

Peer learning in the clinical education of nursing students: Outcomes evaluation of a structured program in Italy

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ABSTRACT

Purpose: The aim of our study was to evaluate the outcomes of peer learning in the clinical education of nursing students by comparing the points of view between junior and senior students, and their tutors. The secondary aim of this study was to compare the level of anxiousness perceived by junior and senior students in specific situations experienced during clinical education.

Design: A qualitative descriptive study.

Materials and Methods: A sample of 60 junior and 28 senior students was selected to anonymously respond to ad-hoc questionnaires. A Focus Group was used to evaluate the tutors' experience. A tool validated by Kleehammer, Hart & Fogel Keck (1990) to study the causes of anxiety in students during clinical education was used with some modifications.

Results: Fifty junior students and 26 senior students responded to the questionnaire on peer learning and 6 expert tutors took part in a Focus Group. The students showed a good level of agreement on the positive effects of peer learning. Also the tutors gave positive evaluations and expressed a good level of satisfaction. Statistically significant differences were observed in the responses between the two groups of students on some items regarding the atmosphere and communication between students and the role of senior students in helping junior students learn professional competences. The importance of the tutors' significant and constant support in preventing and addressing the difficulties of the senior students in their role as educators was also highlighted. The results obtained from the questionnaires on situations triggering anxiety during clinical apprenticeship showed that senior students had a higher level of anxiety than the junior students.

Conclusions: Results confirmed the positive effects of peer learning reported by other studies in literature on junior and senior students as well as on tutors. The point of view of the ward nurses involved in the study still needs to be documented.

Clinical relevance: These results provided indications on how to improve the peer learning project implemented in the Faculty where the study was conducted and could be used for similar projects in other settings.

Key words: Peer learning, peer mentoring, peer coaching, peer group

In a review of 16 studies, mentoring was defined as “a process where a person with more skills and experience plays a role model, teaches, encourages and offers support to a less expert person for his/her professional and personal development”. Of these studies, five focused on experiences of peer mentoring (Dorsey & Baker, 2004). When a more expert student (senior) is involved in the team of educators to guide less expert students (junior), it is necessary to ensure that, although at a different level of competence, he/she shares the objectives and the methods of tutoring. Gray and Smith (2000) reported that students considered effective those tutors who provided support showing their trust, encouraging them to play an active role in caring for patients and prove to be independent and full of initiative. Goldsmith, Stewart and Ferguson (2006) found that both junior and senior students made positive evaluations in relation to their experience with peer learning. The most positive points highlighted by the students included a good learning climate and the possibility to check their own competences. Instead, two of the main issues were related to organizational problems regarding the time and the opportunities students had to meet with each other. With regard to the motivations in favour of spreading the peer learning experience in the clinical context, some studies described the difficulties nurses had in dealing with students on a continuative basis, also due to scanty resources (Yates et al., 1997; Bradshaw et al., 2002; Aston & Molassiotis, 2003). A qualitative study on an experience of peer learning (Yuen Loke & Chow, 2007) reported improved learning skills, problem solving, critical thinking, communication, increased motivation and sense of responsibility. In an experience of peer mentoring (Yates, Cunningham, Moyle & Wollin, 1997) junior students reported reduced anxiety, more trust and motivation, and more integration between theory and practice. This and other studies (Aston & Molassiotis, 2003; Kleehammer, Hart & Fogel Keck, 1990; Gilmour, Kopeikin & Douchè, 2007) recommend that senior students to receive appropriate support from expert tutors. Clarity over the senior student’s role is particularly important. According to Scott (2005) it should be made clear that a senior student is a professional role model and not a friend or a therapist. A sort of initial ‘contract’ between senior and junior students on mutual expectations and on the role of the senior students can help avoid misunderstandings and problems. Blowers et al. describe various models of peer tutoring. In a small group, peer tutors facilitate interaction between the group members and the implementation of knowledge in clinical practice, helping students identify their learning needs (Blowers, Ramsey, Merriman & Grooms, 2003). In Duchscher’s experience (2001), the senior students improved their independence and leadership skills by guiding the junior

students in their acquisition of competences and reflective skills. A quantitative study by Glass and Walter (2000) focusing on peer mentoring in a group of female students, highlighted personal and professional development and the possibility to put into words their weaknesses. Reduced anxiety in junior students and increased self-esteem in both senior and junior students were also reported in the studies of Godson, Wilson and Goodman (2007). Broscious and Saunders (2001) showed that senior students developed the ability to involve junior students in taking on the professional role also by learning care planning skills. Some studies reported the usefulness of peer learning in particular categories of nursing students (with ethnic problems, family conditions, age and the risk of dropout) (Aviram et al., 1998; Blowers et al., 2003; Jeffrey, 2001; Higgins, 2004). The contribution of senior students proved to be effective also in these cases. Several authors (Smith, 2007; Pullen et al., 2001; Grams et al., 1997; Kuo et al., 2007; Hughes, 1998; Beck, 2001) revealed that caring, used by educators towards their students, helped improve the students’ caring skills towards their patients. Some studies on peer learning describe what actions they took to train senior students in playing their role as such. Specific training sessions are organized (between a few hours up to two days) (Yates et al., 1997; Yuen et al., 2007; Aviram et al., 1998; Broscious & Saunders, 2001), in two cases using also the role-playing method (Aviram et al., 1998; Broscious & Saunders, 2001). Yuen Loke et al., (2007) report about a written operating guide, developed by the educators. In studies focusing on clinical education of nursing students, anxiety is a recurring topic. Sprengel and Job (2004) investigated the situations that caused anxiety in the first-year students by using a tool validated by Kleehammer, Hart and Fogel Keck (1990); according to the senior students, the guide allowed to reduce anxiety. Kleehammer et al. (1990) compared the level of anxiety between the junior and senior students and the differences between the mean scores of the junior and the senior students were statistically significant for some items. Cook (2005) instead reported about the anxiety of students towards their educators. The senior students exhibited more concern towards their educators than the junior students. The results of these studies could also be used for peer learning experience: since senior students are more aware of the concerns of the students they ‘take care of’, they could easily contribute to make learning more effective and create a more serene atmosphere.

Purpose

The purpose of this study was to evaluate the results of a peer-learning structured program during the period of clinical apprenticeship of nursing students. In particular, to identify the effective and critical aspects,

Table 1. Themes and criteria drawn from the literature to draft the questions of the questionnaires on peer learning for students and prepare the Focus Group guidelines for Tutors

THEME: COMMUNICATION & CARING	
Criteria	References
Open communication, trust, non judging atmosphere, feedback, integration within the team	Yates, Cunningham, Moyle and Wollin, 1997; Gray and Smith, 2000; Goldsmith, Stewart and Ferguson, 2006; Yuen Loke and Chow, 2007; Kleehammer, Hart and Fogel Keck, 1990; Blowers, Ramsey, Merriman and Grooms, 2003; Duchscher, 2001; Glass and Walter, 2000; Godson, Wilson and Goodman, 2007; Broscious and Saunders, 2001; Jeffrey, 2001; Sprengel and Job, 2004
Self-confidence, motivation, personal growth, responsibility	Yates, Cunningham, Moyle and Wollin, 1997; Gray and Smith, 2000; Yuen Loke and Chow, 2007; Duchscher, 2001; Broscious and Saunders, 2001; Sprengel and Job, 2004
Reduction of anxiety	Yates, Cunningham, Moyle and Wollin, 1997; Aston and Molassiotis, 2003; Yuen Loke and Chow, 2007; Kleehammer, Hart and Fogel Keck, 1990; Aviram, Ophir, Raviv and Shiloah, 1998; Broscious and Saunders, 2001; Pullen, Murray and McGee, 2001; Grams, Kosowsky and Wilson, 1997; Beck, 2001; Sprengel and Job, 2004
Caring provided by senior students as a model for caring for patients	Aston and Molassiotis, 2003; Glass and Walter, 2000; Pullen, Murray and McGee, 2001; Grams, Kosowsky and Wilson, 1997; Kuo, Turton, Lee-Hsieh, Tseng and Hsu, 2007; Hughes, 1998; Beck, 2001; Sprengel and Job, 2004
THEME: LEARNING PROFESSIONAL SKILLS (relational techniques, problem solving, reflection on practice)	
Criteria	References
Asking/receiving questions, Searching data from different sources, theory/practice integration, support during activities, clinical reasoning, reflection on practice	Yates, Cunningham, Moyle and Wollin, 1997; Goldsmith, Stewart and Ferguson, 2006; Aston and Molassiotis, 2003; Yuen Loke and Chow, 2007; Blowers, Ramsey, Merriman and Grooms, 2003; Duchscher, 2001; Sprengel and Job, 2004; Broscious and Saunders, 2001
THEME: LEARNING MODEL AND SENIOR STUDENT'S ROLE	
Criteria	References
Senior S's role and expectations, help resolve learning problems, good use of errors, guide towards independence	Yates, Cunningham, Moyle and Wollin, 1997; Gray and Smith, 2000; Kleehammer, Hart and Fogel Keck, 1990; Duchscher, 2001; Sprengel and Job, 2004;
Senior as model/confirmation of professional choice	Goldsmith, Stewart and Ferguson, 2006; Bradshaw, Rule and Hooper, 2002; Scott, 2005; Higgins, 2004; Pullen, Murray and McGee, 2001; Sprengel and Job, 2004
SPECIFIC THEMES FOR SENIOR STUDENTS: Difficulties, support tools, personal and professional results	
Criteria	References
Specific training for senior role, written practical guide, Educators acknowledge senior's role and support them	Yates, Cunningham, Moyle and Wollin, 1997; Aston and Molassiotis, 2003; Yuen Loke and Chow, 2007; Gilmour, Kopeikin and Douchè, 2007; Aviram, Ophir, Raviv and Shiloah, 1998; Scott, 2005; Godson, Wilson and Goodman, 2007; Broscious and Saunders, 2001; Sprengel and Job, 2004
Anxiety, uneasiness in senior's dual role as student and educator	Aviram, Ophir, Raviv and Shiloah, 1998; Godson, Wilson and Goodman, 2007
Increased knowledge and skills, fulfilment, helpful to pass from student to future professional	Yates, Cunningham, Moyle and Wollin, 1997; Goldsmith, Stewart and Ferguson, 2006; Bradshaw, Rule and Hooper, 2002; Aston and Molassiotis, 2003; Blowers, Ramsey, Merriman and Grooms, 2003; Duchscher, 2001; Broscious and Saunders, 2001; Sprengel and Job, 2004

compare evaluation analogies and differences between junior and senior students and their tutors, and finally to gather suggestions on how to improve the implementation of the peer-learning project. Secondly, in relation to the situations that generated anxiety during apprenticeship, the perceptions senior students had about in anxiety in junior students were compared with the perceptions the latter had about themselves.

Methods

This qualitative descriptive study was conducted at the Nursing Degree Course of Nursing in the Faculty of Medicine 'San Luigi Gonzaga' at Orbassano (Turin), Italy, in the academic year 2007-2008. In 2006, a student created an 'operational guide' for senior students on the basis of a research conducted the previous year by another student who reported the evaluation of the experience of the first-year students who had experienced peer coaching with the third-year students during their apprenticeship. Experimental use of the 'operational guide' was made in six wards and this same project was evaluated again the following year in the same wards. The results obtained from these studies allowed the Faculty to improve the peer learning project during apprenticeship currently carried out in all wards where junior and senior students are contemporaneously present. An ad hoc training session was organized for the senior students, which included, also through role playing, the fundamental themes of peer mentoring and a discussion on the written 'operational guide' they were going to use. Senior students were supported in their role by the nurses and the tutors of the wards, under the guidance of expert tutors (area tutors), who were also full time educators working in the Faculty and have the duty to supervise education in the various clinical areas at the clinical education centres. In order to evaluate this experience, we used questionnaires for the students and a focus group for the tutors.

Questionnaires for students on peer learning

The themes and the respective criteria used to develop the questions were drawn from literature and summarised in Table 1. We used the 5-level Likert Scale (1 = strongly disagree; 5= strongly agree) and also included the option "not assessable" (NA) to avoid having answers that did not correspond to reality in the event of items referred to aspects that may not have been experienced. In order to make a comparison between the groups, the questionnaires for the junior and the senior students included the same items (28 items), they only changed in the way they were formulated. Only for the senior students, 12 extra items focusing on their role or learning of some specific skills were included. As in the study conducted by Goldsmith, Stewart and Ferguson (2006), we included an item on the best or worst aspects of their experience. There was also some space dedicated to free comments and

suggestions, and they were asked to give an overall score to their experience on a scale from 1 to 10.

Cronbach's Alpha was used to measure the internal consistency of the questionnaire.

Focus Group for tutors

Focus Groups include discussion among participants to explore and clarify opinions on a theme of common interest in a climate of freedom of expression and absence of judgment (Albanesi, 2004). Therefore, we chose this method to analyse and make a detailed evaluation of the expert tutors' peer-learning experience with the students in the Faculty.

Questionnaires on the causes of anxiety in students during their apprenticeship

To document the causes of anxiety in students during their apprenticeship we used a tool validated by Kleehammer et al. (1990), which was also used by Sprengel and Job (2004) but with some modifications. This was a questionnaire where respondents had to express their level of agreement, through a 5-level Likert Scale (1= strongly disagree ; 5 = strongly agree), relating to 16 situations that could generate anxiety during apprenticeship. We decided to remove two items from the original tool ('being late' and 'getting ready in advance in hospital') because they were inadequate for our context and added the items 'answering to educators' questions' and 'talking to patients' (already added by Sprengel and Job, 2004 in their study) considered to be useful to document possible sources of anxiety. Before stating their very first period of apprenticeship, junior students were asked to express their level of agreement on the level of anxiety they believed they could have had for each situation included in the questionnaires. Senior students were asked to express the level of anxiety each situation could generate in junior students. The purpose of this was to compare the perceptions of the two groups of students and see if what the senior students declared could be the causes of anxiety in junior students actually corresponded to what the junior students themselves said.

Sample

Students: we included students who had done their 6-month apprenticeship in the same period in 15 wards and in different clinical areas (medicine & general surgery, urology, orthopaedics, neurology, and pneumology). The sample included 60 first-year students (junior) doing their first apprenticeship and 28 third-year students (senior) who had attended the special training session on peer coaching of junior students.

Tutors: this sample included 6 expert tutors of the Faculty (clinical area tutors) each of whom were in charge of the wards belonging to the six clinical areas where the students did their apprenticeship.

Table 2. Atmosphere, Communication and Caring Among Students

Question	1		2		3		4		5		NA		(Fisher's Exact Test) P
	J	S	J	S	J	S	J	S	J	S	J	S	
	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	
Open atmosphere			7 14%	1 3.8%	7 14%	4 15.3%	9 18%	9 34.6%	27 54%	12 46.1%			0.303
Atmosphere of trust	1 2%		5 10%		12 24%	5 19.2%	7 14%	11 42.3%	25 50%	10 38.4%			0.040
Non-judging atmosphere		1 3.8%	7 14%		9 18%	6 23%	10 20%	6 23%	23 46%	13 50%	1 2%		0.180
Self-confidence	5 10%	1 3.8%	6 12%	2 7.6%	9 18%	3 11.5%	15 30%	12 46.1%	15 30%	8 30.7%			0.655
Motivation in achieving one's aims	3 6%	2 7.6%	5 10%	2 7.6%	8 16%	2 7.6%	19 38%	9 34.6%	15 30%	11 42.3%			0.781
Sense of responsibility	3 6%		6 12%	1 3.8%	12 24%	3 11.5%	12 24%	6 23%	17 34%	16 61.5%			0.163
Personal growth	2 4%		6 12%	1 3.8%	6 12%	5 19.2%	21 42%	5 19.2%	15 30%	15 57.6%			0.065
Free expression of emotions (S vs. J)	4 8%	2 7.6%	6 12%	4 15.3%	12 24%	4 15.3%	9 18%	8 30.7%	15 30%	8 30.7%	4 8%		0.601
Usefulness of humour			8 16%	1 3.8%	5 10%	1 3.8%	11 22%	5 19.2%	26 52%	19 73%			0.253
Reduce anxiety (S vs. J)	2 4%		6 12%		7 14%	1 3.8%	15 30%	13 50%	20 40%	12 46.1%			0.111
Feedback (S vs. J)	1 2%		5 10%		10 20%	5 19.2%	18 36%	9 34.6%	16 32%	12 46.1%			0.441
Integration within team (S vs. J)	4 8%		6 12%	1 3.8%	6 12%	2 7.6%	17 34%	10 38.4%	17 34%	13 50%			0.379
Senior S. caring/caring for patients	6 12%		7 14%	1 3.8%	10 20%	5 19.2%	11 22%	9 34.6%	16 32%	11 42.3%			0.187

J = junior students (n=50), S = senior students (n=26)
 1 = strongly disagree 5 = strongly agree NA = not assessable

Procedures for data collection

The questionnaires together with a guide on the purposes of the survey and the warranty of anonymity were administered before beginning the period of apprenticeship (on anxiety) and at the end of the apprenticeship (on peer learning).

The Focus Group lasted 2 hours and it was led by two nurse educators of the Faculty who were experts of this method. The leader of the discussion used a general outline of the topics (the same themes included in the questionnaires designed for the students). An assistant took notes of the comments on the interactions among participants and recorded the session with the participants' consent.

Data analysis

The F-test of the questionnaires was made to compare the average scores and Fisher's Exact Test for frequency distribution (Alpha level = 0.05).

For the Focus Group, the quantitative analysis of the contents was made using the audio-recordings and the assistant's notes. The concepts were classified into categories relating to the themes contained in the discussions. The participants' most significant sentences were collected.

Results

Questionnaires for students on peer learning

Fifty questionnaires were compiled by junior students

Table 3. Learning Professional Skills

Question	1		2		3		4		5		NA		(Fisher's Exact Test) P
	J	S	J	S	J	S	J	S	J	S	J	S	
	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	n. %	
S's answers to J's questions			1 2%		10 20%		6 12%	5 19.2%	33 66%	21 80.7%			0.037
Search data from different sources			8 16%	1 3.8%	7 14%	2 7.6%	15 30%	8 30.7%	19 38%	15 57.6%	1 2%		0.283
Use of theory in practice			6 12%		8 16%	1 3.8%	15 30%	11 42.3%	21 42%	14 53.8%			0.096
Understanding terminology			5 10%		7 14%	1 3.8%	14 28%	4 15.3	24 48%	21 80.7%			0.041
Clinical reasoning	1 2%		5 10%		7 14%	3 11.5%	17 34%	12 46.1%	19 38%	11 42.3%	1 2%		0.475
Global vision of patients			5 10%		13 26%	1 3.8%	18 36%	12 46.1%	14 28%	13 50%			0.015
Support for techniques	1 2%		3 6%		10 20%	2 7.6%	12 24%	5 19.2%	24 48%	19 73%			0.234
S's guide vs. Nurse's guide	5 10%		5 10%		9 18%	2 7.6%	5 10%	4 15.3%	26 52%	20 76.9%			0.075

J = junior students (n=50), S = senior students (n=26)
 1 = strongly disagree 5 = strongly agree NA = not assessable

and 26 by the seniors students were handed back because some of the students were absent when the questionnaires were handed out.

The answers to the question on the 'frequency of the meetings between senior and junior students during apprenticeship' indicated that most of the students (50% of the senior and 48% of the junior students) had met almost every day; a substantial part (35% S and 38% J) every day and those who met only occasionally (15% S and 14% J) declared that this was due to organizational problems within the ward. The responses obtained from the questionnaires were then grouped together according to the themes previously identified. The responses between level 4 and 5 of the Likert Scales were considered to be in agreement, those included between level 1 and 2 in disagreement, and level 3 intermediate.

In relation to the theme Atmosphere, Communication and Caring Among Students (Table 2), a statistically significant difference was found only in the item on trust in the relationship among students when comparing the distribution of the frequencies between the two groups ($p= 0.040$). As a whole, more than 80% of the senior sample expressed agreement, whereas the junior sample was divided into two: 50% expressed strong agreement (Level 5), whereas the other 50% was distributed across other levels, mainly in the intermediate one (Level 3).

Also with regard to 'atmosphere of openness' among students, more than 80% of the senior and about 70% of the junior sample declared their agreement. The answers on the 'non-judging atmosphere' produced slightly smaller percentages (73% S and 66% J). Participants declared that guiding (for the senior) or being guided (for the junior) enhanced: trust in themselves (76.8% S and 60% J), motivation to achieve their own aims (76.9% S and 68% J), sense of responsibility (84% S and 58% J) and personal growth (76.8 S and 72% J).

Senior students showed a higher level of agreement than junior students in their role in encouraging the free expression of emotions (61.4% S and 48% J); about 20% from each group expressed their disagreement with this item. Both groups agreed on the usefulness of humour in the relationship between students (92.2% S and 74% J). The contribution of the senior students to the reduction of anxiety in the junior students was considered to be significant by 96.1% of the senior students and 70% of the junior students. Senior students declared to provide feedback on 82% of the cases, whereas 68% of the junior students agreed with this and 20% disagreed. Similar percentages were observed in relation to the senior students' ability in favouring integration of the junior students in the wards. With regard to the caring skills of the senior students providing caring models for patients, 54% of the junior students agreed and 26% disagreed, whereas the senior students

Table 4. Role of Senior Students

Question	1		2		3		4		5		NA		(Fisher's Exact Test) P
	J	S	J	S	J	S	J	S	J	S	J	S	
	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	n.	
Clarity of senior S's role	2		9		11	8	15	7	9	11	4		0.024
Agreement on type of guide	4	1	8	1	15	5	12	7	8	12	3		0.065
Support during assessment	3		3		13	11	18	9	13	6			0.420
Problem solving	4		4		8	7	14	12	16	7	4		0.134
Utility of errors	4		8	1	7	1	17	13	12	11	2		0.094
Guidance towards independence	3		5		9		12	12	21	14			0.012
Senior Students as a professional model	3	1	5		4	1	10	16	28	8			0.005
Confirmation of professional choice	6		4		10	4	11	12	19	8	2		0.072

J = junior students (n=50), S = senior students (n=26)
 1 = strongly disagree 5 = strongly agree NA = not assessable

showed a higher percentage of agreement (76.9%).

With regard to the theme 'learning professional skills' (Table 3), we found statistically significant differences in the answers given by the two groups in relation to the following items: willingness of the senior students to answer to the questions of the junior students (p=0.037), help in understanding specific terminology (p=0.041) and help in gaining a global picture of the patient's clinical-healthcare pathway (p=0.015). Senior students expressed more agreement than junior students also in relation to help in searching for information from different sources and in implementing knowledge in clinical practices (83.3% S and 68% J - 96% S and 72% J). On the ability to favour the development of clinical reasoning a net majority of senior students expressed their agreement (88.4%), whereas 72% of the junior students agreed and 12% disagreed. Different agreement percentages were also found in relation to learning technical activities (92% S and 72% J). Of the junior students, 62% felt more reassured to be supervised by senior students rather than by nurses and 20% disagreed on this item; 94.9% of the senior students expressed their agreement.

In the group of questions on the theme 'role of the

senior student' (Table 4) we found statistically significant differences in the answers in relation to the clarity of the role of the senior student (p=0.024), support in becoming independent (p=0.012) and the senior student as professional model (p = 0.005). Junior students disagreed mostly on the possibility to reach agreements with the senior students on the type of guide to adopt (24% J and 7.6% S). With regard to the help provided by the senior students in evaluating the learning aims, junior students mostly agreed (62% J and 57% S), whereas senior students were in the intermediate level (42.3% S and 26% J). There was a difference level of agreement also in relation to the seniors students' ability in guiding the junior students to find solutions to their learning problems (73% S and 60% J). In relation to the senior students' constructive use of errors, 96% of the latter agreed, whereas 58% of the junior students agreed and 24% disagreed. With regard to the contribution of the senior students in confirming the professional choice of the junior students, 60% of the latter agreed and 20% disagreed, whereas 76.8% of the senior students agreed.

On a rating scale from 1 to 10 on the 'overall satisfaction' with their peer learning experience, the mean score of the junior students was 8.48 and that of the senior

students was 8.73 ($F=0.329$ $p=0.567$). The rating of 76% of the junior students and 88% of the senior students was >7 ; the rating of 44% of the junior students and 46.1% of the senior students was 10; instead the rating of 3 junior students and 2 senior students was <6 .

Among the 'best aspects' both groups mentioned 'giving/receiving help' and 'integration with the ward nurses'. Some junior students welcomed the possibility to put themselves to the test, relate with patients and among students. The 'critical aspects' mainly regarded the difficulty in finding adequate time and spaces for students to have meetings. Some senior students reported the perception of an excessive amount of responsibility linked to their role. In the section 'comments and suggestions' the role of the senior students was appreciated and some claimed that ward nurses ought to provide more support. The section 'questions asked exclusively to the senior students' showed that as a whole, this experience was considered to be positive. In particular, there was considerable agreement on: the educators recognition of the senior students' role (84%), increased ability in organizing and managing a group (88.3%) and a sense of fulfilment in helping junior students (92.2%). A large majority of the students (84.5%) declared they had received support from their clinical area tutor and 76.8% from their ward tutor; this percentage was lower in relation to the support provided by ward nurses (61.4% agreed, 22.9% disagreed).

With regard to the usefulness of the 1-day education session on peer learning, 76.8% agreed, whereas on the usefulness of the written operational guide there was less consensus (63.3%). The majority declared that anxiety diminished during this experience (73%); the dual role of student and educator did not seem to trouble most of the students (69.2%), whereas 22% disagreed with this aspect. The great majority of the students (84.4%) agreed that the role of senior students could be seen as an opportunity to facilitate the passage from student to professional.

Cronbach's Alpha on the internal consistency of the questionnaire was equal to 0.96.

Focus Group for Tutors

All of the 6 tutors were very positive about peer learning. According to their experience, senior students: provided junior students with very useful support to integrate themselves in the ward, favoured the free expression of emotions; answered to the questions of the junior students (the junior student often says: "I ask senior students questions that would be too silly to ask to nurses...") and helped them integrate theory with practice. There was however the need to constantly make clear what role senior students had to play with the junior students - also by means of an initial contract - as well as with the ward nurses. The clinical area tutors had to ensure that on one hand the senior

students' role as educators was recognized and valued, and on the other hand support the senior students to limit their uneasiness in playing the dual role of educators and students ("it is very important and educational that senior students ask us how to resolve the problems and difficulties of the junior students"). Tutors assessed the skills of the senior students both at the beginning and during their role and in some rare cases the students did not succeed in playing this role or were suspended along the way. The senior students played an important role in helping junior students develop clinical reasoning, also by discussing real life cases and helped to develop relational skills. With regard to the atmosphere among students this was friendly and characterized by caring ("dealing with junior students as if they were older brothers, gave them the sensation of having grown up, of being more responsible"). Sometimes disputes and misunderstandings arose and tutors played an important role in mitigating or resolving them. Tutors did not identify any disadvantages in the peer learning experience, but only potentially critical situations that needed constant monitoring.

Questionnaires for students on the causes of anxiety during apprenticeship

Sixty questionnaires were filled out by the junior students and 28 by the senior students. Similarly to Kleehammer et al. (1990), scores higher than Level 3 of the Likert Scale were considered to be indicators of anxiety. The higher mean scores (Table 5) for both groups regard items on the evaluation of educators, making mistakes, answering to the questions of the educators, being supervised and carrying out procedures on patients. Senior students attributed higher levels of anxiety to junior students. In fact, it was interesting to note that for many items the mean score of the juniors students was less than 3, whereas the mean score of the senior students was more than 3 for all the items. The items where the differences between the mean scores were most significant ($p<0.0001$) were: asking questions to educators, talking to physicians and to patients and initiating the clinical experience.

The F Test showed that only two items ("speaking to patients' relatives" and "availability of the educators") did not show statistically significant differences ($p>0.05$).

Discussion

Both the junior and senior students and the tutors positively rated the overall experience of peer learning. With regard to the theme "atmosphere, communication and caring" there was a significant difference between the two groups on the trust between junior and senior students, and as also the expert tutors highlighted, this could be linked to the individual characteristics of the students, especially the senior students, that influence the atmosphere within the group, as well as

Table 5. Questionnaire on Anxiety: Comparison between the Junior and Senior Student mean scores

ITEM	Junior S. Mean	Senior S. Mean	F	p
Ask questions to educators	2.18	3.53	23.426	<0.0001
Talking to physicians	2.85	3.84	19.627	<0.0001
Talking to patients	2.56	3.80	19.114	<0.0001
Initiating clinical experience	2.75	3.88	18.522	<0.0001
Educators' assessments	3.71	4.57	15.547	0.0002
Answering to the educators' questions	3.43	4.30	13.823	0.0004
Being observed by Educators	3.35	4.26	13.305	0.0005
Making mistakes	3.61	4.47	11.192	0.0012
Giving information to nurses	2.80	3.57	10.457	0.0017
Using equipment	2.71	3.57	10.390	0.0018
Providing morning care to patients (personal hygiene, mobilization, etc.)	2.38	3.23	9.058	0.0035
Educating patients	2.86	3.42	5.664	0.019
Performing procedures on patients (i.e. giving injection)	3.33	3.88	4.927	0.029
Talking to patient's family members	2.85	3.23	2.078	0.15
Educators' availability	3.13	3.50	1.633	0.2

J = junior students (n=50), S = senior students (n=26)
 1 = strongly disagree 5 = strongly agree NA = not assessable

the relations with the educators. As shown in other studies (Aston & Molassiotis, 2003; Yuen Loke & Chow, 2007; Gilmour et al., 2007; Duchscher, 2001) it was fundamental not to underestimate or deny these difficulties and tutors played a decisive role in helping students identify and deal with these problems. Major sense of responsibility, personal growth, motivation and self-confidence were all positive effects of peer learning acknowledged by both groups of students and the tutors, in line with the findings of other studies (Duchscher, 2001; Glass & Walter, 2000; Godson et al., 2007; Broschius & Saunders, 2001; Sprengel & Job, 2004). The influence determined by the care received by the students on their ability in turn to care for the patients, as also other studies confirm (Pullen et al., 2001; Grams et al., 1997; Beck, 2001), was mainly reported by the senior students.

With reference to the theme 'learning professional skills' the responses of the junior students were significantly different to those given by the senior students, in relation to the willingness to answer to their questions and seeking help in understanding specific terminology and the patients' clinical-healthcare pathway. It was also the tutors' view that more investigation was needed on such aspects and it was suggested to offer more support to senior students so that they could offer more effective guidance to junior students in independently collecting information, typical of tutoring, helping them understand what are the educational reasons of this choice.

Regarding the 'role of the senior students', we

also found that there was the need, as also other authors recommend (Gray & Smith, 2000; Scott, 2005; Sprengel & Job, 2004), to clarify the senior students' role. Tutors found that the initial 'contract' between junior and senior students was effective in reducing the difficulties linked to the dual role of the senior students (as students and educators).

As to the 'questions for the senior students', both our study and other studies (Yates et al., 1997; Aston & Molassiotis, 2003), showed how it important it was for senior students to have their role recognized by their educators (tutors and nurses). Although this involved a limited number of students, the need for the tutors' extra support was an aspect that could not be underestimated, because the perception of excessive responsibility towards junior students could give rise to learning drawbacks in both groups of students, as well as emotional problems. The majority of the senior students underlined the advantages of this experience in improving the ability to organize a group, professional knowledge and competences, and the feeling of fulfilment in helping the junior students, which were the same results also other studies came up with (Yates et al., 1997; Goldsmith et al., 2006; Bradshaw et al., 2002; Blowers et al., 2003; Duchscher, 2001).

Tutors underlined the importance of carrying out an accurate evaluation of the skills of each third-year student, before they started playing their role as senior students, as suggested by Aston and Molassiotis (2003). Our study also highlighted the responsibility of the tutors in maximising interaction with the ward nurses

to improve as much as possible the organizational conditions that facilitate peer learning during apprenticeship. As also Yates et al. (1997) suggested, several meetings with all the senior students were planned during the period of this experience. In our study we found that the increased confidence and responsibility in the senior students and the positive impact of this experience on their transition towards their future role as professionals, were some of the most positive effects of peer learning, which encouraged us to continue with this project.

With regard to the 'anxiety of students for several situations linked to apprenticeship' the results of our study confirmed those of other studies in relation to the contribution of senior students in reducing anxiety in junior students (Yates et al., 1997; Aston & Molassiotis, 2003; Yuen Loke & Chow, 2007; Kleehammer et al., 1990; Broschius & Saunders, 2001; Beck, 2001; Sprengel & Job, 2004). Seniors students attributed to junior students higher levels of anxiety compared to the ones the latter declared. These data were very useful when it came to training and support the senior students, so that they could play their role starting from the concrete needs of the junior students rather than building upon their declarations or on what they remembered from their past experience. The situation that mostly gave rise to anxiety in students was their interaction with the educators and the fear of committing mistakes when performing nursing procedures on patients. Our results were similar to those obtained by Kleehammer et al. (1990) and by Sprengel & Job (2004) and could be used by the senior students to provide junior students more effective support in a more reassuring atmosphere.

Conclusions

The results of this study, including both students and educators, could be used to improve the peer learning project in our Faculty. The evaluation of this experience, which cannot be generalized, could be helpful to implement peer learning projects also in other educational programs. With regard to nursing education in Italy, we have had consolidated tutoring models for several years, which include the centrality of the student in the learning process of the professional competences and an integrated system of educators, with diverse levels of experience, where also senior students had a role (Sasso et al., 2003; Zannini, 2005; Binetti & Alloni, 2004). The limits of our study are mainly linked to the small size of our sample, because the data were collected only during one term of apprenticeship of one academic year.

Further studies would be required to provide more insight into the dual role of the seniors students, who are contemporaneously students and educators, as well as those ambivalent aspects that could be detrimental for the educational process and atmosphere. In addition, it would be necessary to

report the point of view of the ward nurses involved in the peer learning project.

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ΠΕΡΙΛΗΨΗ

ΕΙΔΙΚΟ ΑΡΘΡΟ

ΔΙΚΤΥΟ ΜΑΘΗΣΗΣ ΣΤΗΝ ΚΛΙΝΙΚΗ ΕΚΠΑΙΔΕΥΣΗ ΤΩΝ ΦΟΙΤΗΤΩΝ ΝΟΣΗΛΕΥΤΙΚΗΣ: ΑΠΟΤΕΛΕΣΜΑΤΑ ΤΗΣ ΑΞΙΟΛΟΓΗΣΗΣ ΕΝΟΣ ΔΙΑΡΘΡΩΜΕΝΟΥ ΠΡΟΓΡΑΜΜΑΤΟΣ ΣΤΗΝ ΙΤΑΛΙΑ

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Σκοπός: Ο σκοπός της μελέτης μας ήταν να αξιολογήσουμε τα αποτελέσματα της ομαδικής μάθησης στην κλινική εκπαίδευση φοιτητών νοσηλευτικής από τη σύγκριση των απόψεων μεταξύ των ασκούμενων και τελειόφοιτους φοιτητές, και καθηγητές τους. Ο Δευτερεύων στόχος της μελέτης αυτής ήταν να συγκριθεί το επίπεδο άγχους αντιληπτή από προπτυχιακούς και ανώτερους σπουδαστές σε συγκεκριμένες καταστάσεις που βιώνουν κατά τη διάρκεια της κλινικής εκπαίδευσης.

Σχεδιασμός: Μια ποιοτική περιγραφική μελέτη.

Υλικό και Μέθοδος: Ένα δείγμα από 60 νεοεισερχομένους και 28 τεταρτοετείς φοιτητές επιλέχθηκε για να απαντήσει ανώνυμα ad-hoc ερωτηματολογίων. Μια ομάδα εστίασης χρησιμοποιήθηκε για να αξιολογήσει την εμπειρία των εκπαιδευτών. Ένα εργαλείο επικυρωθεί από Kleehammer, Hart & Fogel, Keck (1990) για να μελετήσει τις αιτίες του άγχους στους μαθητές κατά τη διάρκεια της κλινικής εκπαίδευσης χρησιμοποιήθηκε με κάποιες τροποποιήσεις.

Αποτελέσματα: Πενήντα νεοεκπαιδευόμενοι και 26 τεταρτοετείς φοιτητές απάντησαν στο ερωτηματολόγιο για τη μάθηση από και 6 Καθηγητές. Εμπειρογνώμονας έλαβε μέρος σε μια ομάδα εστίασης. Οι φοιτητές παρουσίασαν ένα καλό επίπεδο της συμφωνίας για τη θετική ανταπόκριση στην μάθηση. Επίσης, οι δάσκαλοι έδωσαν θετικές αξιολογήσεις και εξέφρασαν ένα καλό επίπεδο της ικανοποίησης. Στατιστικά σημαντικές διαφορές παρατηρήθηκαν στις απαντήσεις μεταξύ των δύο ομάδων νέων φοιτητών σε ορισμένα στοιχεία σχετικά με την ατμόσφαιρα και την επικοινωνία μεταξύ των φοιτητών και του ρόλου των τελειόφοιτων σπουδαστών στην παροχή βοήθειας νεαρών φοιτητών που μαθαίνουν επαγγελματικές ικανότητες. Η σημασία των εκπαιδευτών και σημαντική συνεχή υποστήριξη για την πρόληψη και την αντιμετώπιση των δυσκολιών των τελειόφοιτων σπουδαστών στο ρόλο τους ως εκπαιδευτικοί. Τονίστηκε επίσης. Τα αποτελέσματα που προέκυψαν από τα ερωτηματολόγια για τις καταστάσεις ενεργοποίησης άγχους κατά τη διάρκεια της κλινική μαθητείας έδειξε ότι τελειόφοιτους φοιτητές είχαν ένα υψηλότερο επίπεδο άγχους από τους νεώτερους.

Συμπεράσματα: Τα αποτελέσματα επιβεβαίωσαν τις θετικές συνέπειες της ομαδικής μάθησης που αναφέρθηκαν από άλλες μελέτες για θεωρητική εκπαίδευση στους νεώτερους και ανώτερους σπουδαστές καθώς και σε καθηγητές. Η άποψη των νοσηλευτών που συμμετέχουν στη μελέτη εξακολουθεί να απαιτεί την τεκμηρίωση.

Κλινική σημασία: Τα αποτελέσματα αυτά παρέχουν ενδείξεις για το πώς να βελτιώσουν την εφαρμογή του σχεδίου μάθησης από ειδικούς στη Σχολή, όπου πραγματοποιήθηκε η μελέτη και θα μπορούσε να χρησιμοποιηθεί για παρόμοια έργα.

Λέξεις κλειδιά: διαδραστική μάθηση, καθοδήγηση από ειδικούς, καθοδήγηση από συμβούλους, ομάδα εργασίας/μάθησης

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