one needs to be a mindful executor (4).

For all of these reasons, In this paper we aim to analyze the internship path, including all its particular variants and beginning with the curricular laboratories.

The survey methodology involves the use of assessment tools that investigate the experience of students. In our country several are used, mainly to measure the quality of clinical training environments: some were developed in the Italian context, others were borrowed from other countries after extensive validation processes.

However, at a national level, the processes used to organize internships are quite different and many are yet to be documented (4). Such instruments have been appreciated for their positive characteristics, but in time they have also shown some weaknesses, including the scarce ability to evaluate performance outcomes, meant as the assessment of the training program's efficiency and the student's fulfillment.

Furthermore, there seem to be no attempts made to investigate how the students perceive the internship proposed by the new paradigm.

Aim

The aim of this study was to analyze:
- The nursing students' experience of the internship in clinical learning settings;
- representation of the internship and the meaning the students attribute to it.

Methods

The research design was a mixed method approach (both qualitative and quantitative): observational, phenomenological, and hermeneutical.

Criteria for the recruitment of the participants

As prescribed by the guidelines written by the authors of the CLEQEI scale, the criteria of inclusion were: students attending the first, second or third year

of the degree program; students who have finished at least one internship in a clinical setting and have taken a final exam on that experience; students who were attending from 2014/2015 to 2017/2018.

The criteria of exclusion were: students who took part in an observational internship, since they didn't develop the inquired skills; students who had paused their internship period; students who didn't give their consent to participate in the study.

The students were recruited according to a convenience sampling.

Instruments

Two different tools were used to collect data:

1) A self-report questionnaire, which looks into the perception of the quality of clinical learning through the CLEQEI scale, "Clinical Learning Quality Evaluation Index" (2). The period it refers to, as recommended by the authors' guidelines, refers to the last internship the student finished. The tool consists of 22 items, which outline five main elements that are: quality of the tutoring strategies (6 items), opportunities to learn (6 items), safety and quality of care (4 items), self-learning (3 items) and quality of the learning setting (3 items). The questionnaire is based on a Likert type scale with a score that ranges from 0 (not at all) to 3 (very much) with intermediate values (1,2=enough, quite a few). The total score ranges from 0 (absence of necessary elements to promote a quality clinical learning process) to 66 (high presence). The tool questionnaire proceeded to inquire aboutinvestigates also students' social and demographical variables (i.e. gender, age, education, year attended of the course), university and work experiences, including internships, the type of setting in which it was, the most frequent type of internship (i.e. with a tutor or with a group).

2) The interview, a narrative semi-structured interview was built ad hoc (7) and it was so structured: a start question in order to aid the student in familiarizing with the setting ("how are you doing?"), a stimulus question to open the conversation ("please, tell me about your internship experience"); central questions which inquired about the meaning of the interview (i.e. "which are the characteristics that an internship should have?") and a final question ("would you like to tell us something else you deem useful in a clinical internship setting?").

Data analysis

The statistical analysis was conducted by using the program IBM SPSS *Statistics* 25th version (5). The continuous variables are presented as media ± standard deviation, while the categorical variables, as numbers and percentages.

The significance between continuous variables, after making sure that the sample was being distributed normally, was analyzed by using parametric statistics after a pre-test to evaluate the homogeneity of the variances.

Pearson's correlation test was used in order to analyze the correlations between investigated elements and other variables (gender, not terminated university experiences, etc.).

According to the results of the factorial analysis synthesis indicators for each dimension were constructed: quality of the tutoring strategies (α=0.85), learning opportunities (α=0.87), safety and quality of care (α=0.76), teaching oneself (α=0.83), quality of the settings for learning (α=0.88). Each indicator contains the questions pertaining to its specific area. The psychometric properties of the instrument were good (<=0.93).

The interviews were recorded and have been transcribed using a voice-to-speech verbatim tool. In addition to the spoken text, pauses, sighs, emotion and changes in the voice of the participants were noted. After the transcription of each narration, a two-level analysis was conducted.

The first level analyzed the thematic content through the careful reading of the transcription, breaking down the communicative unit of each narration in simpler segments (sentences) and a subsequent categorization (A, B, C, D, and E) and sub-categorization for a quick reference of the investigated topics: *the meaning given to the assigned internship by the student, the characteristics of the student, the student's role during the apprenticeship, considerations on clinical internships, aspects of the clinical internships that could be improved.*

Afterwards, we calculated the frequency of each subcategory in the narrative and a global evaluation

using the data triangulation technique. Only the results that reached a unanimous agreement among the researchers in the attribution of categories and subcategories were included. A second level analysis counted the word most often repeated during the interviews by using the Word Counter software developed on an OsX platform (8).

The use of a computer program made it possible to obtain different types of indexes, such as vocabulary variety, the frequency and the co-occurrence of words.

Grids to organize the objectives and research questions were designed by using three different strategies:

1) The binary coding, which indicates if the category appears in the analysis unit or not;
2) The indication of frequency with which the category appears;
3) The indication of the strength or intensity with which the category is represented.

Each category was given a numerical value in relation to the analysis of the content. The calculation of such value was based on elements such as semiotics, the grammatical elements of the linguistic structure (words, prepositions, and statements) to interpret and analyze information derived from the transcription of the recorded interviews.

Ethical considerations

The research protocol was approved by the President of the Degree Course in Nursing at the University of Parma and by the Directors of the Professionalizing Education Activities of Parma and Fidenza.

To consent to the study, the participants signed a document with an informative section and while the other was reserved for the authorization of the processing of personal data according to regulations (12). The anonymous compilation of the quantitative information enabled students to freely express their opinions. Personal data was processed according to the current privacy policy. The audio recordings of the interviews were exclusively listened to by the researchers only for the purposes of this research and weren't divulged in any way or under any circumstance.

Participants

200/360 Nursing Degree Course students from the University of Parma participated in the quantitative study, while 24 participated in the qualitative one. Seventy-five percent was female (151) and 25% was male. Ninety-five percent of the students were Italian, . 28% (56) attended the first year, the 25% (50) the second year, and the 47% (94) the third year, 4% (2) of the participants were part of the 2014-2015 cohort, 33,5% (67) belonged to the 2015-2016 cohort, 30,5% (61) to the 2016-2017 cohort and 34% to the 2017-2018 cohort.

Among the participants, 84% were based in the Degree Course at the University of Parma Teaching Hospital's Local Sanitation Unit (USL), while 18% (36) belonged to the Local Sanitation Unit at the Fidenza Vaio Hospital and at the Borgotaro location.

Results

Questionnaire results

The first results concerned the learning quality among the students of the three-year course. The results demonstrated that there aren't any statistically significant differences between course year and certain elements such as "Quality of the tutoring strategies" (p=.179), "Learning opportunities" (p=.374), "Teaching oneself" (p=.340) and "Quality of the tutoring strategies" (p=.834). Instead, comparing it to the "Safety and quality of care" item, a statistically relevant difference emerged.

A second result regarded the perceived quality of students' learning in different clinical internship settings.

A mean value of each inquired element was calculated in relation to the clinical area in which the internship was done. Afterwards, an average of all investigated elements was estimated.

These results pointed out that the dimensions regarding perceived quality had a mean value of ≥44 (cut-off that indicates the presence of necessary elements to promote quality clinical learning processes in all the considered clinical settings).

Only the pediatric settings showed an average value close to the maximum cut-off (66) since all the considered items were related to the quality of learning, thus indicating an elevated presence of all the elements which stimulated the development of quality clinical learning processes in the student (table 1).

Another interesting fact is that there were not any statistically relevant differences between the final evaluation of the internship course and the "Quality of tutoring strategies" (p=.975), "Learning opportunities" (p=.665), "Auto didactical learning" (p=.194), "Quality of the learning settings" (p=.961) and "Safety and quality of care" (p=.825).

Furthermore, social and demographical variables (age, gender, nationality) did not highlight any significant relation to the learning quality in clinical settings perceived by the students.

Finally there is not any correlation between tutoring model, investigated elements, and gender.

On average, students said they had the opportunity to meet with their tutors to evaluate their learning needs (table 2); however, 50/200 answered "not at all" when asked if they had that opportunity.

Interview results

The aspects pertaining to the macro-areas investigated during the interviews relate to the *internship characteristics* (65/244) and to the *internship related considerations* (63/244); in particular, most of the interviewed students (20/24) thought *politeness* and *humility* to be important and indispensable characteristics to be able to tackle and successfully complete the clinical internship experience.

Table 2. Meetings to evaluate learning needs (Frequency F percentage % _ N = 200)

Was I offered to have meetings to discuss my need during the learning process?				
	Frequency	Percentage	Value percentage	Cumulatin percentage
	1	,5	,5	,5
Enough	61	30,5	30,5	32,0
Many	34	17,0	17,0	48,0
Too many	54	27,0	27,0	75,0
None	50	25,0	25,0	100,0
Total	200	100,0	100,0	

For that which concerns *the meaning that the students attributed to the clinical internship*, they described it as an important experience, for both personal and professional growth, during their training process.

Some students (26/244) pointed out that they think the professional didactic activities should be reorganized and that there should be a more detailed description of clinical internships throughout the three year course.

These results helped to shed light on the experiences and the deeper meanings, as well as the representation that the student had of him-or-herself had during the clinical internship (table 3).

In the first part of the interviews the students, through free flowing thoughts, expressed their ideas regarding what they experienced during their internships.

Table 1. Quality dimensions of clinical learning in the different learning areas (Range of the scale 0-66 N=200)

Learning areas	Quality tutorial strategies (0-18)	Learning opportunities (0-18)	Safety and quality of care (0-12)	Self-learning (0-9)	Quality learning environment (0-9)	Total
Clinic	11,38	13,16	9,91	4,58	5,66	44,71
Territorial assistance	14,57	14,93	10,73	6,20	7,60	54,03
Surgery	13,50	13,66	9,5	5,00	6,66	48,33
Critical care/emergency department	13,25	12,25	8,00	4,00	8,25	45,75
Pediatrics	18,00	18,00	12,00	8,50	9,00	65,50
Medicine	13,38	14,87	8,93	5,73	7,56	50,48
Geriatrics	14,50	16,00	10,66	6,00	7,33	54,50
Other (psychiatry)	12,10	12,77	9,00	4,90	7,10	45,87
Total average	13,21	14,17	9,68	5,43	7,16	49,67

Table 3. Words repeated most frequently said by the participating students (Frequency F subjects) N = 24

Words	Frequency	Subjects
Tutor	68	24/24
Internship	58	24/24
Learning	11	13/24
Education	14	20/24
Need	13	11/24
Growth	7	9/24
Clinic	26	15/24
Student	42	24/24

From the information we gathered from the interviews, we have noticed that students deemed the experience "good" or "bad" in connection to the clinical tutor they were with. Thus, tutor training becomes prioritized as it is linked directly to the quantitative or qualitative increase which we mean to activate as part of curricular internship courses (table 4).

Some of the most important considerations were reported.

INTERVIEW 1: "*it was for the tutors to trust us students, I get it that they might have negative experiences, but if they don't trust the student that's with you, it becomes difficult for both of us to do what we need to. I clearly felt anxious in doing things: for example, if I had to give a patient an injection, with my clinical tutor almost overwhelmingly close saying things like 'do it this way, not like that', instead of thinking of what rules I had to keep in mind when giving a shot, like the 8 G's, I also had to think about how the tutor wanted me to do things. I think some tutors want you to do things how they do them and that's it, but we're not all the same!*"

INTERVIEW 2: "my internship experience was dictated by how my tutors were, it depended on what they made me love and hate about a certain ward/unit or what the nurse had to do in that setting…"

Feelings related to students' internship experiences, are quite an imporantt part of the interviews. The emotions helped us understand how students experience internships.

INTERVIEW 3: *"I felt part of something… of a team. I learned to deal with and speak to people…",*

"surely there are loads of emotions because I was already anxious to learn things correctly, but also because I had responsibilities, but it helped me a lot because I learned so much…",

"It's a difficult moment because you have to learn how to deal with a job for the first time, and for someone who has never done something like this it's quite difficult, but it repays you well both personally and professionally".

We asked the students a series of questions which helped us inquire about one of the objectives: "*the representation of the student during clinical internships*", . So

Table 4. Narrative semi-structured interview categories and sub-categories N=24

A: Meaning that the student gives to the internship training	A1: personal and professional growth	A2: educational experience	A3: sharing of emotions felt during the internship experience	
B: Characteristics useful for students during internships	B1: politeness and humility	B2: positive attitude	B3: availability to list	B4: reasons that support this experience
C: Student's role during the internship	C1: tutor coaching	C2: team collaboration		
D: training course consideration	D1: trained tutors	D2: tutor-student relationship	D3: clinical training teaching organization	
E: Aspects improved in future experiences	E1: setting as a good learning environment	E2: internship experience satisfaction		

we transcribed some of the most significant answers wereceived from students. We noticed that many interesting facts emerged from the investigated areas. Regarding the meaning of the clinical internship, a few students answered:

INTERVIEW 4: "*I think [the internship] it's the most important part of the degree course…*"; *"it's a fundamental educational moment";*

INTERVIEW 5: *"growth, maturation.. both professionally and personally*"; "*for me it was about practicing what they had taught us in the classroom, but even more if you apply what you study, and you try to do it well. In the end you are satisfied, and it validates what you've been doing up till now."*

Students then described what characteristics a person should have to do well inthe clinical internships, recognizing the importance of politeness, the ability to listen, interest, and humility.

INTERVIEW 6: *"Well, I think you should be polite, of course, you have to listen to advice, you can't impose yourself as a superior…"; "one should be very interested, humble… because without these two things it's difficult to make progress, they are fundamental for someone who wants to learn, to know and study in depth…"; "…you have to recognize your mistakes, you have to be curious and respect others…"; "the student should be pro-active, open to learning new things."*

We then asked students what they thought we should improve in the future about the internship program. We encountered some critiques regarding the organization of the first-year internship.

INTERVIEW 7: "*Yes, I insist there are some things which should be improved, I think the tutors you choose should want to tutor students and they should be trained to explain things appropriately, I mean they should be competent in this area, they should understand how a student's learning process works. I know that after a certain number of years you don't remember how you learned certain things yourself,"; "No, describing an internship as an observational activity should be reconsidered..."*

INTERVIEW 8: "*The first year the didactical organization was modified, but then you get to your second year and you're behind…"; "no, there are surely many things to improve, tutors should be motivated to teach students. I would like to use the Spanish or the English model in which the degree course lasts four years instead of only three, but you learn much more…"*

Discussion and conclusion

In both national and international literature, it is quite clear how the meaning of a nursing student's curricular internship has evolved as well as its purpose and its pedagogical foundations behind such activity (1).

It's legitimate to think that the attention given to internship programs also favors the quality of clinical learning.

The new internship paradigm carefully analyzes the "Principles and Standards of Professional Internships" document in relation to Degree programs in Healthcare. It's a perspective that leaves the idea of development of practical skills as the only pragmatic and applied orientation for a future nurse. In addition, it takes on reflective action and helps to realize the projected goals of the aspiring healthcare professional, who can then become aware of the complexity in which professionals work today and even more so in the future.

The research shows that students perceived their internship as a good experience in all clinical settings (outpatient/clinic, territorial care, surgery, critical area, pediatrics, medicine, geriatrics and psychiatry). In particular, learning and self-teaching opportunities were seen as innovative strategies which are oriented towards *problem based learning* and professional aid based on the safety and quality of care (8).

Only the pediatric setting presented an average value close to the maximum cut-off (66) thanks to the investigated factors on the quality of learning, indicating a high presence of all stimulating elements in the development of the quality of the student's clinical learning processes.

Generally the results are usefull to implement those programs which were oriented towards the development of certain aspects (i.e. educational strategies) so that each area of qualitative development can

be received by the students as highly significant and valuable from an educational point of view.

This theory of doing well in a work setting as a result of the abstract transmission of science even from a well-known and efficient "school" isn't a novelty. Actually, it asks for free and responsible mobilization of all personal abilities, and said mobilization can only take place in settings in which knowledge finds both a concrete and reflective realization.

Bruner remembers that the challenge we face is always that to put our knowledge in the real context in which the problem presents itself (9). At this point, it is impossible to imagine the university classroom without these outside placements to ensure the professional development of students.

Therefore, the quality of the experiences gives meaning to the time spent doing internships. According to what the students said, the abundance of educational activities offered, a rigorous projection and the carrying out these internships determine a quality learning.

So, it's necessary to find a useful balance between quality and quantity of these internships. In this way, confirming what emerged from scientific literature, students perceive the internship as a moment to grow both professionally and personally. Finding a useful balance between quality and quantity of the internships is of fundamental importance. We must also consider that it isn't enough that students complete the required number of attendance hours, but that they have fulfilled the satisfactory educational requirements in order to sanction the completion of the internship (10).

In the perspective of quality, personalized internship programs are recommended in order to consider students' need to increase the number of internship experiences in order to complete their professional training. At this point, tutorship training becomes a priority which is directly linked to the increase in quality and quantity that we intend to apply to future curricular internship programs. As some good practices of the degree courses in Healthcare stated, the training of university tutors and that of tutors of premises is understood as a shared training alliance between clinical settings and universities.

Without a valid tutoring system, indeed, we risk compromising the acquisition of reflexivity as an essential basis of clinical learning and the student is exposed to the risk of learning by imitating a non-critical and reflexive care practice. On the contrary, a good tutoring is based on the pedagogical model of the Socratic maieutic - in that it is oriented to helping the student "give birth to" solutions and proposals for assistance and care problems that he or she encounter- and it is centered on an active learner (11).

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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