

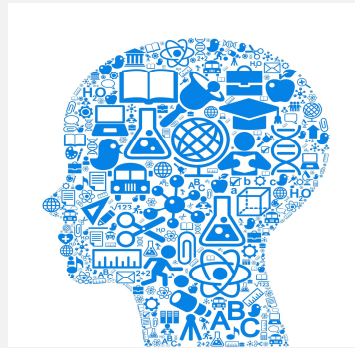
Intensive Care Nurses' Knowledge on Quality and Patient Safety

Dominique Vandijck^{1,2,3}, Peter Vermeir^{3,6}, Celine Neiryck², Jochen Bergs⁴, Annemie Vlayen¹,
Sonia Labeau⁵, Stijn Blot^{3,6}, Johan Hellings^{1,7}

¹Faculty of Medicine and Life science, Hasselt University, Belgium, ²Department of Public Health, University of Ghent, Belgium, ³Department of General Internal Medicine, Ghent University Hospital, Belgium, ⁴Faculty of Business Economics, Hasselt University, Belgium, ⁵Faculty of Healthcare, University College Ghent, Belgium, ⁶Faculty of Medicine and Health Sciences, Department of Internal Medicine, Ghent University, Belgium, ⁷General Management Department, AZ Delta, Roeselare, Belgium

BACKGROUND & AIM

A series of reports have documented serious problems related to quality of care and patient safety in hospitals, and in the complex intensive care (ICU) environment in particular. Nursing staff is vital in the delivery of safe care. Consequently, the importance of developing innovative nursing curricula related to quality of care and patient safety has substantially increased. Equipping ICU nurses with appropriate knowledge, skills and attitudes to improve patient safety is of key importance to enhance patient care quality and to decrease preventable adverse event rates. In response to the growing recognition of the importance of patient safety, Hasselt University (Belgium) has convened a taskforce on curricular innovations (as part of the Patient Safety, Health Economics & Healthcare Innovation Research Group) to increase healthcare professionals' patient safety competencies. While various studies have been conducted to assess the competency of healthcare professionals, none have focused on the domains of patient safety among ICU nurses by means of a knowledge test. Although knowledge does not insure better quality care, a lack of knowledge may be a barrier to good quality, and as such, to safe care. Hence, the aim of this study was to determine intensive care unit nurses' knowledge, attitudes, and perceptions of quality of care and patient safety.



METHODS

•A cross-sectional survey, based on a self-developed and validated questionnaire, was used to evaluate nurses' knowledge of key patient safety issues

•The questionnaire was distributed and collected during the 2013 annual conference of the Flemish Society for Critical Care Nurses.

•Demographic data included gender, years of work experience, number of beds, education, and whether respondents held an additional educational degree.

RESULTS

625 Questionnaires (response rate 76.9%) were collected. The average score on the knowledge test was 42.2%. Twenty-eight percent of the respondents correctly knew that 1-5% of hospitalized patients suffer preventable harm; 40% correctly estimated the probability of occurrence of medication errors; 39% and 38% respectively, recognized the correct example of an active and latent error; and 41% knew that mainly inadequate processes are responsible for preventable patient harm. A quarter (24%) knew that calculation errors are the most frequent cause of medication errors in daily practice. Twenty-five% and 57% correctly identified the characteristics of a positive safety culture. One third (34%) identified the different dimensions of quality care. Most (97%) knew that hand hygiene is the most effective measure to prevent pathogen transmission between patients. Professional seniority was shown to be independently associated with lower knowledge levels. Those holding an additional educational degree had significant better test scores. Sixty-eight% considered having sufficient knowledge to improve patient safety in their unit.

Table 1: Respondents' answers on multiple-choice questions regarding quality and patient safety

1.	What is the reported frequency of serious adverse events (injuries that result from medical care) among hospitalized patients in Belgium?	<1% 1-5% 6-10% >10%	0.2 28.3 ^a 28.0 30.4
2.	If the process of ordering and administering a medication has 20 steps, each with 99% accuracy, what is the likelihood of a medication error occurring each time the medication is ordered and administered?	I do not know 0.2% 1% 2% 20%	13.1 9.3 14.2 19.2 40.6 ^b 16.6
3.	Which one of the following is the best example of an active failure?	Preparing different dosages of an inotropic in similar drips and labeling by an undergraduate student Taking a chest radiography bedside using an obsolete device Scheduling staff to work 80 hours a week to cover a 'power period' Overlooking a clearly visible pneumothorax on a chest radiography I do not know	35.2 2.2 13.9 38.7 ^c 9.9
4.	Which one of the following is the best example of a latent error?	Ordering of a chest radiography on the wrong patient Using bar codes as patient-identifiers Confirming a drug dosage on an electronic patient record without prior verification Understanding an intensive care unit I do not know	12.2 5.0 27.0 37.3 ^d 17.9
5.	Preventable errors are mainly caused by?	Structural deficiencies Process deficiencies Performance deficiencies Intrinsic resistance towards quality improvement I do not know	22.4 40.8 ^e 14.2 9.0 13.6
6.	Which one of the following is the most frequent error in daily practice?	An arithmetic miscalculation Misreading of a medication label Forgetting to turn off a switch Mixing drug dosages I do not know	23.5 ^f 7.4 2.2 57.9 9.0
7.	Which one of the following is the most effective measure to prevent transmission of pathogens?	Appropriate use of antibiotics Hand hygiene Strict isolation Strict adherence to the principles of sterility I do not know	0.3 97.0 ^g 0.5 0.8 0.5
8.	The essential dimensions of a patient safety culture are?	Honest, flexible, learning, reporting Positive, flexible, learning, reporting Honest, positive, learning, reporting Honest, flexible, investigating, reporting I do not know	25.0 ^h 4.0 20.0 37.4 13.6
9.	Improving a patient safety culture aims to?	Increasing specificity and safety of care Increasing reliability and safety of care Increasing sensitivity and accessibility of care Increasing reliability and accessibility of care I do not know	13.6 57.0 ⁱ 5.0 9.9 14.6
10.	Quality care is at the same time?	Effective, efficient, safe, patient centered, open, accessible, continuous, integrated Effective, efficient, safe, patient centered, timely, accessible, continuous, integrated Effective, efficient, safe, patient centered, timely, accessible, open, integrated Effective, efficient, safe, patient centered, timely, accessible, continuous, open I do not know	27.4 33.6 ^j 9.8 10.2 19.0

Conclusions

Opportunities exist to improve nurses' knowledge on quality care and patient safety. Further research may determine whether low scores are due to a lack of knowledge, deficiencies in education and/or training, differences in what is considered as good practice and/or an inappropriate policy.