

The need for a nursing specific patient safety definition, a viewpoint paper

Anna V. Chatzi

University of Limerick, Limerick, Ireland, and

Maria Malliarou

University of Thessaly, Larissa, Greece

Abstract

Purpose – This viewpoint article discusses and analyses the need and benefits of a patient safety definition within the context of nursing.

Design/methodology/approach – This viewpoint article is supported by literature review, statutory documents and expert knowledge evidence. All these sources provided a unified narrative of the background, current aspects and future needs of patient safety.

Findings – The need for strengthening patient safety and the nurses' role within healthcare's actions towards patient safety are discussed. The predominant role of nurses due to the proportionate size and significant role along with the need for clarification of patient safety in nursing terms is recognised. Research evidence of nursing areas with safety issues and relevant nursing interventions are presented. Based on all findings, a research-based nursing specific patient safety definition is proposed. This definition includes three axes: what is patient harm, how this harm can be eliminated or reduced and which are the areas of nursing practice that are identified to provide opportunity for patient harm. These axes include nursing specifications of the patient safety definition.

Originality/value – It is the first time that a nurse specific patient safety definition is proposed. This definition strives to enhance nurse practitioners' understanding and engagement with patient safety by clarifying aspects of patient safety within everyday nursing practice.

Keywords Patient safety, Nurses, Definition, Nursing areas of practice, Human factors

Paper type Viewpoint

Background

During the past decade, the World Health Organisation (WHO) has included patient safety into its prioritised actions. Any activity around safe practice and safety culture promotion within healthcare is based on the notion that the relevant safety behaviours must be built by the health professionals (World Health Organization, 2011). In 2011 the WHO published their own patient safety curriculum guide (World Health Organisation, 2011), in which they acknowledged the need for healthcare professionals' standardised education and training in patient safety (Walton *et al.*, 2010). Also, within this publication the WHO has highlighted the importance of human factors (teamwork, communication, leadership, stress, etc.) in the application of patient safety. In this publication the WHO has recognised patient safety to be closely linked to the human factors theory and has embedded them into the proposed material of this curriculum guide (World Health Organisation, 2011).



Introduction

Human factors research in aviation has evolved from the realisation that human error has had significant impact in the sector's economy, health and environment (Chatzi *et al.*, 2019). Aviation (through regulatory bodies such as the European Aviation Safety Agency – EASA) have further developed their human factors sector to be included in the industry's policies, operations, mandatory training and accidents/incidents investigation reports. In the past 15+ years, healthcare has started realising the financial and ethical rising cost of errors. This has been the wake-up call to follow the aviation example and start taking steps to strengthen patient safety by initiating and strengthening human factors research (Leonard *et al.*, 2004; Flin, 2007; Pronovost *et al.*, 2011; Carayon *et al.*, 2014). Meanwhile, numerous human factors healthcare courses at various levels (level 8, 9 and 10) have emerged in Europe and the USA.

In the meantime, since safety research had started to emerge in healthcare, researchers have come to the realisation that measuring harm in healthcare is of primary importance. However, in time, researchers came to the realisation that measuring harm has had certain challenges and could not be characterised as accurate. During that time, a rough calculation of a 13% range (3%–16%) was noted in the number of in-patients who suffered from adverse events due to preventable medical errors (Dekker, 2011). However, despite the challenges, healthcare continued to aspire and work for more accurate calculations. In the United Kingdom (UK), in year 2000, the cost of additional hospitalisation within the National Health Service (NHS) England, was officially estimated at a range of 2 billion pounds per year (Dekker, 2011). In England alone, a recent research study has calculated the annual cost of medication errors to be in the range of 100 million pounds with thousands of additional bed days (181,626) and hundreds of deaths (1708) (Elliott *et al.*, 2021).

Similarly, to aviation, the recognition of the excessive financial and ethical cost of errors, along with the strive to mitigate errors and strengthen safety, created the need of official, free access and systematic investigations of incidents and accidents within healthcare systems. Similar investigation processes are used in other highly regulated and complex industries, as they have been incorporated into their statutory processes for many decades now and have been part of their safety culture promotion. In healthcare, such processes are at their infancy. In the UK, patient safety incidents' data collection and reporting are still work in progress. In a dedicated website, run by the NHS England (2022), users can find relevant data since 2003. Since that date, data collection and reporting techniques, formats and geographical areas have been growing and evolving to become more inclusive and efficient. Currently in Europe, there are two independent dedicated healthcare investigation boards. These are the Healthcare Safety Investigation Branch (HSIB) (Healthcare Safety Investigation Branch, 2022) of the UK and the Norwegian Healthcare Investigation Board (Ukom) (Ukom, 2022) of Norway.

Other European countries do not have dedicated healthcare safety investigation entities yet as they include healthcare investigations to their general safety investigation authorities. HSIB and Ukom have only recently been established (2017 and 2019 respectively). There is a wider understanding that common language is a necessity for collaboration and progress around patient safety. There is a growing activity in common conferences and webinars participation; HSIB working language is English and Ukom are currently in the process of translating all their reports in English. In the USA, Patients for Patient Safety US (PFPS US) (Patients for Patient Safety US, 2022) is an American organisation that is currently working for the creation of an independent healthcare investigation board.

As far as healthcare's workforce is concerned, most current data indicate that beside the huge global shortage in nurses, the nursing occupational group is the largest (59%) amongst all distinct groups within healthcare (World Health Organisation, 2020). Even though, nurses outnumber all other healthcare subgroups, healthcare culture is hugely based on the medical group's subculture (Dekker, 2011; Walton *et al.*, 2010). This subculture keeps the doctors at the centre of attention rather than the patient, and it is well known that patients are in the

centre of patient safety (Walton *et al.*, 2010; Dekker, 2011). Over the past 15 years, a movement towards patient safety and quality care within healthcare has initiated change, but this change is slow (Pronovost *et al.*, 2011; Veit, 2017; Waterson and Catchpole, 2016).

This large proportion of nurses within the global healthcare community and the main characteristic of their duties (being present and responsible for patients 24 h, seven days a week) places them on the leading role of patient safety (Mwachofi *et al.*, 2011; Kritsotakis *et al.*, 2022; Rossiter *et al.*, 2020). Many research studies have investigated further nurses' perception and performance on patient safety. An indicative list of most current research studies that follows next, shows that several issues with patients' safety that have been revealed within the wider context of the nursing practice. These issues can be roughly categorised as organisational (Mwachofi *et al.*, 2011) and human factors (Mwachofi *et al.*, 2011; Bukoh and Siah, 2020; Wang and Dewing, 2021; Cho *et al.*, 2022; Kritsotakis *et al.*, 2022) along with particular nursing practice issues (Blay and Roche, 2020; Foster *et al.*, 2018; Hunt and Chakraborty, 2021; Halverson and Scott Tilley, 2022). Moreover, current research has turned its attention to the evaluation of nursing care standards, in which certain aspects of nursing, e.g. low scores in open communication and lack of assertiveness, have been attributed to low standards (Kritsotakis *et al.*, 2022).

Reflecting the WHO and multiple other government, independent and other organizations' drive towards safer healthcare around the world, nursing research is currently focussed on enhancing patient safety. With this in mind, and as nurses are a fundamental part of healthcare globally (in proportion and significance), their role should be pivotal in breaking through in this field. The WHO defines patient safety as the health care discipline that deals with the reduction and prevention of all conditions that can appear to be harmful and painful to patients during their care (World Health Organisation, 2011). Similar general definitions have been identified in other nursing peer reviewed publications (Liu *et al.*, 2014; Torkaman *et al.*, 2022; Kritsotakis *et al.*, 2022). This definition sets the foundation, the basic principle of patient safety. However, to reflect the nursing leading role within patient safety, a nursing dedicated patient safety definition is of primary importance.

Effective nursing practice is the safe keeper of patients. For this reason, a dedicated definition of patient safety on nursing practice and the identification of the framework of nursing practice areas that are linked with the reinforcement of patient safety are proposed. Defining accurate patient safety for nurses will provide common ground for effective education, training and improved safe practice. Nurses will need their own definition that includes aspects of their own practice, to promote their ownership of the term and enhance its inclusion into the responsibility and accountability of their role. This action will not only direct nurses' education and training, but also their personal and organisational attention and sensitisation towards the specific areas of their practice that appear problematic and need improvement, in relation to patient safety.

Patient safety areas for improvement

To produce such a definition, a first step would be to investigate the areas of nursing practice that patient safety issues arise. These areas fall within the wider areas recognised by multiple state documents, strategies and policies (Health Service Executive, 2022). These wider areas have been indicated as areas that need to be prioritised for patient safety improvement. Each geographical area and healthcare provider need to establish the ones that apply to their own patient care reality and update them frequently. For example, for Ireland between 2019–2024, these areas are.

- (1) “Healthcare related infection and antimicrobial resistance
- (2) Recognition and response to clinically deteriorating patients

- (3) Patients with disabilities and mental health
- (4) Medication errors
- (5) Patients' falls
- (6) Recognising, reducing and managing venous thromboembolism (VTE)
- (7) Vulnerable patients
- (8) Care within high-risk environments
- (9) Pressure ulcers
- (10) Transitions of care including clinical handover
- (11) Sepsis
- (12) Violence, harassment and aggression
- (13) Preventable birth injuries in babies" (Page 16) ([Health Service Executive, 2022](#))

However, within this wide list of risks for the total of healthcare practitioners "areas of care, the subsequent mapping of specified nursing processes is of imperative importance. This mapping of processes around patients that provide opportunities for patient harm is an excellent starting point to identify the areas that are the nurses' primary responsibility to practice safety. Providing nurses with a list of specified areas of their responsibilities towards patients will recognise and strengthen specific conditions/preconditions that will help nurses to avoid human error ([Dupont, 1997](#)). These human factors' related conditions/preconditions are part of Dupont's Dirty Dozen. The Dirty Dozen has been initiated by the aviation industry ([Chatzi et al., 2019](#)) and has lately been utilised by healthcare as well ([Carthey, 2019](#); [Cohen and Smetzer, 2015](#); [Poller et al., 2020](#)). Therefore, keeping in mind this list, the proposed mapping will benefit safe nursing practice by contributing positively to their,

- (1) Knowledge, by giving nurses the exact areas of care they need to focus on, nurses are also given the opportunity to get the relevant subject matter expert knowledge (either this takes place during a nursing educational/training activity or during practice)
- (2) Self-awareness, receiving guidelines and knowledge on prioritised areas of safe nursing care will enhance nurses' understanding of risks within their practice and will enable them to evaluate their own performance and be able to predict outcomes after own actions.
- (3) Assertiveness, being knowledgeable and self-aware, nurses will be able to recognise risks within their wider clinical environment and they will be confident and empowered to actively work on the rectification of this unsafe clinical practise. This attribute will enable nurses to oppose imposed pressure and avoid conforming to norms that contradict with safe clinical processes.

Method

To identify the nursing processes, around patients/areas of care, that need to be included into the nurse specific patient safety definition, first they need to be mapped against safety-related outcomes. This means that these nursing processes must be examined for any or all indications of patients' characteristics reports, quality care metrics, other safety outcomes ([Rossiter et al., 2020](#)). This process will result to an up-to-date list of nursing processes/areas that appear with low safety standards and need to be prioritised for safety improvement

actions. Nursing research is a designated source to provide constantly new evidence that can be used to keep this nursing processes/areas list updated and subsequently current.

Results

A recent publication, that followed the umbrella review (review of systematic reviews or meta-analyses) (Rossiter *et al.*, 2020) was selected by the authors. This paper reviewed systematically 16 systematic reviews that investigated the impact of person-centred care on patient safety between 2000 and 2019. Within this research project a range of interventions for several nursing areas of practice with safety issues were revealed (Rossiter *et al.*, 2020). These results are presented in Table 1.

Each research study that has been included in this review has investigated proposed interventions to nursing areas with safety concerns. Based on Table 1, all presented nursing areas have been identified as areas of nursing care that need to be prioritised in regard to patient safety and consequently to be acted upon. Under this light, a patient safety definition within the nursing context is proposed as following:

Patient safety is the state in which harm to patients from nursing practice is eliminated or reduced so far as reasonably practicable through a continuing process of adverse effects' identification.

This proposed definition includes three axes: (1) What is harm for patients, (2) How this harm can be eliminated or reduced and (3) Which are the areas of nursing practice that are identified to provide opportunity for patient harm.

To specify accurately the three axes, tabulation of the umbrella review's results according to these three axes was performed (Rossiter *et al.*, 2020). The tabulation led to the formation of the following specifications that were created for each one of the three axes.

- (1) What is harm for patients?
 - Patients' unscheduled primary care visits,
 - Hospitalisation, emergency room (ER) visits
 - Neuro-psychiatric symptoms (NPS),
 - Patients' injuries, deterioration and mortality from unknown and known reasons (Rossiter *et al.*, 2020) (Figure 1)
- (2) How this harm can be reduced or even be eliminated?
 - Nursing research exploring and indicating innovative nursing processes to eliminate or reduce specified harm (Figure 1)
- (3) Which are the areas of nursing practice that are identified to provide opportunity for patient harm?

Nursing research investigating and identifying problematic safety related nursing practice areas:

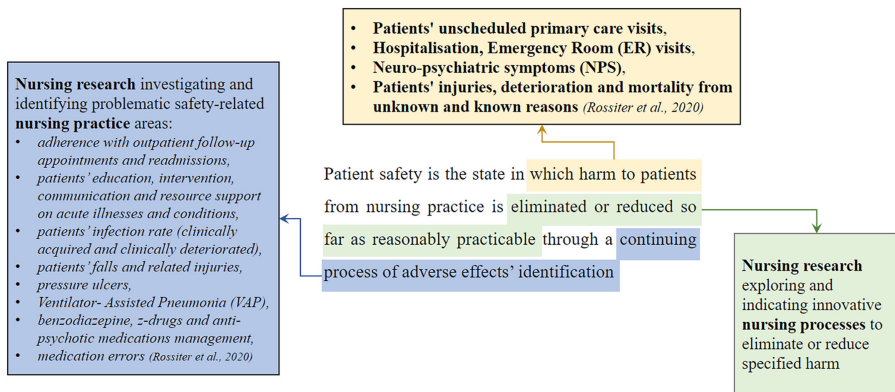
- Adherence with outpatient follow-up appointments and readmissions,
- Patients' education, intervention, communication and resource support on acute illnesses and conditions,
- Patients' infection rate (clinically acquired and clinically deteriorated),
- Patients' falls and related injuries,
- Pressure ulcers,

Nursing areas with safety issues	Settings	Nursing intervention	Statistically significant intervention
Acute asthma events	Outpatient healthcare setting	Patient-centred home management plan for asthma care	No
Adherence with outpatient follow-up appointments	Hospital setting for adults and children	Patient-centred bedside rounds	No
Agitation	Patients with dementia/long term facilities, older people	Person-centred care and activities for dementia patients, Dementia care mapping	Yes
Hospitalisation	Outpatient healthcare settings	Patient education, digital and technology patient support	Yes
Emergency Room (ER) visits	Outpatient healthcare settings	Patient education, digital and technology patient support	Yes
Falls, fall related injuries	Long-term and acute care facilities	Person-centred care and activities, interventions	Yes
Infection rate	Long term aged care facilities	Person-centred care approaches	No
Infection (hospital-acquired) + clinical deterioration (combined)	Hospital setting for adults and children	Patient-centred bedside rounds	No
Medications – reduced use or dose of benzodiazepine (BZD) or z-drugs	Long-term and acute care facilities	Patient-centred interventions, information, communication, clinicians' characteristics	Yes
Medications – discontinuation of rates of Benzodiazepine (BZD) or z-drugs use	Long-term and acute care facilities	Patient-centred interventions, information, communication, clinicians' characteristics	Yes
Medications – appropriate prescribing of benzodiazepine (BZD) or z-drugs	Long-term and acute care facilities	Patient-centred interventions, information, communication, clinicians' characteristics	Yes
Medications – reductions in anti-psychotic medications	Long term aged care facilities	Patients with dementia/long term facilities, older people, person-centred activities for dementia patients	Yes
Medication errors	Acute care	Patient-centred interventions	No
Mortality (unadjusted)	Hospital setting for adults and children	Patient-centred bedside rounds	Yes
Mortality (all cause)	All settings	Patient-centred integrated care, digital patient support, communication	Yes
Mortality (cardiac and cardiovascular)	All settings	Patient-centred integrated care	No
Neuro- psychiatric symptoms (NPS)	Long term care facilities	Multi-modal patient-centred care approaches at organisation level	No
Pressure ulcers	Acute care	Person-centred care	No
Readmission with heart failure within 12/12	Hospital setting	Person-centred care and education on self-care, activity and nutrition	Yes
Readmission	Psychiatric inpatient facilities	Specified intervention	Yes
Unscheduled primary care visits	Outpatient healthcare settings	Patient-centred technology for asthma care	No
Ventilator- assisted pneumonia	Hospital setting for adults and children	Patient-centred bedside rounds	Yes

Source(s): [Rossiter et al. \(2020\)](#)

Table 1.
The list of several nursing areas with safety issues, the healthcare setting they were observed and the relevant nursing interventions to augment patient safety

Figure 1.
Graphical presentation of the proposed patient safety in nursing definition with the highlighted axes and their specifications



- Ventilator-assisted pneumonia (VAP),
- Benzodiazepine, z-drugs and anti-psychotic medications management,
- Medication errors (Rossiter et al., 2020) (Figure 1)

Discussion – conclusion

A research-based definition not only adds value, but it also adds credibility and currency. Furthermore, a definition should provide insight on the specifications of the term under explanation to enhance the understanding and adoption by the relevant subjects. A nursing specific patient safety definition is especially important in the understanding of the role of human factors and how they can affect safety. This definition can clarify the meaning of harm to patients, the areas that impose risks for patient's harm and the ways that nursing practitioners can intervene to eliminate or reduce this harm. These three axes of the proposed definition will help all stakeholders (nursing education, regulators, nurse practitioners) to implement patient safety practically and actively into their agendas and practice. For nurses to practice safety, they need to understand the concept of patient safety, put it into perspective (their everyday practice) and be provided with the relevant tools (education, training, knowledge, policies, etc.) for its successful implementation. To achieve in this, nurses need to be trained and implement human factors principles. Therefore, besides forming nurses' individual scope of practice, the proposed definition can be used to revamp any framework, curriculum or process that needs to be re-evaluated, under the human factors prism. This method of re-evaluation will contribute to mitigating and/or reduce patient harm. Because patient safety needs clarity and specific goals, and this can only be achieved with a concise definition that enables nurse practitioners succeed in their ultimate role: to do no harm (Nightingale et al., 2010).

References

- Blay, N. and Roche, M.A. (2020), "A systematic review of activities undertaken by the unregulated Nursing Assistant", *Journal of Advanced Nursing*, Vol. 76, pp. 1538-1551.
- Bukoh, M.X. and Siah, C.R. (2020), "A systematic review on the structured handover interventions between nurses in improving patient safety outcomes", *Journal of Nursing Management*, Vol. 28, pp. 744-755.

- Carayon, P., Wetterneck, T.B., Rivera-Rodriguez, A.J., Hundt, A.S., Hoonakker, P., Holden, R. and Gurses, A.P. (2014), "Human factors systems approach to healthcare quality and patient safety", *Applied Ergonomics*, Vol. 45, pp. 14-25.
- Carthey, J. (2019), "Creating safety II in the operating theatre: the durable dozen", *Journal of Perioperative Practice*, Vol. 29, pp. 210-215.
- Chatzi, A.V., Martin, W., Bates, P. and Murray, P. (2019), "The unexplored link between communication and trust in aviation maintenance practice", *Aerospace*, Vol. 6, p. 66.
- Cho, S., Lee, J.L., Kim, K.S. and Kim, E.M. (2022), "Systematic review of quality improvement projects related to intershift nursing handover", *Journal of Nursing Care Quality*, Vol. 37, pp. E8-e14.
- Cohen, M.R. and Smetzer, J.L. (2015), "Let's target this 'dirty dozen' for improvement during 2015; caution: 'per liter' content on manufacturers' IV bag labels", *Hospital Pharmacy*, Vol. 50, pp. 94-98.
- Dekker, S. (2011), *Patient Safety : A Human Factors Approach*, Taylor & Francis Group, Baton Rouge.
- Dupont, G. (1997), "The dirty dozen errors in maintenance", *11th Symposium on Human Factors in Maintenance and Inspection: Human Error in Aviation Maintenance*, Washington, DC, 12-13 March 1997.
- Elliott, R.A., Camacho, E., Jankovic, D., Sculpher, M.J. and Faria, R. (2021), "Economic analysis of the prevalence and clinical and economic burden of medication error in England", *BMJ Quality and Safety*, Vol. 30, pp. 96-105.
- Flin, R. (2007), "Measuring safety culture in healthcare: a case for accurate diagnosis", *Safety Science*, Vol. 45, pp. 653-667.
- Foster, M.J., Gary, J.C. and Sooryanarayana, S.M. (2018), "Direct observation of medication errors in critical care setting: a systematic review", *Critical Care Nursing Quarterly*, Vol. 41, pp. 76-92.
- Halverson, C.C. and Scott Tilley, D. (2022), "Nursing surveillance: a concept analysis", *Nurs Forum*, Vol. 57, pp. 454-460.
- Health Service Executive (2022), "Patient safety strategy 2019-2024", in Executive, H.S. (Ed.), *Dublin: Health Service Executive*.
- Healthcare Safety Investigation Branch (2022), "About HSIB", available at: <https://www.hsib.org.uk/who-we-are/about-hsib/> (accessed).
- Hunt, S. and Chakraborty, J. (2021), "Dose verification errors in hospitals: literature review of the eMAR-based systems used by nurses", *Journal of Nursing Care Quality*, Vol. 36, pp. 182-187.
- Kritsotakis, G., Gkorezis, P., Andreadaki, E., Theodoropoulou, M., Grigoriou, G., Alvizou, A., Kostagiolas, P. and Ratsika, N. (2022), "Nursing practice environment and employee silence about patient safety: the mediating role of professional discrimination experienced by nurses", *Journal of Advanced Nursing*, Vol. 78, pp. 434-445.
- Leonard, M., Graham, S. and Bonacum, D. (2004), "The human factor: the critical importance of effective teamwork and communication in providing safe care", *Quality and Safety in Health Care*, Vol. 13 Suppl 1, pp. i85-i90.
- Liu, Y., Avant, K.C., Aunguroch, Y., Zhang, X.-Y. and Jiang, P. (2014), "Patient outcomes in the field of nursing: a concept analysis", *International Journal of Nursing Sciences*, Vol. 1, pp. 69-74.
- Mwachofi, A., Walston, S.L. and Al-Omar, B.A. (2011), "Factors affecting nurses' perceptions of patient safety", *International Journal of Health Care Quality Assurance*, Vol. 24, pp. 274-283.
- NHS England (2022), *National Patient Safety Incident Reports*. NHS, England, available at: <https://www.england.nhs.uk/patient-safety/national-patient-safety-incident-reports/national-patient-safety-incident-reports-13-october-2022/> (accessed 11 November 2022)
- Nightingale, F., Skretkovicz, V. and Nightingale, F. (2010), *Florence Nightingale's Notes on Nursing what it Is and what it is Not & Notes on Nursing for the Labouring Classes; Commemorative Edition with Commentary*, Springer, New York.

-
- Patients For Patient Safety US (2022), "Patients for patient safety US | home", available at: <https://www.pfps.us/> (accessed).
- Poller, D.N., Bongiovanni, M., Cochand-Priollet, B., Johnson, S.J. and Perez-Machado, M. (2020), "A human factor event-based learning assessment tool for assessment of errors and diagnostic accuracy in histopathology and cytopathology", *Journal of Clinical Pathology*, Vol. 73, pp. 681-685.
- Pronovost, P.J., Holzmueller, C.G., Ennen, C.S. and Fox, H.E. (2011), "Overview of progress in patient safety", *American Journal of Obstetrics and Gynecology*, Vol. 204, pp. 5-10.
- Rossiter, C., Levett-Jones, T. and Pich, J. (2020), "The impact of person-centred care on patient safety: an umbrella review of systematic reviews", *International Journal of Nursing Studies*, Vol. 109, 103658.
- Torkaman, M., Sabzi, A. and Farokhzadian, J. (2022), "The effect of patient safety education on undergraduate nursing students' patient safety competencies", *Community Health Equity Research & Policy*, Vol. 42, pp. 219-224.
- UKOM (2022), "Norwegian healthcare investigation board (Ukom)", available at: <https://ukom.no/> (accessed).
- Veit, K.R. (2017), "Regional patient safety and quality leaders aim to reduce disparities in healthcare with collaborative approach", *International Journal of Health Governance*, Vol. 22, pp. 37-46.
- Walton, M., Woodward, H., Van Staaldin, S., Lemer, C., Greaves, F., Noble, D., Ellis, B., Donaldson, L. and Barraclough, B. (2010), "The WHO patient safety curriculum guide for medical schools", *Quality and Safety in Health Care*, Vol. 19, p. 542.
- Wang, M. and Dewing, J. (2021), "Exploring mediating effects between nursing leadership and patient safety from a person-centred perspective: a literature review", *Journal of Nursing Management*, Vol. 29, pp. 878-889.
- Waterson, P. and Catchpole, K. (2016), "Human factors in healthcare: welcome progress, but still scratching the surface", *BMJ Quality and Safety*, Vol. 25, p. 480.
- World Health Organisation (2011), "Patient safety curriculum guide: multi-professional edition", *World Health Organisation*, WHO Press.
- World Health Organisation (2020), "State of the world's nursing 2020: investing in education, jobs and leadership", *World Health Organisation*, World Health Organisation, Geneva.

Corresponding author

Anna V. Chatzi can be contacted at: anna.chatzi@ul.ie