Patient safety: a literative review on the impact of nursing empowerment, leadership and collaboration

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Background: Nurses are ideally placed to drive the safety and quality agenda within health care because of their unique proximity to patients. There have been some attempts to look at the links between nursing care and quality outcomes, but relatively little on the connection between nursing and patient safety. Therefore, exploring the evidence on this issue was indicated, excluding links to nurse staffing and environment.

Aims: The aim of this study was to identify to what extent and in what way nursing leadership, collaboration and empowerment can have a demonstrable impact on patient safety.

Methods: A search of electronic databases was undertaken from 1998 to 2008. One thousand seven hundred eighty-eight titles and abstracts were retrieved, and the full text of 65 relevant papers was obtained and reviewed. Data extraction was undertaken if papers met the following inclusion criteria: a measure of impact from a study or audit, patient safety and nursing focused, and identified one of the following issues (leadership, advocacy, interdisciplinary working, empowerment and collaboration). Eleven papers were selected and critically reviewed.

Finding: Of the 11 papers, 7 were undertaken in the USA, 2 in Canada, 1 in the UK and 1 in Iceland. Selected papers comprised of one systematic review, one cohort study, four qualitative studies, three cross-sectional studies, one survey and an evaluation. The quality of papers was variable and provided limited evidence of impact or effectiveness in terms of nurses directly influencing patient safety.

Conclusion: Gaps currently exist in relation to knowledge on the extent and nature of the role of nurses in patient safety improvement. Considerable work is required before comprehensive solutions can be further developed. Huge potential exists for improvement through nursing empowerment, leadership and the development of tools to strengthen and support nurses’ influential role in the quality and safety movement; therefore, the need for investment into well-designed research studies to address these gaps is obvious, required and timely.

Keywords: Collaboration, Empowerment, Leadership, Patient Safety, Teamwork

Introduction and background

The pursuit of increased and enhanced safety for patients in health care has resulted in the patient safety movement occupying a position of high status on the health care agenda of most industrialized nations. The World Health Organisation (WHO) Patient Safety programme is attempting to achieve equity by promoting activities and programmes that elevate patient safety to a similar position within transitional and developing countries. WHO Patient Safety exists to facilitate the development of patient safety policy and practice in all member states and to act as a major force for improvement internationally (WHO 2008a).
However, patient safety is an evolving science, and there remain many unknowns, particularly concerning the burden of disease as a result of unsafe care. In some developed countries, the occurrence of adverse events is estimated to stand at 10% of admissions. In developing and transitional countries, epidemiological data are sparse, and work is in progress, led by WHO Patient Safety, to establish the nature and extent of patient harm attributable to health care in these countries (WHO 2008a).

Efforts to build safer health care systems have seen the global creation of organizations with the sole purpose of improving patient safety. National-level patient safety bodies have emerged in the last decade in a growing number of industrialized countries, including (not exclusively) Australia, Canada, England and Wales, and the USA. Most recently, and reflecting the international acknowledgement of the importance of the safety agenda beyond the West, national/hospital steering committees for patient safety have been established in several member states within the WHO region of Africa (WHO 2008a).

It has been suggested that nurses are ideally placed to drive the safety and quality agenda within health care. Bargagliotti & Lancaster (2007) describe the nursing profession as forming a ‘strong, secure safety net for consumers of healthcare’. Nursing care has even been described as resting on a foundation of safe practice (Carroll 2005) with safety as an integral part of this care. Some authors have referred to nurses and those who lead them as the last layer in the Swiss Cheese model (Spears 2005). There is therefore a theme within the literature on safety and nursing that strongly suggests that nurses are key to every safety initiative and every aspect of the safety movement. This potentially places great responsibility on the profession, and without the requisite preparedness, particularly ensuring nurses are empowered to meet these responsibilities, it is likely that they will not be realized.

Furthermore, if nurses are key actors within the safety movement, a clear and growing body of evidence should exist to measure the impact of nurses, particularly nurse leadership, empowerment and advocacy, on patient outcome.

Working within a global (WHO Patient Safety) and national (National Patient Safety Agency) context has exposed the authors to the extent of nursing within existing patient safety programmes of work. Within these programmes, nursing empowerment appears to be presented as a crucial component of improvement success, e.g. in managing or implementing the checklists to improve practice to reduce central venous catheter-related bacteraemia and contribute to safer surgery.

A body of evidence has emerged in recent years, largely emanating from the USA, linking nurse staffing levels to the work environment and patient safety. Most research in this area has focused on increased nurse staffing, including raising the proportion of nursing hours provided by registered nurses and even increasing the total number of nurses, and a resulting reduction of adverse patient outcomes, including patient deaths, as well as shortened lengths of stay (Redman 2008). In addition, changes to the work environment have been indicated as a result of the research, which has demonstrated that increased nursing workload and the stress associated with hospitals running at over-capacity result in a 28% increase in the rate of adverse events (Weissman et al. 2007). Against the backdrop of this growing body of evidence, this literature review acknowledges the compelling evidence linking organizational characteristics, such as workload, to patient safety. However, this work is excluded from being a focus of this paper, which rather turns its attention towards exploring other potentially significant components of nursing care that might influence the safety of patients, acknowledging that neither can be seen in isolation.

The review therefore attempts to justify the widely made assumptions concerning the critical role nurses play in patient safety by reviewing the available literature to explore the extent of quality studies that support such a role in modern health systems, their influence, leadership and the opportunities to strengthen these through nursing empowerment.

Aims
A critical review of nursing-focused patient safety literature was undertaken to identify if and how nursing leadership, collaboration and empowerment can have a demonstrable impact on patient safety.

Definitions
The following definitions of key terms were used around which to guide the search:

- Leadership: the ability to influence others (Tapp et al. 2004) and engage them as partners in the development and achievement of shared visions (Redfern 2008).
- Collaboration: a process influenced by respectful interactions among front-line staff, including information sharing and coordination of activities to achieve organizational goals (Nembhard et al. 2007).
- Empowerment: an interpersonal process whereby the correct information, support, resources and environment exist, enabling the formulation of increased personal ability and effectiveness to set and achieve organizational goals (Hawks 1992). In the context of patient safety, this is translated as the extent to which nurses possess the power to influence the behaviours of those around them in relation to patient safety. This definition is influenced by the theories of Kanter (1993) and the classic work on organizational power dynamics. The premise of this theory is that sufficiently empowered individuals have the capacity to influence the behaviour of those around them.
• Patient safety: freedom from accidental injury (Kohn et al. 2000), emphasizing the processes, working practices and systematic activities that prevent or reduce the risk of harm to patients (Department of Health 2004).

**Methods**

**Search strategy**

A search of the electronic databases Medline, CINAHL, British Nursing Index and Health Business Elite was undertaken, limited to English language and papers published from 1998 to the end of July 2008. Searches were undertaken using individual database thesauri and free text; the search focused specifically on patient safety aspects of nursing and nursing roles using the following search terms and concepts: leadership, organizational culture, management culture, innovation, strategy, decision making, change management, inter-professional communication and collaboration, empowerment, advocacy and assertiveness, and patient safety research. In addition, key nursing and patient safety websites were identified and searched using the same criteria. Discussions were undertaken with key international nursing associations, such as the International Council of Nurses (ICN) and the WHO Nursing programme, to check for additional work focusing on the search criteria.

Using the search strategy above, 1788 titles and abstracts were retrieved. These were reviewed for possible relevance and selected for full review by one reviewer, with a final selection of papers made by two further reviewers. The full text of 65 relevant papers was obtained and reviewed, and then data extraction was undertaken if papers met the following inclusion criteria:

1. a measure of impact from a study or audit,
2. patient safety and nursing focused, and
3. identified one of the following key professional nursing issues (leadership, advocacy, interdisciplinary working, empowerment and collaboration).

Acknowledging the volume of literature already in existence, which has rigorously explored the relationship between nurse staffing, the work environment and patient safety, papers were excluded if their main focus was on nurse staffing numbers, levels and workload.

The final 11 papers were selected and critically reviewed. A data extraction form was used to systematically review each paper, and results were checked by three reviewers to ensure consistency and validity.

**Findings**

These 11 papers were included in the final review for data extraction. Of the 11 papers published between 2004 and 2008, 7 were undertaken in the USA, 2 in Canada, 1 in the UK and 1 in Iceland (Table 1).

**Quality of papers**

Selected papers comprised of one systematic review, one cohort study, four qualitative studies, three cross-sectional studies, one survey and a paper that is best described as an evaluation. Despite the majority of papers being excluded, the quality of the remainder was still variable. The systematic review (Wong & Cummings 2007) contained papers that were selected from computerized databases and manual searches, then data extraction and methodological quality assessments were completed for the final papers. However, other papers from the 11 final papers did not use such systematic methods, and the quality of studies retrieved limits any firm conclusions on the links between nursing leadership and patient outcomes. Of the three cross-sectional studies, Spence Laschinger & Leiter (2006) and Boyle (2004) were limited by using self-reported measures for key variables, thus introducing potential biases. Vogus & Sutcliffe (2007) reported errors as the outcome measure, despite stating the limitations attached to this as a measure of patient safety.

The survey (Mastal et al. 2007) has several methodological limitations, including selection of participants and sample size. The cohort study (Berenholtz et al. 2004) used scientific methods, but it is not possible to isolate the outcomes of nurse interventions from overall results of interventions from the cross-disciplinary team. Batcheller et al. (2004) combined a non-systematic literature review with the partially completed evaluation of a care model. The qualitative studies (Alfredsdottir & Bjornsdottir 2007; Currie & Watterson 2007; Elder et al. 2008; Simpson et al. 2006) varied in quality, the best giving valuable insight into nurses’ perceptions of patient safety that might be explored in further studies.

**The Studies**

A number of similar topic areas and characteristics were identified as the primary focus of the papers (Table 1).

**Leadership**

Four papers focused on leadership and identify behaviours and styles that might impact on patient safety. A significant relationship was found between positive leadership practices and reduced prevalence of adverse events as well as on increased patient satisfaction (Wong & Cummings 2007). This systematic review was well conducted and identified communication openness, formalization, participation in decision making and relationship-orientated leadership as some of the key leadership practices. However, the quality of the studies they reviewed and the variation of the outcomes examined make it difficult to draw firm conclusions.
Table 1 Characteristics of studies

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<thead>
<tr>
<th>Authors</th>
<th>Design</th>
<th>Setting</th>
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<th>Results</th>
<th>Patient safety topic</th>
<th>Country</th>
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<tr>
<td>Alfredsdottir &amp; Bjornsdottir (2007)</td>
<td>Part of an action research project</td>
<td>University hospital, operating room</td>
<td>Semi-structured interviews with eight nurses, followed by two focus groups of four nurses</td>
<td>Existing culture of prevention and protection that characterizes operating-room nursing as crucial in enhancing safety. The organization of work into specialty teams was considered essential. Increased speed of work in an environment where enhanced productivity is imperative, as well as imbalance in staffing, was identified as the main threats to safety.</td>
<td>Factors threatening and enhancing patient safety, preventing errors</td>
<td>Iceland</td>
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<td>Batcheller et al. (2004)</td>
<td>Literature review and case report</td>
<td>Network of seven acute care hospitals (four magnet hospitals)</td>
<td>Primary Care Team Care model</td>
<td>77% reduction in medication errors on a maternity unit in 6 months after implementation of the model</td>
<td>Framework for an enhanced work culture with increased communication and support for the nurse by promoting leadership, mentoring and collaborative practice</td>
<td>USA</td>
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<td>Berenholtz et al. (2004)</td>
<td>Prospective cohort study with concurrent control ICU</td>
<td>Intervention: adult patients on the ICU (16 beds) undergoing general, orthopaedic, transplant, trauma and vascular surgery. Control: 15-bed ICU with adult patients undergoing cardiac surgery.</td>
<td>Interdisciplinary team including the SICU co-directors, ICU physicians, nurses and infection control practitioners</td>
<td>Pre-intervention, 62% physicians adhered to guideline. During intervention: • Intervention group: CR-BSI rate decreased from 11.3/1000 catheter days in the 1st quarter of 1998 to 0/1000 in the 4th quarter of 2002 • Control: 5.7/1000 to 1.6/1000 • ( P = 0.56 ) (catheter days between beginning quarter and end quarter not statistically significant) Estimate prevented 43 CR-BSIs, eight deaths and $1 945 922 in study ICU</td>
<td>Catheter-related bloodstream infections Tested: • Creation of a multidisciplinary team  • Education for the multidisciplinary team  • Creation of a catheter insertion cart  • Asking providers daily whether catheter could be removed  • Evidence-based guidelines checklist  • Empowering nurses to stop catheter insertion if violation of guideline observed Controlled with: • educational intervention to increase provider awareness of evidence-based infection control practices for inserting and maintenance of central line catheters</td>
<td>USA</td>
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Table 1 Continued

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<tr>
<td>Boyle (2004)</td>
<td>Exploratory cross-sectional Nursing Work Index-Revised survey of nurses and adverse events from standard hospital databases or entries in free-standing databases</td>
<td>944-bed teaching hospital; 21 medical and surgical units</td>
<td>Staff $n=390$; patient discharges $n=11,496$</td>
<td>Higher degrees of nurse-perceived autonomy/collaboration were associated with better outcomes for patients experiencing adverse events (failure to rescue) and UTIs</td>
<td>Nurse-sensitive adverse events: falls, nosocomial pressure ulcers, UTIs, pneumonia, cardiac arrest, mortality, LOS and failure to rescue</td>
<td>USA</td>
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<td>Currie &amp; Watterson (2007)</td>
<td>None specified</td>
<td>NHS and independent sector (specific setting in which nurses’ work is not given)</td>
<td>75 NHS and independent-sector nursing staff, all levels (health care assistants – modern matrons) attending Quality Improvement Network meetings or Clinical Leadership programme sessions</td>
<td>Nurses identified their perceived challenges to the delivery of safe care: Blame culture, communication, feedback and learning lessons, multidisciplinary education, supporting students, workloads and targets, suitability of admissions and staffing levels</td>
<td>What nurses believe are the challenges to the delivery of safe care</td>
<td>UK</td>
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<td>Elder et al. (2008)</td>
<td>33 nurses from eight focus groups, safety climate surveys from 92 nurses, and three leadership checklists reviewed.</td>
<td>ICUs</td>
<td>33 nurses from eight focus groups, safety climate surveys from 92 nurses</td>
<td>Perceptions of nurses regarding patient safety problems matched a checklist used by management during walk rounds, relating to environment issues such as alarms, restraints and safe drug administration</td>
<td>Explore nurses perceptions of patient safety following participation in a safety project that decreased hospital-acquired infections</td>
<td>USA</td>
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<td>Mastal et al. (2007)</td>
<td>Cohort study, face-to-face focus group and structured telephone interviews</td>
<td>Hospital Boards</td>
<td>73 staff from 63 hospitals (22 CNOs, 29 CEOs, 22 Board chairs; focus group 5 CNOs)</td>
<td>Significant differences in perceptions of CNOs vs. those of Board chairs and CEOs. CNOs reported a greater familiarity of landmark reports on quality and patient safety than Board chairs. Boards have limited comprehension of salient nursing-quality issues</td>
<td>Compared perspectives of nurse executives, CEOs and Board chairs: understanding and engagement in hospital quality and patient safety initiatives</td>
<td>USA</td>
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<tr>
<td>Study Authors</td>
<td>Study Design</td>
<td>Setting</td>
<td>Sample Size/Characteristics</td>
<td>Findings/Research Question</td>
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<td>Simpson et al. (2006)</td>
<td>Multicentre qualitative study, focus groups and in-depth interviews</td>
<td>Labour and birth units in four Midwestern community hospitals</td>
<td>54 labour nurses and 38 obstetricians</td>
<td>Nurses and physicians shared the common goal of a healthy mother and baby but did not always agree on methods to achieve that goal. Two clinical situations critical to patient safety (fetal assessment and oxytocin administration) were frequent areas of disagreement and sources of mutual frustration, often leading to less than optimal teamwork.</td>
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<td>Spence Laschinger &amp; Leiter (2006)</td>
<td>Cross-sectional study/survey</td>
<td>Acute care hospitals</td>
<td>8597 nurses, average age 44 years, 98% female, selected by random stratified sampling from the nursing population of British Columbia and Ontario</td>
<td>Measures indicating nursing leadership (management ability and support for nurses, nurse-physician relationships and adequate staffing/resource) correlate with measures of lower burnout and work engagement, and with self-reports of lower incidence of patient safety incidents.</td>
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<td>Vogus &amp; Sutcliffe (2007)</td>
<td>Cross-sectional survey</td>
<td>Acute care hospitals: emergency, internal medicine, intensive care and surgery nursing</td>
<td>2043 registered nurses and nurse managers in 78 departments (10 hospitals) across five US states. Statistical tests undertaken to check on bias in sample/responders</td>
<td>Regression analysis showed that the combination of safety organizing behaviour and care pathways, and safety organizing behaviour and trusted leadership, was associated with lower levels of medication error. Significant relationship between positive leadership practices (communication openness, formalization, participation in decision making and relationship-orientated leadership) and reduced prevalence of adverse events. Significant indirect relationship between leadership and reduced patient falls and medication errors through increased staff expertise and stability.</td>
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<td>Wong &amp; Cumming (2007)</td>
<td>Systematic review of literature</td>
<td>All</td>
<td></td>
<td>Safety organizing defined as: collecting, analysing and disseminating information from errors and proactively checking indicators within the organization.</td>
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CEO, chief executive officer; CNO, chief nursing officer; CR-BSI, catheter-related blood stream infections; ICU, intensive care unit; LOS, length of stay; SICU, surgical intensive care unit; UTI, urinary tract infection.
Similarly, Spence Laschinger & Leiter (2006), in their prospective study, found that nursing leadership played a fundamental role in creating conditions for work engagement and, ultimately, safety. It linked the roles of nursing leadership as: staff nurses’ policy involvement, staffing levels, and support for a nursing model of care and nurse/physician relationships. Their measurement of patient safety was through nurses’ self-reports of adverse incidents, and so recall bias is a limitation reducing the reliability of the findings.

Vogus & Sutcliffe (2007) conducted a study in 10 hospitals and involved 78 departments, but these were not selected randomly or systematically to create a true cross-section. From a staff questionnaire and a number of incidents reported through the incident reporting system, they showed that when high levels of safety organizing are coupled with trusted leadership and extensive use of care pathways, units experience fewer reported medication errors. The major problem is the use of reported errors as the outcome measure, as they point out this reporting mechanism captures only 5–15% of medication errors.

The fourth study highlighted promoting leadership as a way of supporting novice nurses to deliver care, which was reported to result in improvements in medication incidents (Batcheller et al. 2004). However, this paper combines a non-systematic review of the literature, with a brief description of a model of care and its evaluation, so it is not possible to determine whether this is a balanced review of the topic. Initial results indicated that medication errors had reduced, but this was against a backdrop of no baseline data.

Collaboration/teamwork

Three papers provided a focus on teamwork, nurse/doctor collaboration and patient safety.

Alfredsdottir & Bjornsodttir (2007) studied theatre nurses and their understanding of patient safety. The design was described as an action research and therefore focused on collection and analysis of nurses’ views of patient safety and their role in patient safety. Key findings included a focus on the importance of the multidisciplinary team and the specialized, advanced knowledge developed by nurses as a means to protecting patients and thereby contributing to enhanced safety by pre-empting problems and preventing harm. Ensuring patient safety was seen as a key purpose of the theatre nurses; the work was described as complicated and demanding full concentration to foresee and prevent errors. Strategies to improve safety such as checklists were identified as helpful when in a constant hurry. The study is limited in terms of generalizability by the lack of team interviews despite the stated importance of the team. Although the make-up of the team was not well described, organization of work into specialty teams was highlighted as essential to enhance patient safety.

Simpson et al. (2006) uncovered different issues. This study came up with conclusions on the state of communication between physicians and expert labour nurses. They found that patterns of communication and behaviours were not always reflective of effective teamwork. At times, frequent areas of disagreement and sources of mutual frustration often lead to less than optimal teamwork behaviours. This behaviour demonstrated how they worked in parallel or, on occasions, against each other. They pointed out how patient safety is predicated on trust, open communication and effective interdisciplinary teamwork, and so suggested that efforts to maximize safe care for mothers and babies should be predicated on the development of a common understanding and expectations based on science and standards. It is difficult to be certain about the transferability of these recommendations as labour management policies will differ, and the roles of nurses and physicians may also vary across regions and countries, and across different organizational models. In addition, many staff had experience of only the unit in which they were then working. The paper does not report outcomes from the review of medical records, so any actual harm cannot be ascertained.

Boyle (2004) studied whether organizational factors at the unit level would influence patient outcomes, measured by hospital data on falls, pressure ulcers, urinary tract infections, pneumonia, cardiac arrest, mortality, length of stay and failure to rescue. Twenty-one units were sampled within a single institution, and patient data were all patients discharged from these units over a 6-month period, together with staff surveys. He found that high degrees of nurse-perceived autonomy/nurse-physician collaboration were associated with patients experiencing less adverse events, such as failure to rescue and urinary tract infections, and when continuity/specialization was perceived as high, pneumonia, cardiac arrest and length of stay were low.

The main limitations of this study were that they were based on self-reports and, therefore, subject to opinion and interpretation, and as only one institution was included, any findings may or may not be generalizable.

General issues

Three papers were broad in their review of perceptions of patient safety. One US study focused on the understanding of patient safety and the extent of engagement in quality and safety at a leadership and governance level, with a particular focus on the hospital board, the place where strategic decision making, issues relating to quality and corporate governance matters are addressed (Mastal et al. 2007). They found differences in perceptions on quality and patient safety particularly with the nurse executive, chief executive officer and Board chairs. Chief nursing officers (CNOs) reported a greater familiarity with landmark
reports on quality and patient safety than Board chairs. Plus, Boards had limited comprehension of salient nursing quality issues. Their methods included a convenience sample of hospitals using telephone interviews and focus groups. The study has several limitations as the design relied on differences in perceptions being representative of actual differences. The CNOs maybe right to credit Board members and others with less knowledge than themselves, and no other way of measuring their knowledge and engagement was undertaken other than opinion-based measures. The numbers were small (22 CNOs) and minimal information is provided about them. The authors seem to use perceptions to back up what appears to be their own agenda for the role of the CNO. Therefore, this paper offers opinion rather than evidence.

Currie & Watterson (2007) highlighted nurses’ perceptions of challenges to the delivery of safe care. They suggest a number of ways to improve safety, including the importance of taking a systems approach to the investigation of failures and re-evaluating how disciplinary procedures fit into the safety system, and enhanced communication and feedback, and involving those providing ‘hands on’ care in the development of a safety culture. Non-technical skills such as teamwork and leadership were identified as important. The paper is a non-systematic review of patient safety issues based around a descriptive review of group interviews conducted with 75 nurses from across the UK. There is no research question, and participants were unlikely to be representative of the nursing population as they were participating in quality improvement or leadership programmes. No details are given within this paper of the questions asked, and so it is impossible to know whether there was any bias from the researchers’ methods. The study is limited by the lack of method or methodology, and by it being a description, interpreted by the researchers, of nurse concerns and opinions about patient safety.

The third paper (Elder et al. 2008) measured nurses’ perceptions of patient safety following a safety project that decreased hospital-acquired infections. They found that nurses saw their role in patient safety as protecting the patient and intervening to prevent or enable specific events such as the task ‘double checking’ where they received the immediate satisfaction of preventing a problem by personal action, rather than as proactive analysis and solving of underlying systems’ problems. Nurses did not generalize their experiences of a specific patient safety intervention (hospital-acquired infections project) to their general understanding of patient safety. The limitations relate to the representativeness of the participants and sample size, and the depth and detail of the analysis.

**Multiple interventions**

One paper identified a study testing the implementation of multiple interventions to reduce catheter-related bloodstream infections, and its impressive results demonstrated how these infections were eliminated (Berenholtz et al. 2004). The interventions included educating staff, creating a catheter insertion cart, daily checking of catheter removal, a checklist to ensure guideline adherence and empowering nurses to stop insertion if violation of the guideline was observed. This is a well-conducted prospective cohort study that clearly shows a reduction in infections. Confounding factors were considered but appear unlikely to change the outcomes. It did not provide an evaluation of the individual interventions undertaken; however, interviews with nurses confirmed that the checklist made them feel more comfortable and gave them authorization to intervene when they observed a physician violation in compliance with the guidelines.

**Discussion**

A limited number of studies of variable quality were found in this literature review that focused on nursing and patient safety. This limited evidence may be because of the fact that general research on quality and safety in health care is not yet fully developed, resulting in a paucity of research in this field (Grol et al. 2008). Nursing safety research is likely to be reflective of this situation. Alternatively, another explanation for the lack of evidence could be because of the limited ability and experience of nurses to evaluate improvements and publish nursing development results to improve safety. Nurses in clinical practice rely on oral traditions of knowledge and skill transfer (Wollin & Fair-weather 2007), and historically have tended not to write for publication as part of their role, as it is seen as an arduous and daunting task (Happell, 2007). Patient safety improvements influenced by exemplar nurse leadership, empowerment and collaboration may well be occurring in nursing practice without any publication for wider dissemination.

A further notable feature was that all studies in this review were from developed countries, which raises an important issue about the likelihood of even more limited or non-existent nursing and patient safety studies in developing and transitional countries. This situation exists amidst the knowledge that harm from medical care poses a substantial burden in terms of morbidity and mortality on people around the world (WHO 2008b). The need to address these gaps in knowledge presents a significant and challenging agenda for health care as well as nursing globally. To address this recognized gap in the literature, WHO Patient Safety has launched a small research grant programme to stimulate research on patient safety and to improve the dissemination of research findings (WHO 2008c). Encouraging nurses to apply for this type of support worldwide would be a positive attempt to increase knowledge on the nursing contribution to patient safety in both developed and developing countries. A further positive nursing development is illustrated through the
ICN Nursing Leadership for Change programme (ICN 2008a) that aims to prepare nurses for leadership roles in nursing in a constantly changing health environment. This programme is at a relatively early stage of development, yet to date projects addressing topics such as development of positive practice environments and development of initiatives to improve nursing communication, documentation and safety are underway, for example, in Bahrain (ICN 2008b).

Emerging from the review as the single well-designed study (Berenholtz et al. 2004) evaluating interventions to tackle central line infections, nursing empowerment is listed as one of the key interventions for patient safety. The study highlighted a checklist used by nurses and empowering nurses to stop a procedure (i.e. stop a physician) when a violation of guidelines occurred. The checklist may well have been a critical instrument required by nurses in order to achieve the authority required to empower this type of practice. Similarly, Boyle (2004) suggests that a high degree of nurse autonomy within a team and nurse/physician collaboration leads to less adverse patient events. Therefore, the use of checklists by nurses and the autonomy to act when deficiencies in medical practice occur may well be an important part in assisting nurses to form the strong secure net, to prevent problems and maintain safe care.

Although limitations exist with the quality of the papers reviewed, a number of key nursing issues have been identified more than once and, therefore, contribute towards a better knowledge of how nurses can enhance patient safety. For example, the role of the nurse within the team was perceived as important, particularly with specialist nurses synthesizing their advanced knowledge as a way of protecting patients (Alfredsdottir & Bjornsdottir 2007). Furthermore, the need to have a common understanding and expectations between nurses and doctors based on science and standards emerges as a possible route for improving teamwork and providing safer care. Nursing leadership appears to play an important role particularly when staff involvement, open communication and staff participation in decision making are key features (Spence Laschinger & Leiter 2006; Wong & Cummings 2007). The role of the nurse director is a key leadership role within a Board, and the Board’s familiarity of landmark reports on quality and patient safety would seem important when leading on nursing across an organization (Mastal et al. 2007).

**Limitations**

This literature review has some limitations. No hand search of key journals was undertaken, so some papers may have escaped the review. Only papers in the English language were searched, and therefore papers reflecting nursing developments in non-English-speaking countries may have been missed. Studies predating 1998 were not considered.

**Conclusion**

The evidence supporting the nursing contribution to patient safety through empowerment, leadership and teamwork is limited, and quantifying the contribution of each by analysing their direct impact on the safety of care is at an early stage of development. This review highlighted gaps in the body of nursing patient safety knowledge and suggests that these will need to be addressed before comprehensive approaches to identify effective solutions can be further developed. The deficiencies and gaps within the literature emerge paradoxically against a pervading viewpoint that suggests that nurses are ideally placed to prevent error and make improvements in safer care. Therefore, there is a pressing need for well-designed research studies to address these gaps. This review offers an insight into the huge potential for improvement through nursing empowerment and the development of tools to strengthen and support nurses’ influential role in the quality and safety movement.

Future investment into research that focuses on the nurses’ role within the multidisciplinary team and attempts to determine the exact nature and influence that nursing leadership, autonomy and empowerment have on the safety of patients is recommended as a high priority. There is a particular need to evaluate how patient safety tools and techniques, and their consequent impact on the relationship with medical staff can support nurses to provide safer care within a multidisciplinary team. Interwoven throughout all of the studies is the significance of effective nursing leadership. This is positioned as occupying a central role in patient safety. The ability to identify and understand how nurses develop the leadership and authority that will enable them to impact on the prevention of error warrants further research. Without such research, there is likely to be limited success in ensuring that the influence of nursing leadership and empowerment is fully realized within the patient safety agenda. Finally, future developments should also attempt to explore the best implementation strategies for turning patient safety research into nursing action and improvements.

**Author contributions**

The paper was conceived following initial dialogue concerning the contribution of nursing to the patient safety movement. The background of both authors (i.e. nurses) triggered initial discussions and a collective desire to undertake a preliminary review of the literature to substantiate or question some of the assumptions around the role of nursing in patient safety. A series of face-to-face, telephone meetings and emails between the authors helped to shape the theme of the paper. Both authors jointly or
individually held an additional series of telephone and face-to-face meetings with key national and international patient safety and nursing leaders to seek feedback on the concept of the paper. Following these, a series of search terms were arrived at, and a search was undertaken by an administrative assistant. Both authors reviewed all papers, and an initial data extraction exercise was performed by Annette Richardson. Upon completion of the first wave of data extraction, Julie Storr reviewed and cross-checked for omissions/accuracy, and a consensus was reached on content. An initial draft of the manuscript was prepared by Annette Richardson, and reviewed and expanded by Julie Storr, and a cyclical process of review, refinement and critical revision by both authors sequentially took place over a period of weeks. An advanced draft of the paper was reviewed by senior clinicians within both authors’ organizations and minor amendments were made to the paper as a result of this.

Both authors were equally responsible for the study conception and design, data collection/analysis, drafting of the manuscript, critical revisions for important intellectual content and supervision.

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