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Authors

Alvisa Palese,[1] Silvia Gonella,[2] Anne Destrebecq,[3] Irene Mansutti,[1] Stefano Terzoni,[3] Michela Morsanutto,[1] Pietro Altini,[2] Anita Bevilacqua,[4] Anna Brugnolli,[4] Federica Canzan,[4] Adriana Dal Ponte,[4] Laura De Biasio,[5] Adriana Fascì,[5] Silvia Grosso,[6] Franco Mantovan,[4] Oliva Marognolli,[4] Raffaela Nicotera,[2] Giulia Randon,[4] Morena Tollini,[4] Luisa Saiani,[4] Luca Grassetti,[1] Valerio Dimonte[2].

Authors' affiliation

[1]University of Udine; [2]University of Torino; [3]University Milano; [4]University of Verona; [5]University of Trieste; [6]University of Padova.

Correspondence to

Alvisa Palese

Department of Medical and Biological Sciences, University of Udine

Viale Ungheria 20

33010 Udine

Tel: 39(0)432-590926

Fax 39 (0)532 590918

Mail: alvisa.palese@uniud.it

Abstract

Background: Undergraduate nursing students have been documented to experience ethical distress during their clinical training and felt poorly supported in discussing the ethical issues they encountered.

Research aims: This study was aimed at exploring nursing students' perceived opportunity to discuss ethical issues that emerged during their clinical learning experience and associated factors.

Research design: An Italian national cross-sectional study design was performed in 2015-2016. Participants were invited to answer a questionnaire composed of four sections regarding: (1) sociodemographic data, (2) previous clinical learning experiences, (3) current clinical learning experience quality and outcomes, and (4) the opportunity to discuss ethical issues with nurses in the last clinical learning experience (from 0 – 'never' to 3 – 'very much').

Participants and research context: Participants were 9607 undergraduate nursing students who were attending 95 different three-year Italian baccalaureate nursing programmes, located at 27 universities in 15 Italian regions.

Ethical considerations: This study was conducted in accordance with the Human Subject Research Ethics Committee guidelines after the research protocol was approved by an ethics committee.

Findings: Overall, 4707 (49%) perceived to have discussed ethical issues 'much' or 'very much'; among the remaining, 3683 (38.3%) and 1217 (12.7%) students reported the perception of having discussed, respectively, 'enough' or 'never' ethical issues emerged in the clinical practice. At the multivariate logistic regression analysis explaining 38.1% of the overall variance, the factors promoting ethical discussion were mainly set at the clinical learning environment levels (i.e. increased learning opportunities, self-directed learning, safety and nursing care quality, quality of the tutorial strategies, competences learned and supervision by a clinical nurse). In contrast, being male was associated with a perception of less opportunity to discuss ethical issues.

Conclusion: Nursing faculties should assess the clinical environment prerequisites of the settings as a context of student experience before deciding on their accreditation. Moreover, the nursing faculty and nurse managers should also enhance competence with regard to discussing ethical issues with students among clinical nurses by identifying factors that hinder this learning opportunity in daily practice.

Keywords

Critical learning, ethical issues, ethical problems, Italy, nursing ethics, nursing students, perceptions, survey

Introduction

The clinical learning environment (CLE) is a complex social environment influencing academic learning outcomes, the quality of competences achieved as well as future clinical and professional advancements.[1] According to a recent concept analysis[2] in the context of nursing education, the CLE has been defined as where nursing students apply theory to practice while caring for patients. For its relevance in developing clinical, ethical, cultural, communicational and technical competences by investing in the practice half of the total duration of their undergraduate education,[3] students' perceptions of CLE have been recommended to be measured.[4]

Recent literature showed that although nursing students are generally satisfied with the CLE experienced,[5, 6] they reported that being in a clinical setting is a challenging experience, due to different factors, i.e., the complexity of the relationship across settings (faculty and staff nurses) and inside of the clinical context where the learning occur.[7] Nursing students may develop disillusion when caring is not as central as they believed. Unit expectations such as paperwork completing and doing things in tight time, are perceive to erode time for personalised patient care by reducing time for communication, listening, and assessment their preference and values.[8] Thus, inappropriate or inadequate care can be a potential cause of ethical distress among nursing students.[9, 10] Ethical or moral distress appears "*when there exists a moral element or threat to a nurse's moral integrity that causes feelings of disquiet and even distress; when nurses feel that they have no ethical choice to make in a given situation; or when nurses feel devalued and ignored when attempting to resolve an ethical issue in their practices*".[11]

Nursing students are fresh from classrooms-taught ethics contents; moreover, the newly enrolled nursing students enter their training period with a personal vision of care and being a caring person, which is generally idealistic.[12] Thereby students are well-situated to detect ethical issues when entering the CLE, where policies and procedures, unsafe working conditions, understaffing, organizational norms and hierarchical decision-making may be a source of ethical distress. Unprofessional behaviour among health staff, problems stemming from hospital management, inefficient communication, disagreement with clients' behaviour or other issues all influencing the quality of life, dying and death, patients' right to confidentiality, privacy and autonomy has been reported as the most common ethical problems experienced by nursing students.[13-16]

Unfortunately, nursing students frequently felt there was "no place to turn" for support for their moral distress.[10] In their naturalistic inquiry qualitative study including seven female nursing students who had completed their 13-week clinical practice on acute inpatient psychiatric units, Wojtowicz and colleagues[10] reported that although students had many questions and misgiving about what they perceived as overmedication, they could not turn to nurses to share their moral distress. Students

perceived their clinical tutors as being frozen around issues causing their moral distress, instead of serving as a role model or supporting the developing coping skills. In contrast, as suggested by a qualitative content analysis describing the experience of nursing students with respect to the role of clinical tutors in promoting professional ethics, individual characteristics, clinical skills and professional commitment, the essential requisites of the role of instructors has been recognised in promoting ethical competence.[17] However, the lack of support and supervision encountered by nursing students in the clinical environments has been documented as a common issue across the qualitative literature.[14, 15] Over three-quarter of nursing students has been reported that nurses are not used to be involved in debating the ethical problems they encountered.[14] Nursing students often reported to feel undermined and their learning held back when working in non-supportive clinical environments.[18]

However, despite that the clinical environment often triggered moral distress[13-16] that can reach severe degrees[19] impacting the quality of the clinical experience[10], nursing students' perceived opportunity to discuss ethical issues experienced in their practice has never been explored before.

Therefore, the purposes of this study were to explore nursing students' perceived opportunity to discuss ethical issues emerged during their clinical learning experience and associated factors. The following were the research questions: 1) Do nursing students perceive the opportunity to discuss ethical issues emerged in the clinical practice with the nurses' staff? 2) What factors influence their perceptions with regard the opportunity to discuss, or not, ethical issues emerged in the clinical practice?

Methods

Design

A national cross-sectional study design was performed on 2015-2016. The study protocol was approved on a preliminarily fashion by the Ethical Committee of the University of Milan (La Statale).

Participants

On a preliminary basis there were developed an Italian network of Bachelor of Nursing Science degrees (BNS) by involving all degrees. A total of 27 out 43 of expressed their willingness to participate and therefore a network called SVIAT, the reference network for the development of instrument and intervention aiming at ameliorating the clinical education of students, was established.[20] Each degree was invited to involve their students by presenting the aims of the study and the freedom to participate in the study process. Information to students and their recruitment process was performed by a reference researcher of the SVIAT network in each degree.

Eligible were those students who were a) attending or just ended their clinical learning experience at the moment of the survey; b) at least from two weeks; and, c) willing to participate in the study expressed with a written informed content.

Data collection process and instruments

The data collection process was performed through a questionnaire composed by four sections:

a) socio-demographic: the following data were collected: age, gender, civil status (e.g., unmarried, married) and children, if any (yes/no); the year of nursing education attended; previous education (secondary school attended, grade score obtained; university degrees concluded or not) and working experiences both previous and during nursing education.

b) previous clinical learning experience: students were required to recall the number of previous clinical experiences performed and in which settings (e.g., only in hospital, only in the community setting, or in both).

c) current clinical learning experience: students were required to focus their attention on the last clinical experience and to indicate its duration; they were also required to indicate the supervision model adopted by the unit ('I was supervised by a clinical nurse'; 'I was supervised by the nursing staff'; 'I was supervised by nurse identified on a daily basis by the head nurse'; 'I was supervised by the nurse teacher'; 'I was supervised by the head nurse').[21, 22] Moreover, students were required to rate the effectiveness of the clinical experience on the degree of competence learned by using a 4-point Likert scale (from 0, none to 3, very much).

The *Clinical LEarning Quality Evaluation Index (CLEQI)* tool[23] measuring the quality of the learning processes enacted in the clinical setting was also included. The tool is composed by five factors, namely the: 'Quality of the tutorial strategies' (6 items; scores from 0 to 18), 'Learning opportunities' (6 items; scores from 0 to 18), 'Self-direct learning' (3 items; scores from 0 to 9), 'Safety and nursing care quality' (4 items; scores from 0 to 12), 'Quality of the learning environment' (3 items; scores from 0 to 9). Overall, the CLEQI score may range from 0 to 66; the higher score is the higher quality of learning processes have been perceived by the students in the specific environment. The validity measures have been published elsewhere by the authors.[23]

d) the opportunity to discuss ethical issues with nurses in the last clinical learning experience. This was required by an item formulated as following "Do you have the opportunity to discuss ethical issues and implication during your last clinical learning experience?". Answers were based upon a 4-point Likert scale (from 0, never to 3, very much).

Data were collected via paper and pencil and via google drive according to the resources available in each BNS degree.

Data analysis

Descriptive and inferential statistic was performed by using the SPSS Statistical Package. On a preliminarily basis, the description of frequencies, percentages average (with Standard Deviations [DS] and ranges; or Confidence Intervals [CI] at 95%) were calculated. The dependent variable (= discussing ethical issues in the clinical learning environment) was considered as a continuous variable when correlations were searched with other continuous variables and as a categorical variable by creating two groups: those students who perceived from "never to enough" opportunity to discuss the ethical issues; and those who have discussed ethical issues "much or very much". Correlations were calculated by using the Spearman's rank-order correlation according to the nature of the variables. Moreover, factors associated with the opportunity to discuss ethical issues in the clinical setting where assessed by using a multivariate analysis by calculating the Odd Ratios (OR, CI 95%). There were included in the model only those variables significantly associated with the end-point at the bivariate analysis. The goodness of the model was evaluated by checking the Hosmer Lemeshow test. The statistical significance was set at $p < 0.05$.

Results

1. Participants

There were 9607 students involved out of the 10,480 eligible; they were attending their education in one of the 95 participating BNS programmes, located in 27 universities out of the 43 available in 15 different Italian regions, as reported in Figure 1.

The majority of the students were female (76%) and unmarried (95%), and the average age was 22.9 (4.1) years (from 18 to 57). The three-year nursing programs were roughly equally represented with 30%, 34% and 35% being first-, second- and third-year students, respectively. Most of the students reported secondary high school (70.2%) or technical (16.1%) diploma with an average score ranking at the third upper quartile. Almost 70% of the students had attended previous degree courses before starting nursing degree and only 4.4% graduated. About one third (n=3301) of the students had previous working experience and one on five were working during nursing education.

Overall, 4900 (51%) students perceived "never to enough" opportunity to discuss the ethical issues emerged during their clinical practice, while 4707 (49%) perceived to have discussed ethical issues "much or very much". In detail, ethical issues were reported to be discussed "enough", "much" and "very much" by 3683 (38.3%), 3328 (34.6%) and 1379 (14.4%) of students, respectively; the remaining 1217 (12.7%) students have reported not having ever had the opportunity to discuss ethical issues. Students reporting "never to enough" discussion of ethical issues were generally female,

younger, without children; they were educated at the high school diploma, with no previous working experience; they were attending the first-year of nursing education and less frequently worked during the degree as compared to those who reported to have discussed ethical issues "much or very much". The characteristics of the study population are presented in table 1.

2. Previous and current clinical learning experience

Participant students reported on average 4.9 (CI 95% 4.8 - 5.0) clinical experiences, mostly performed exclusively at the hospital setting (68.1%).

The length of the last clinical experience was on average 5.8 (2.7) weeks and more than half were supervised by a clinical nurse and about 40% by the nursing staff. Overall, in the last clinical experience students perceived to have learned clinical competences in an extent from much (47.8%) to very much (30.5%). According to the CLEQI scale they scored the overall learning environment 1.91 out of 3 (0.59; 95% CI 1.90 - 1.93). In detail, the average scores for each CLEQI factor were: 1.97 (0.73; 95% CI 1.96 - 1.99) in "Quality of the tutorial strategies"; 1.97 (0.67; 95% CI 1.96 - 1.98) in "Learning opportunities"; 1.50 (0.79; 95% CI 1.49 - 1.52) in "Self-direct learning"; 2.08 (0.59; 95% CI 2.06 - 2.09) in "Safety and nursing care quality"; 2.02 (0.73; 95% CI 2.01 - 2.04) in "Quality of the learning environment".

As reported in table 1, students that perceived a higher opportunity to discuss ethical issues were more likely to be supervised by a clinical nurse ($p < 0.001$) and reported more competence learned (2.35/3 vs 1.81/3, $p < 0.001$). Differently, students referring "never to enough" opportunity to discuss ethical issues more frequently performed their clinical trainings only at the hospital ($p < 0.001$) and their last learning experience was shorter ($p < 0.001$) compared to those students reporting to have discussed ethical issues "much or very much".

All of the CLEQI factors scored significantly higher among students who reported to have discussed ethical issues "much or very much" (all $p < 0.001$) as compared to the counterpart. Moreover, significant correlations were found between the opportunity the students perceived to discuss the ethical issues emerged in the clinical practice and both the overall CLEQI score ($r = 0.474$, $p < 0.01$) and the score of CLEQI factors (Table 2).

3. Factors promoting the discussion of ethical issues

In the multivariate model, the end point was the opportunity to discuss ethical issues in the units with the nursing staff (from much to very much) as compared to those students who did not (from never to enough). The multivariate model has explained the 38.1% of the overall variance. Having increased learning opportunities (OR = 2.155, 95% CI 1.889 - 2.458), self-direct learning opportunities (OR =

1.799, 95% CI 1.648 - 1.964), as well as having experience in an environment where is provided safe and good quality of nursing care (OR = 1.696, 95% CI 1.499 - 1.919), and higher quality of the tutorial strategies (OR = 1.277, 95% CI 1.133 - 1.440), promoted the discussion of the ethical issues emerged in the clinical practice (Table 3). Moreover, also the higher perception of having learned clinical competence (OR = 1.196, 95% CI 1.092-1.311) and the higher quality of the learning environment (OR = 1.127, 95% CI 1.003 - 1.266), was also associate with the increased likelihood to discuss ethical issues in the clinical practice. At the individual level, having children (OR = 1.438, 95% CI 1.081 - 1.913) was positively associated while male gender was negatively associated with the perception to have had the opportunity to discuss ethical issues (OR = 0.774, 95% CI 0.682 - 0.877). At the CLE level, being supervised by a nurse teacher prevented the likelihood to discuss ethical issues (OR = 0.532; CI 95% 0. 367 - 0.772) as reported in Table 3.

Discussion

The study was aimed at gaining deeper understanding of the nursing students' perceived opportunity to discuss ethical issues emerged during their clinical learning experience with the nursing staff, as well as the associated factors.

Ethical issues may cause severe moral distress that negatively impacts on students' caring competences. Specifically, when moral distress is not properly addressed, students tend to avoid patient contact and lost their caring competences[24] and newly graduates may also be discouraged to decide a career in a specific care setting[10]. Furthermore, moral blunting and desensitization have been documented among 3rd year students as compared to 2nd years students in a recent survey on 373 undergraduate nursing students when they were not involved into ethical discussion and got used to the ethically distressing situations encountered.[15]

We have involved a large sample of BNS degrees and their students, and the main characteristics such as age, the prevalence of female, secondary education attended, working conditions during and before the degree, are in line with those previously documented.[25]

According to the findings, baccalaureate nursing students perceived poor opportunity to discuss ethical issues with one on eight referring not having ever perceived the opportunity to discussion during their clinical learning experience with the staff. Students can learn how to analyse and address ethical problems as future professionals only when they have had the opportunity to discuss ethical problems of each patient; in contrast, when opportunity of discussion is not being offered, students perceive lack of ethical competence that can result in increased risk of moral distress.[10] Having the opportunity to discuss ethical issues with an experienced clinical nurse as soon as they emerged in the clinical practice can enhance students' level of understanding and their ability to respond

appropriately.[17] Moreover, strengthen ethics content in theoretical courses is not enough to prepare students for the complex situations they will encounter in practice. Students should be given the opportunity to voice their ethical concerns in order to develop an autonomous and professional decision-making.

The majority of the factors affecting positively the opportunity of ethical discussion have emerged at the clinical environment level. According to the findings, those students who perceived greater learning opportunities in the clinical settings, have reported and increased perception to discuss ethical issues with the nurses. Also, the perception of having gained more clinical competence during their clinical experience was positively associated with ethical discussions, confirming that students considered the acquisition of clinical competences as a whole, where technical and ethical competences are interrelated.[17] In addition, students who perceived themselves to be independent in the learning process, by identifying the learning needs, the strategies and self-evaluating the progresses, have reported more likely to discuss ethical issues. Self-direct learning can also increase effectiveness in acquiring ethical competence and students can perceived themselves more confident in being engaged in ethical discussion with their clinical instructors.[2]

The perception of being immerse in a context where patient safety and nursing care quality was higher, have promoted the discussion of ethical issues. In those clinical environments where safety and nursing care quality are threatened there is an increased need to discuss ethical implications. However, in situations of understaffing nurses are focused on completing their tasks and providing patients the primary care, and may be short in time to discuss students' ethical concerns emerged in the clinical practice.[26] Unsafe working conditions have been reported to cause the most moral distress among nursing students:[9, 13, 15, 27] thus, time pressure negatively impacts both on patient's care and the professional development of nursing students. In those settings where nursing students are exposed to higher nurse-to-patients ratios or negative habits regarding the quality of nursing care, faculties should decide if allocate or not students and clinical instructors should be supported in engaging students in discussing implications, in participating in decisions about patient care aimed at developing an autonomous moral thinking.

The quality of the tutorial strategies adopted as well as the tutorial model offered during the clinical learning experience, have both emerged as factors affecting positively the likelihood of discuss ethical implications. Clinical nurses, in their role of instructors, have the moral responsibility to address students' moral distress and make them felt supported in developing critical thinking and the ability to make moral decisions.[28-30] Clinical nurses play a role model exemplifying professional values that students wished to emulated;[31] moreover, students consider being ethical in addition to offer a person-centred holistic care and being empathetic, respectful, open-minded and self-aware as

essential professional values that they scrutinise among nurses encountered during their clinical experiences.[31] Therefore, training clinical instructors to increase their competence in mentoring students, can also increase the opportunity to discuss ethical implications in daily practice.
Differently, students have reported that when they were supervised directly by the teachers of the faculty in the clinical environment they perceived less likelihood to discuss ethical issues. Sometimes the role of the teachers in the clinical environment is perceived by students as evaluators and this can have threatened the freedom to report and discuss ethical issues. Moreover, they can be not directly involved in the care of patients thus limiting in-depth discussion. Those students who were supervised by clinical nurses instead of a teacher, were more likely to discuss ethical implications possibly because they were given more opportunities to voice their ethical concerns, arrange discussions and receive creative feedback.[22, 32]

A few factors emerged at the individual levels: male students were less likely to be engaged in ethical discussion compared to their female peers. Men have been reported to have a different sensitivity compared to women and probably our male students were more focused on acquiring technical skills rather than a speculative knowledge, such as the ethical decision-making. However, previous qualitative studies[13, 31] highlighted ethical dilemmas and professional values in nursing profession according to the perception of both male and female students, although the former were less represented than the latter. Also those students with children have reported to have more opportunities to discuss ethical issues, likely because they are more used to capture ethical issues since they are daily exposed to do choices to pursue their child's benefit and avoid harms, that are fundamental ethical principles.

The study has several limitations. Data were collected with a questionnaire, by involving students to self-report their perceptions; moreover, data regarding their theoretical courses regarding ethical contents (which may be variable across Italy), the contexts (e.g., health promotion units vs palliative care units, where different ethical issue may emerge) as well as data regarding students cultural and religious believes that may influence the perception of ethical issues, were not collected. Furthermore, we have performed a national study where other factors (e.g., different training aims, expectations, curriculum pathways) may have influenced the perceptions documented by students. The cross-sectional design used suggests to be prudent in considering the associated factors as determinants of the increased likelihood to discuss ethical issues as perceived by students. Causative factors required different study designs (e.g., intervention studies) which may be addressed in the future. In addition, the concept of '*discussing ethical issue'* was not explained in the questionnaire and participants may have attributed different meaning to that agreed in the literature.[33] Finally, according to the limited

amount of variance explained as emerged in the multivariate analysis, further research is suggested to capture the whole factors affecting the ethical discussion in the clinical practice.

Conclusion

This study was aimed at exploring nursing students' perceived opportunity to discuss ethical issues emerged during their clinical learning experience and associated factors. The healthcare environment has been documented as causing ethical distress for nursing students due to its challenging and ethically complex nature. However, according to the findings, over half of the nursing students perceived to be poorly involved into the discussion of ethical issues emerged in their clinical practice, thus preventing them to implement the ethical knowledge developed during the classroom-based lessons in the patient care. When students are not involved into the discussion of ethical issues based on real cases, they become at risk to experience a dissonance with knowledge, attitudes and values theoretically acquired, as well as to those ideally developed appertaining to the nursing profession, and to prevent an autonomous professional ethical thinking which is expected at the entry level.

The pedagogical atmosphere characterised by the quality of tutorial strategies, the tutorial models adopted, the learning opportunities offered, the quality of the learning environment, the safety and nursing care quality delivered, and the self-direct learning opportunities in addition to the gender and clinical competence learned during the clinical training were identified as factors associated with the discussion of ethical issues. Nursing faculty should assess these prerequisites of the clinical settings before deciding their accreditation as a context where nursing students should attend their clinical experience. Neglecting to consider, behind other competences, the opportunity to discuss ethical issues emerged in the practice as an antecedent to develop consistent ethical competence among nursing students can negatively impact on students' caring competence and their development of an autonomous professional ethical thinking. Moreover, nursing faculty should also enhance the competence to discuss ethical issues with students among the clinical instructors by identifying also factors threatening this learning opportunity in daily practice.

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Table 1: Participants according to their perception regarding the opportunity to discuss ethical issues in the clinical environment

Characteristics	Total N=9607 (%)	Opportunity to discuss ethical issues during the clinical learning experience: Never to enough N=4900 (%)	Much to very much N=4707 (%)	*p*-value[c]
Socio-demographic, educational and academic characteristics				
Age, years, (n=9607), mean (SD)	22.9 (4.1)	22.8 (4.08)	23.0 (4.08)	0.007
Female gender (n=9596), n (%)	7303 (76.1)	3865 (79.0)	3438 (73.1)	< 0.001
Civil status (n=9524), n (%)				0.615
Unmarried	9045 (95)	4622 (94.3)	4423 (94.0)	
Married/cohabitant	435 (4.5)	209 (4.3)	226 (4.8)	
Divorced	37 (0.4)	18 (0.4)	19 (0.4)	
Widowed	7 (0.1)	4 (0.1)	3 (0.1)	
With children, n (%)	428 (4.5)	179 (3.71)	249 (5.42)	< 0.001
Academic year attended (n=9579), n (%)				< 0.001
First	2909 (30.4)	1568 (32.1)	1341 (28.6)	
Second	3282 (34.2)	1694 (34.7)	1588 (33.8)	
Third	3388 (35.4)	1622 (33.2)	1766 (37.6)	
Previous academic experience (n=9515), n (%)				0.718
None	6587 (69.2)	3366 (69.2)	3221 (69.3)	
Graduated in other fields	420 (4.4)	201 (4.1)	219 (4.7)	
Uncompleted degree	2426 (25.5)	1252 (25.7)	1174 (25.3)	
Other	82 (0.9)	47 (1.0)	35 (0.8)	
Secondary education (n=9442), n (%)				< 0.001
High school	6630 (70.2)	3451 (71.9)	3179 (67.5)	
Technical school	1518 (16.1)	723 (15.1)	795 (16.9)	
Professional school	768 (8.1)	365 (7.6)	403 (8.6)	
Teacher school	410 (4.4)	207 (4.3)	203 (4.3)	
Secondary school abroad	116 (1.2)	51 (1.1)	65 (1.4)	
Secondary education grade score (n=9312), mean (95% CI)				
On a 100-point scale (n=9108, 94.8%)	76.9 (76.7-77.1)	77.2 (76.9-77.6)	76.5 (76.2-76.8)	0.050
On a 60-point scale (n=172, 1.8%)	45.4 (44.3-46.5)	44.7 (43.1-46.2)	46.2 (44.8-47.7)	0.162
Working experience before the degree (n=9553), n (%)	3301 (34.6)	1623 (33.3)	1678 (35.8)	0.002
Working experience during the degree (n=9526), n (%)	1942 (20.4)	952 (19.6)	990 (21.2)	0.030
Clinical learning experience				
Previous clinical experiences, number, mean (95% CI)	4.9 (4.8 - 5.0)	4.8 (4.7 - 4.9)	5.0 (4.9 - 5.1)	0.081
Setting (n=9551), n (%)				
Only in the hospital	6506 (68.1)	3473 (71.2)	3033 (64.9)	< 0.001
Only in the community setting	153 (1.6)	75 (1.5)	78 (1.7)	
In the hospital and community settings	2892 (30.3)	1327 (27.3)	1565 (33.5)	
Last clinical experience				
Duration, weeks, mean (SD)[b]	5.8 (2.7)	5.7 (2.8)	5.9 (2.4)	< 0.001
Tutorial model (n=9563), n (%)[b]				
I was supervised by a clinical nurse	5096 (53.3)	2221 (45.6)	2875 (61.3)	< 0.001
I was supervised by the nursing staff	3804 (39.8)	2282 (46.8)	1522 (32.5)	
I was supervised by nurse identified on a daily basis by the head nurse	405 (4.2)	236 (4.8)	169 (3.6)	
I was supervised by the nurse teacher	165 (1.7)	86 (1.8)	79 (1.7)	
I was supervised by the head nurse	93 (1.0)	48 (1.0)	45 (1.0)	
Degree competence learned, (n=9577), mean (95% CI)[a,b]	2.07 (2.06-2.09)	1.81 (1.79-1.83)	2.35 (2.33-2.36)	< 0.001
None	92 (1)	81 (1.7)	11 (0.2)	< 0.001
Quite	1986 (20.7)	1555 (31.8)	432 (9.2)	

Much	4580 (47.8)	2429 (49.7)	2151 (45.9)	
Very much	2919 (30.5)	822 (16.8)	2097 (44.7)	
CLEQI factors scores, mean (95% CI)[a,b]				
Quality of the tutorial strategies	1.97 (1.96-1.99)	1.64 (1.62-1.66)	2.31 (2.30-2.33)	< 0.001
Learning opportunities	1.97 (1.96-1.98)	1.65 (1.63-1.67)	2.30 (2.29-2.32)	< 0.001
Self-direct learning	1.50 (1.49-1.52)	1.16 (1.14-1.18)	1.86 (1.84-1.88)	< 0.001
Safety and nursing care quality	2.08 (2.06-2.09)	1.82 (1.80 -1.84)	2.34 (2.33-2.36)	< 0.001
Quality of the learning environment	2.02 (2.01-2.04)	1.72 (1.69-1.74)	2.34 (2.32-2.36)	< 0.001
Overall CLEQI score[a,b]	1.91 (1.90-1.93)	1.60 (1.58-1.62)	2.24 (2.22-2.25)	< 0.001

Abbreviations: CI, Confidence interval; CLEQI, Clinical Learning Quality Evaluation Index; SD, Standard Deviation.
[a] On a 4-point Likert scale (0 = none; 3 = very much).
[b] The last clinical experience was that under evaluation.
[c] Chi Square for dichotomous variables, T Test or for continuous variables.

Table 2: Correlation between the opportunity to discuss ethical issues[a] and the CLEQI scale scores

CLEQI factors	ρ
Quality of the tutorial strategies	0.463*
Learning opportunities	0.481*
Self-direct learning	0.266*
Safety and nursing care quality	0.325*
Quality of the learning environment	0.368*
CLEQI score, overall	0.474*

Abbreviations: CLEQI, Clinical LEarning Quality Evaluation Index.

* $p < 0.01$

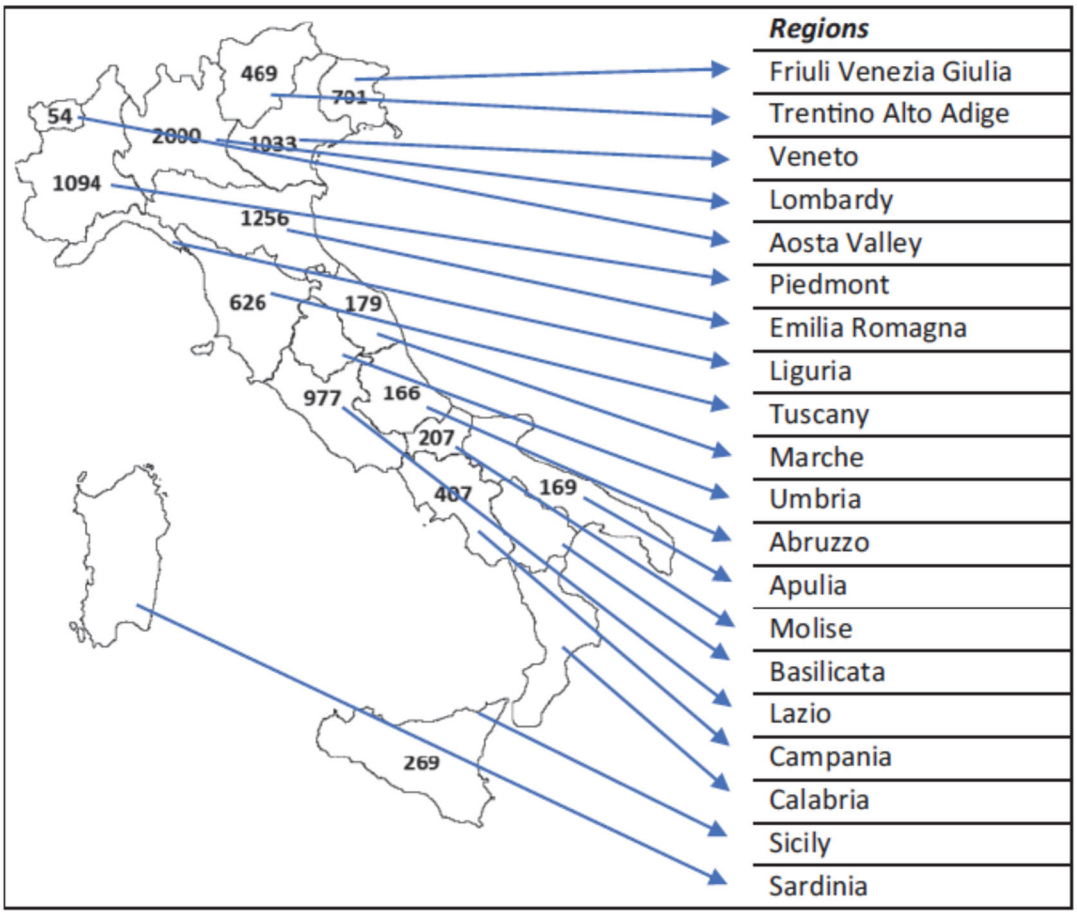
[a] as continuous variables, from 'zero' no discussion (1217; 12.7%), to 'one' enough discussion (3683; 38.3%), to 'two' much discussion (3328; 34.6%), and 'three' very much discussion (1,379; 14.4%).

Table 3: Factors promoting the discussion of ethical issues emerged in the clinical practice

Variable	OR	95% CI	p-value
Age, years	1.002	0.986-1.019	0.814
Male gender (n, %)	0.774	0.682-0.877	< 0.001
Children Yes vs no (n, %)	1.438	1.081-1.913	0.013
Year of nursing education attended (n, %)			0.292
First	§		
Second	1.108	0.971-1.264	0.127
Third	1.084	0.944-1.245	0.251
Secondary school attended (n, %)			0.401
High school	§		
Technical school	0.975	0.555-1.712	0.930
Professional school	0.992	0.593-1.661	0.976
Teacher school	0.880	0.531-1.458	0.620
Secondary school abroad	1.005	0.591-1.709	0.984
Previous working experience, Yes vs no (n, %)	1.071	0.944-1.217	0.287
Working experience during the degree, Yes vs no (n, %)	1.001	0.871-1.150	0.991
Context of previous clinical learning experiences (n, %)			0.069
Only hospital	§		
Only community setting	1.165	0.764-1.777	0.478
Hospital and community setting	1.141	1.017-1.280	0.025
Last clinical learning experience, length weeks	1.009	0.990-1.029	0.345
Last clinical experience, tutorial model (n, %)			0.017
I was supervised by a clinical nurse	§		
I was supervised by the nursing staff	0.923	0.824-1.034	0.167
I was supervised by nurse identified on a daily basis by the head nurse	0.941	0.720-1.230	0.657
I was supervised by the nurse teacher	0.532	0.367-0.772	0.001
I was supervised by the head nurse	0.880	0.509-1.519	0.646
Last clinical experience, clinical competence learned (0 - 3)[a]	1.196	1.092-1.311	< 0.001
CLEQI factor - Quality of the tutorial teaching strategies (0 - 3)[a]	1.277	1.133-1.440	< 0.001
CLEQI factor - Learning opportunities (0 - 3)[a]	2.155	1.889-2.458	< 0.001
CLEQI factor - Self-direct learning (0 - 3)[a]	1.799	1.648-1.964	< 0.001
CLEQI factor - Safety and nursing care quality (0 - 3)[a]	1.696	1.499-1.919	< 0.001
CLEQI factor - Quality of the learning environment (0 - 3)[a]	1.127	1.003-1.266	0.044

Abbreviations: CI, Confidence interval; CLEQI, Clinical LEarning Quality Evaluation Index; OR, Odds Ratio.
§ reference group
[a] On a 4-point Likert scale (from 0, none to 3, very much)

Figure 1. Number of participants according to regions where the nursing programme was attended by students (= 9607)



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