

Patient participation in patient safety and nursing input -a systematic review

Abstract

Aims and objectives. This systematic review aims to synthesise the existing research on how patients participate in patient safety initiatives.

Background. Ambiguities remain about how patients participate in routine measures designed to promote patient safety.

Design. Systematic review using integrative methods.

Methods. The relevant empirical research papers in journals included in electronic databases were searched using keywords describing patient involvement, nursing input and patient safety initiatives to retrieve empirical research published between 2007 and 2013. After reading the full-texts of the articles and checking for quality using predetermined criteria, findings were synthesized using the theoretical domains of Vincent's framework for analysing risk and safety in clinical practice: "patient", "healthcare provider", "task", "work environment", "organisation & management".

Results. We identified 17 empirical research papers: four qualitative, one mixed-method and twelve quantitative designs. All 17 papers indicated that patients can participate in safety initiatives.

Conclusions. Improving patient participation in patient safety necessitates considering the patient as a person, the nurse as healthcare provider, the task of participation, and the clinical environment. Patients' knowledge, health conditions, beliefs and experiences influence their decisions to engage in patient safety initiatives. An important component of the management of long-term conditions is to ensure that patients have sufficient knowledge to participate. Healthcare providers may need further professional development in patient education and patient care management to promote patient involvement in patient safety, and ensure that patients understand that they are 'allowed' to inform nurses of adverse events or errors. A patient-centred healthcare system characterised by patient-centeredness and mutual acknowledgment will support patient participation in safety practices.

Further research is required to improve international knowledge on patient participation in patient safety in different disciplines, contexts and cultures.

Relevance to clinical practice. Patients have a significant role to play in enhancing their own safety whilst receiving hospital care. This review offers a framework for clinicians to develop comprehensive practical guidelines to support patient involvement in patient safety.

Keywords: patient participation, patient safety, integrative review, safety management

Summary

What does this paper contribute to the wider global clinical community?

- Patients are able and willing to participate in patient safety initiatives.
- Efforts to involve patients in systems to ensure their own safety should accommodate patients' abilities and health beliefs, their personal illness coping strategies and their past experiences in the healthcare system.
- Nurses' positive attitudes, encouragement and support, and pre- and post-registration nurse education are central to patient participation in safety measures. Appropriate infrastructures and working environments also are required.

Introduction

Patient safety is the prevention of errors and adverse events associated with provision of health care (World Health Organization 2013). Patient safety and error reduction are the shared responsibility of all healthcare professionals, and improvement depends on recruitment, education, and performance of the whole multidisciplinary team (International Council of Nurses 2012, Leape 2009, Vaismoradi *et al.* 2012). A significant interest has been started internationally in involving patients in healthcare planning and service development (Andersson & Olheden 2012).

Patient participation in healthcare planning, service development and research is a key policy component in many countries (Broer *et al.* 2014, Johnstone & Kanitsaki 2009, Longtin *et al.* 2010). Patients are dependent on health care professionals, and their decision-making (Bovenkamp & Trappenburg 2009), however, their involvement in safety initiatives is crucial to the management of long-term conditions (Andersson & Olheden 2012) and improving safety (Armstrong *et al.* 2013, Davis *et al.* 2007, Entwistle 2007). Some authors suggest that healthcare providers rely on patients to check on the delivery of their care to ensure their own safety (Entwistle 2007), and in some adverse events, patients are the first link in the reporting chain (Lyons 2007). Benefits of patient participation include raising awareness of adverse events (Pinto *et al.* 2013) and patient empowerment (Bovenkamp & Trappenburg 2009). It is believed that possibility of prevention of incidents is a main factor affecting patients' intention to engage in patient safety initiatives (Schwappach 2010). Many patients are willing and able to help with preventing practice errors (Zhang *et al.* 2012), but ambiguity remains over how patients can participate in patient safety activities (Armstrong *et al.* 2013, Davis *et al.* 2012a). Therefore, systematically reviewing the literature to identify the most appropriate models, clarify and describe the distinctive roles of the patient will expedite development of effective patient involvement strategies.

Aims

The purpose of this systematic review focuses on nursing, to develop an understanding of how patients can participate in patient safety initiatives and the factors affecting their participation, using the “framework of contributory factors influencing clinical practice” (Vincent *et al.* 1998 p.1156, Vincent 2010 p.150): “patient”, “healthcare provider”, “task”, “work environment”, “organisation & management” to present a schematic model.

Methods

Design

A systematic review using an integrative method was conducted. Systematic reviews collect using clear and explicit processes (Higgins & Green 2011, Liberati *et al.* 2009) followed by systematic synthesis of the characteristics and findings of the included studies to answer the study question (Evans 2001, Mantzoukas & Watkinson 2007).

Integrative reviews reconcile diverse data sources, including both quantitative and qualitative studies, to enhance the holistic understanding of the topic of interest. This ecumenical approach, combining quantitative and qualitative studies, ensures comprehensive coverage, relevant to clinical practice (Whittemore & Knaf 2005).

Data gathering

Search strategy

We identified the review question and keywords in consultation with an expert librarian and collected the relevant empirical research papers published 2007-13 in journals included in from on-line databases: PubMed (including Medline), CINAHL, SCOPUS, Wiley Online Library and Science Direct. Based on pilot testing in the electronic databases and the authors' experiences of key terms commonly used in the international literature, to maximise coverage, we applied the following key search terms together: "patient safety" and "nurse" combined with "participation", or "involvement", or "engagement", or "role" in any part of the articles. The search strategy and results of different phases of the systematic review are presented in Table 1. Research articles in languages other than English were excluded due to translation issues and inaccessibility, but the search strategy did not impose any language limitations.

Inclusion criteria

The inclusion criteria for the electronic search were: (1) focused on patient participation/involvement/engagement/role in patient safety, (2) published in online scientific journals, (3) nursing involvement.

Exclusion criteria were: (1) patient participation/ involvement/ engagement in health care of no relevance to patient safety (2) related solely to professions other than nursing (3) no empirical data.

Progression of systematic review and quality of studies

Each phase of the systematic review was conducted by two authors independently (MV, MK). Discussions were held throughout the study and agreed on the search process. Firstly, a thorough literature search was performed using the key terms (Table 1) based on the lexicon of PubMed (including Medline), CINAHL, SCOPUS, Wiley Online Library and Science Direct (n = 4683). Secondly, retrieved articles were selected by titles using inclusion criteria 1 and 2, and duplicate titles were deleted (n= 123). In the next phase, the abstracts of the articles were checked using inclusion criteria 1-3 (n= 17). The full-texts were obtained from UK and Finnish libraries. The full-texts of the articles were read and checked for quality using criteria developed by Hawker *et al.* (2002): (i) clearly

defined aim of the study, (ii) sound and logical structure of research, (iii) explicit theoretical/conceptual framework of research, (iv) explicit conclusion, and (v) relevant references. All 17 papers met the quality criteria and were included into the final analysis (Figure 1).

Theoretical framework

Vincent's "framework of contributory factors influencing clinical practice" (Vincent *et al.* 1998 p.1156, Vincent 2010 p.150), developed from Reason's "organisational accident model" (Reason 2001), was used to describe the data retrieved from the studies in relation to patient participation in patient safety. We deployed a theoretical framework to accommodate the considerable heterogeneity in studies in terms of methods, participants and interventions (Popay *et al.* 2006), and develop the primary explanation of how and why a particular strategy can be followed in practice.

Results

Characteristics of selected studies

The studies' findings did not lend themselves to meta-analysis due to variations in methodologies.

Table 2 summarises the characteristics of the studies included in this systematic review. All studies were published between 2010 and 2013. Nine studies were conducted in the UK (Davis *et al.* 2011a, Davis *et al.* 2012a, Davis *et al.* 2012b, Davis *et al.* 2012c, Davis *et al.* 2012d, Davis *et al.* 2013a, Davis *et al.* 2013b, Lawton *et al.* 2011, Rainey *et al.* 2013). Five were conducted in Switzerland (Schwappach *et al.* 2010, Schwappach & Wernli 2010a, Schwappach & Wernli 2010b, Schwappach *et al.* 2013a, Schwappach *et al.* 2013b). One was conducted in the U.S. (Rathert *et al.* 2011), one in Sweden (Flink *et al.* 2012) and one in China (Zhang *et al.* 2012).

Four studies used qualitative methods (Flink *et al.* 2012, Rainey *et al.* 2013, Schwappach & Wernli 2010a, Schwappach *et al.* 2010), two mixed-method designs (Davis *et al.* 2013a, Davis *et al.* 2013b), and the remaining eleven were quantitative studies. Of the quantitative studies, nine articles used cross-sectional survey designs and two used interventional designs.

Patient participation in patient safety

The question of how patients can participate in patient safety was answered through classification of the findings around an established theoretical framework (Vincent 2010) in a schematic model (Figure 2).

Patient

In general, patients approve of their role in detecting and preventing errors (Schwappach *et al.* 2010), view patient involvement favourably and agree that they should take an active role (Davis *et al.* 2012b). Through asking questions and reporting their observations of deviations from routines,

patients show their willingness to engage with and be proactive in safety practices (Schwappach & Wernli 2010a).

However, some patients reject active participation, because they feel that this is not their role (Schwappach & Wernli 2010a) or are disinclined to be proactive towards patient safety and prefer to cede control to healthcare professionals (Rathert *et al.* 2011) or feel themselves confined to a passive role and are content with merely receiving information about care and treatment (Flink *et al.* 2012). For examples, some participants in the Flink *et al.*'s (2012) study believed that healthcare providers had all the necessary information in the medical records, either from previous admissions or from shared medical records, stating: 'what they need to know is already in my medical record, everything is in there.' (p. i179)

Patients knowledgeable about patient safety and familiar with their own care are more likely to engage in patient safety initiatives (Schwappach & Wernli 2010b, Zhang *et al.* 2012) and able to monitor and detect any practice errors related to their own care (Davis *et al.* 2013b, Rainey *et al.* 2013). However, not all patients feel adequately informed: 'I did not receive adequate information from health care providers to know what to expect in terms of my treatment. Staff assumed I knew what was happening and did not provide me with any useful information' (Davis *et al.* 2013b p. 4). Failure to inform patients as to the likely outcomes of treatment, could increase the risks that treatment complications would not be detected in time to avoid readmission to hospital.

The benefits of patient participation in safety initiatives depend on patients being aware of the need for their involvement (Flink *et al.* 2012). Patients willingly participate, if they perceive this as a normal and acceptable behaviour, within their control. Therefore, to design interventions to encourage patient participation in safety projects understanding of patients' health beliefs and attitudes is needed. Patients actively given permission to participate have a sense of control. Perceptions of control, perceived severity of errors and empowerment are key ingredients of any patient involvement in safety interventions (Davis *et al.* 2012a). If patients find that healthcare providers avoid partnership or leave their concerns unresolved, they lose confidence in professionals and avoid future contact and cooperation (Flink *et al.* 2012, Rainey *et al.* 2013).

Patients' health status is a key requirement for their participation in patient safety. The ability of patients to participate in safety projects is reduced by illness, but patients' relatives may be able to fulfil this role (Rainey *et al.* 2013). However, this strategy has to be used cautiously, as the involvement of relatives can sometimes impede patient involvement (Flink *et al.* 2012, Rainey *et al.* 2013, Schwappach *et al.* 2010, Schwappach *et al.* 2013b).

Healthcare provider

Professionals need to be reassured that patients' prompts are neither challenge to their competence nor attempts to undermine care. Professionals have a pivotal role in facilitating patient participation in

patient safety. Encouragement and approval by healthcare staff are crucial in preparing patients for engagement in promoting the safety of their own care (Schwappach & Wernli 2010a, Schwappach & Wernli 2010b). Nurses' positive attitudes, encouragement, support, and education were identified as central to patient participation in safety practices (Davis *et al.* 2011a, Davis *et al.* 2012c).

Responding to the information provided by patients, indicating understanding of their conditions, and meeting their needs are examples of positive attitudes and behaviours (Flink *et al.* 2012). Professionals accepting patient involvement and questioning reduce social barriers, and improve patients' feeling of trust in their own ability to engage in safety practices (Schwappach & Wernli 2010b).

Patient involvement in patient safety should be perceived as helping to develop trusting relationships between patients and healthcare providers, and many nurses support this (Davis *et al.* 2012d). Stimulating patients to engage in safety initiatives is a challenge (Davis *et al.* 2012d, Schwappach *et al.* 2010). For example, some patients are afraid of causing offence to healthcare professionals by raising concerns or complaining about errors, because it "...looks like you are dictating to them (staff) how to do their job (Davis *et al.* 2013a, p. 7)

Nurses' encouragement influences patients' willingness to ask questions about safety issues (Davis *et al.* 2011a, Davis *et al.* 2012c). Single episodes of patients' negative reactions or challenging behaviours may be overrated by healthcare professionals and have the potential to erode bilateral relationships and any positive attitudes towards patient involvement (Schwappach *et al.* 2013a). Oncology nurses switch between participative and authoritative models, using different communication styles to engage patients by mandating them to read medicines' labels and report any concerns (Schwappach *et al.* 2010). For example, a nurse declared: 'I ask them for their help . . . that they support me in my work. It would help me a lot if you could also watch out that everything is correct. I mandate them to read the labels with me. I mandate them to report anything they feel is not okay. I use this term "mandate," and I feel that is something they can understand and accept.' (p. E87) Healthcare professionals may have limited expertise in recruiting patients to participate in safety initiatives (Schwappach *et al.* 2010). Professional education should include the importance of avoiding negative reactions to perceived 'challenges' and discouraging responses (Schwappach *et al.* 2013a), and effective communication on error prevention and questioning safety practices (Davis *et al.* 2012b). Professionals should perceive patient education in safety as a core, but challenging, element of their role that advances their expertise (Schwappach *et al.* 2010). Professionals engaging patients in their safety need to be aware that not all patients want or are able to participate, and that this will change over time and with context. With these caveats, patient involvement in safety is a promising strategy and an opportunity to strengthen trust and team building (Schwappach & Wernli 2010a).

Although not all retrieved studies discussed the role of healthcare teams in patient participation in safety, Schwappach *et al.* (2010) report that participant nurses perceived patients' involvement challenging and support from other team members and professional development was helpful. For example, nurses identified a high level of fluctuation in team organisation and staff assignments as the main barrier to patient safety.

Task

The nature of tasks given to patients for participation in patient safety is important. Patients need to understand that adverse events are unintended but may cause actual or potential harm (Schwappach & Wernli 2010a) and that patients' reports of practice errors are not considered to be complaints. Patients will engage in safety activities, if enough information about the nature of the task is provided. However, if patients experience preventable errors or fail to report them during hospitalisation, the potential for frustration is high (Schwappach *et al.* 2010).

Most patients need orientation and education due to lack of knowledge about healthcare routines and procedures and how to detect and report changes in their clinical conditions (Rainey *et al.* 2013). While essential to care, fast and unexpected changes in procedures and medicine administration techniques are perplexing to patients and may decrease patients' participation (Rainey *et al.* 2013, Schwappach *et al.* 2010).

Participation in safety proceeds gradually, from novice to 'expert patient' (Schwappach & Wernli 2010a). Knowledge, abilities and resources vary among patients. Therefore, various tasks and roles at the different stages of the treatment process should be defined to ensure attract patient participation (Schwappach *et al.* 2010, Schwappach *et al.* 2013a).

Work environment

The social milieu of the workplace should be considered with regard to its conductivity to patient safety communication. Patients' contributions provide important feedbacks to consolidate safety practice in the healthcare team (Schwappach *et al.* 2010). This should be a normal component of healthcare, a valuable resource for the exchange of information within healthcare teams (Flink *et al.* 2012), and a link between patients and healthcare providers (Schwappach & Wernli 2010a). Patients understand the implication of error monitoring and reporting and expect positive outcomes from their safety involvement (Schwappach & Wernli 2010b).

Asking questions, communicating with staff, reporting observations of deviations from standard and familiar procedures and work routines are some of the ways that patients reduce healthcare harms (Davis *et al.* 2013a, Schwappach & Wernli 2010a). Patients can challenge deviations from routines. Empowering patients to learn about their own health condition can be coupled with motivating them to ask questions (Rathert *et al.* 2011). However, providing patients with safety-related information

may generate negative emotions and beliefs that undermine trust in healthcare professionals (Davis *et al.* 2013a, Schwappach *et al.* 2010).

Holding open discussions with healthcare professionals normalizes patients' involvement in safety-related behaviours and thus improves their acceptability (Davis *et al.* 2013a). Partnership and bilateral relationships between patients and healthcare professionals are required to create an environment that values patient participation. Patients' efforts to participate and prevent errors should be welcomed with a focus on avoiding negative reactions by healthcare professionals (Davis *et al.* 2013a). Poor relationships with professionals influence the likelihood of patients complaining and apportioning blame and responsibility (Lawton *et al.* 2011, Rainey *et al.* 2013). Positive encounters, patient empowerment, and patients' trust in their providers are important factors affecting patients' willingness to participate (Flink *et al.* 2012).

Educating and encouraging patients to directly report incidents should be planned to enhance patient participation in their healthcare management (Davis *et al.* 2013b). Teaching through video has been shown to increase patients' perceived comfort in engaging in safety-related behaviours (Davis *et al.* 2012c, Davis *et al.* 2013a). Providing advice and positive reactions to patients' complaints including talking to the patient in a relaxed manner and at his/her bedside are useful strategies to communicate about safety (Flink *et al.* 2012, Schwappach *et al.* 2013b). These approaches engender more realistic risk perceptions (Schwappach *et al.* 2013b).

Providing role models of similar patients who already have participated in harm prevention activities are helpful (Schwappach & Wernli 2010b), and serves to facilitate communication about professionals' errors (Schwappach *et al.* 2013b).

Organisation & management

While safety is the nurses' responsibility and patients' participation is complementary to nurses' efforts (Schwappach *et al.* 2010), providing an appropriate and positive environment to involve patients in patient safety is the responsibility of healthcare managers (Rathert *et al.* 2011). The healthcare environment offers infrastructures and resources to facilitate the collaboration between the healthcare professionals and patients to encourage patient participation in safety practices (Schwappach & Wernli 2010b). To encourage patient participation, the healthcare system needs to promote patient centeredness, mutual acknowledgement, relatedness, and continuity (Rathert *et al.* 2011). Workload, general time constraints and organizational processes that prevent nurses from educating patients hinder appropriate patients' participation in patient safety. While safety is the nurses' responsibility and patients' participation is complementary to nurses' efforts (Schwappach *et al.* 2010), providing an appropriate and positive environment to involve patients in patient safety is the responsibility of healthcare managers (Rathert *et al.* 2011).

It is important to collect data to investigate patient-related, health-care professional-related factors and organizational culture affecting interventions aimed at improving patients' participation in safety (Davis *et al.* 2013a, Rainey *et al.* 2013).

Discussion

Although there is an international movement to increase patients' involvement in patient safety, there is insufficient evidence of benefit (Hall *et al.* 2010). This systematic review has described patients' participation in patient safety practices using Vincent's framework of influences on clinical practice. This framework depicts the comprehensive and synergistic role of different aspects in safety management and provides a guideline for clinical nurses and nurse managers to involve patients in safety practices. The factors involved might be summarised as: 'education', 'the workplace' and 'the organisation systems' (Griffiths *et al.* 2003).

Education for professionals and patients

Education is a key component of patient participation (Schwappach & Wernli 2010a, Schwappach *et al.* 2010). Nurses' positive attitudes, encouragement, support, knowledge and education are central to patient participation in safety practices. This parallels the general recommendation to healthcare professionals that there is a need to proactively approve and support patient involvement in healthcare (Entwistle & Watt 2006). Professional education initiatives (Wakefield *et al.* 2010) are needed to maximise the value of these initiatives (Longtin *et al.* 2010). Informing patients about the reasons for nursing and medical interventions, and increasing patients' trust in their own abilities to identify errors can reduce errors (Schwappach & Wernli 2010b). Both patients and professionals require education and guidelines, checklists or *pro-formas* on how to communicate errors to each other appropriately and respectfully, without causing offence (Rainey *et al.* 2013, Schwappach *et al.* 2013a), and examples related to medicines' management have been described (Gabe *et al.* 2014, Jordan *et al.* 2014).

The basis of patient safety is the assumption that patients are able and are willing to participate (Schwappach 2010). However, practice guidelines should accommodate individual patient preferences, permitting disengagement from active participation (Bovenkamp & Trappenburg 2009). Patient education to improve patient participation requires: provision of information on available participation modalities (Bovenkamp & Trappenburg 2009, Entwistle 2007, Pittet *et al.* 2011), improvement of patients' capacities for taking responsibility (Davis *et al.* 2007, Davis *et al.* 2008), and behaviour changes (Schwappach 2010). Patients' attitudes and beliefs, personal strategies to deal with healthcare concerns, and previous emotional experiences within the healthcare system are central to patient participation (Davis *et al.* 2007, Longtin *et al.* 2010). These are important in the management of long-term conditions, where patients have time to assimilate knowledge of their

conditions, and opportunity to become 'expert patients'. Expert patients have the information resources to meet the needs of their chronic illnesses, and are often able to self-care and manage their own conditions (Wilson 2001). For example, interventions aiming to encourage patient involvement in medicines' monitoring and self-management of medication in hospital have been successful (Hall *et al.* 2010).

Moreover, nurses' positive attitudes, encouragement and support, and education were identified as factors influencing patient participation in safety practices. This parallels the general recommendation to healthcare professionals that there is a need to proactively approve and support patients' knowledge and involvement (Entwistle & Watt 2006). Provision of information on the available participation modalities (Bovenkamp & Trappenburg 2009), improvement of patients' capacities for taking responsibility in safety practices (Davis *et al.* 2007, Davis *et al.* 2008), facilitating or reinforcing patients' understanding of how they can participate (Entwistle 2007, Pittet *et al.* 2011), and behavioural changes (Schwappach 2010) improve patient participation, and should be incorporated into professional education (Longtin *et al.* 2010). Professional educational interventions, such as peer-modelling behaviour (Wakefield *et al.* 2010), are needed to maximise the value of patient safety initiatives (Longtin *et al.* 2010).

Workplace environment

The healthcare workplace environment is important in patient participation. A system that supports patient safety is characterised by advertising patient-centeredness and mutual acknowledgment. Patients' actions are complementary to professionals' efforts to preserve patient safety, and it should not mean that the responsibility of the safety of care should not devolve to patients (Davis *et al.* 2007). Patients' interests and abilities to improve their own knowledge of the care process and also to inform healthcare professionals of probable errors are assets to the healthcare system (Lyons 2007).

The main strategy for patient participation in safety practices was to encourage patients to ask questions without the fear of causing offence to healthcare providers. Agreement on the style of asking questions by patients should be made in order to provide an atmosphere of trust between patients and healthcare professionals in which challenging the activities of staff does not offend them (Davis *et al.* 2008, Davis *et al.* 2011b). Before measures for patient involvement are introduced, consideration should be given to the potential physical and psychological burdens placed on patients (Ward & Armitage, 2012).

Organisation

Patient empowerment depends on feeling valued, safe and motivated to participate (Wählin *et al.* 2006). Today's health care systems consider themselves patient-centred rather than provider-centred (Berwick 2009, Jangland *et al.* 2012), emphasize collaboration between patients, families, and

healthcare providers, and aim for an organizational culture that supports patient safety (Johnson *et al.* 2010). While not all retrieved studies have discussed the role of the healthcare team in patient participation, Schwappach *et al.* (2010) reported that nurses perceived patients' involvement challenging. Although support from other team members and professional development were helpful, the main barriers were fluctuations in team organisation and roles. Similarly, a busy healthcare setting and lack of continuity of care were reported by Doherty and Stavropoulou (2012) as barriers to preventing patients' active involvement in safety: work pressure and staff shortages made patients to wary of engaging in error prevention behaviours.

Patient participation needs a supportive management system that continuously identifies and addresses any and all system weaknesses and failures that arise (Lyons 2007), and is committed to support involvement challenge power inequities and empower patients (Ocloo & Fulop, 2011). Patient empowerment depends on feeling valued, safe and motivated to participate (Wählin *et al.* 2006).

Conclusion

Obtaining durable benefits from patients' active participation in patient safety depends on recognising factors affecting patients' willingness to act as a member of the patient safety team (Davis *et al.* 2007). We found few data on patient participation in patient safety in developing countries. Future work should assess interventions aimed at improving patients' participation in safety, and the conditions necessary for patient, family, professional and organisational involvement in different healthcare settings, such as acute and long term care, in developed and developing countries (Davis *et al.* 2013a, Peat *et al.* 2010, Rainey *et al.* 2013).

We found no studies on the economic costs and benefits of these initiatives.

Limitations of this review

Patient participation is a relatively new topic in the international patient safety literature. Therefore, many aspects of this important concept remain unknown. No manual search was conducted on the grey literature, but the electronic search in the international high-quality databases convinced the researchers that a broad search area has been covered in order to provide a comprehensive answer to the study question.

Relevance to clinical practice

This review suggests the need for comprehensive practice guidelines to support improving patient participation in patient safety. Improvement of patient participation in patient safety depends on the consideration of the patient as a person, the nurse as healthcare provider, the task of participation, and the nursing ward as healthcare environment. Patients' roles should be defined, with due consideration for any limitations in physical abilities and knowledge, belief and attitudes. Nurses should use patient

participation as a learning process, assist patients to participate in their own care, and avoid taking an authoritarian approach that may discourage participation (Davis *et al.* 2013b, Schwappach *et al.* 2010). The nature of the task given to the patient should be congruent with patients' knowledge of nursing routines, and their capacity to implement their tasks. The healthcare setting should value patient participation and provide appropriate strategies to facilitate their full engagement in safety practices. A schematic model of how the patient can participate in all patient safety initiatives has been presented in Figure 3. To guide the development of practical strategies for establishment and improvement of patient participation in patient safety in clinical practice we suggest:

- Patients' knowledge, attitudes and beliefs should be assessed;
- Interventions to enhance willingness to participate in safety initiatives should be evaluated;
- Enough support in terms of motivation, encouragement and help should be provided to patients and their collaboration should be valued and respected;
- Both patient and health care provider should be educated on the importance of patient participation in patient safety;
- Patient participation should be incorporated into healthcare providers' description of duties and the process and expectations of such a collaboration should be outlined;
- The level of collaboration by the patient should be congruent with his/her health condition and physical and psychological abilities, and the nature of task;
- Health care organisations should provide the necessary resources and infrastructures for patient participation and encourage healthcare team members' collaboration in line with the mission of safer health care systems.

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Table 1. The search strategy and results of different phases of the systematic review process

Years	Database and search terms	Total	Selections based on title	Selections based on abstract	Selections based on full text and inclusion criteria
2007-2013	Cinahl	2052	24	6	6
	PS+ participation+ nurse				
	PS + involvement+ nurse				
	PS+ engagement+ nurse				
	PS+ role+ nurse				
	Scopus	655	7	1	1
	PS+ participation+ nurse				
	PS + involvement+ nurse				
	PS+ engagement+ nurse				
	PS+ role+ nurse				
	PubMed	1086	19	1	1
	PS+ participation+ nurse				
	PS + involvement+ nurse				
	PS+ engagement+ nurse				
	PS+ role+ nurse				
	Wiley Online Library	491	52	9	9
PS+ participation+ nurse					
PS + involvement+ nurse					
PS+ engagement+ nurse					
PS+ role+ nurse					
Science Direct	399	21	0	0	
PS+ participation+ nurse					
PS + involvement+ nurse					
PS+ engagement+ nurse					
PS+ role+ nurse					
Total		4683	123	17	17

PS = patient safety

Table 2. Characteristics of the studies

Author(s), year, country	Aim	Methods	Results
Schwappach & Wernli 2010a, Switzerland	To assess chemotherapy patients' perceptions of safety and their attitudes towards participating in error-prevention strategies.	Qualitative design using content analysis	Participants unequivocally agreed that patients can make contributions to their safety, and many patients were prepared to get involved. Patients described engaging in their safety as a learning process and highlighted the importance of being proactive.
Schwappach et al. 2010 Switzerland	To explore oncology nurses' perceptions and experiences with patient involvement in chemotherapy error prevention.	Qualitative descriptive study using inductive theme-identification content-analysis	Participants shared affirmative attitudes and overwhelmingly reported positive experiences with engaging patients in safety behaviors, although engaging patients was described as a challenge.
Schwappach & Wernli 2010b, Switzerland	To analyse attitudes, norms, behavioural control, and chemotherapy patients' intentions to participate in medical error prevention.	Cross-sectional survey	Patients acknowledged the benefit of error monitoring and reporting and anticipate positive outcomes of involvement, but their valuations of the process of engaging in error prevention are less positive.
Rathert et al. 2011, U.S.	To explore the results of a qualitative study in which patients reported their ideas about what they believe their roles should be.	Survey using a mailing method	Patients believed they should be able to trust that they are being provided competent care, as opposed to assuming a leadership role in their safety.
Davis et al. 2011a, UK	To investigate medical and surgical patients' perceived willingness to participate in different safety-related behaviours and the potential impact of doctors'/nurses' encouragement on patients' willingness levels.	Cross-sectional exploratory study using a survey	Patients do not view involvement in a range of safety-related behaviours uniformly.
Lawton et al. 2011, UK	To investigate the extent to which outcome of care (harm or not) and relationship (good or bad) with the care provider impact on the judgements of responsibility and blame as well as decisions about likelihood of making a complaint.	Questionnaire vignettes	Participants made significantly more negative ratings in response to vignettes describing a bad outcome and a poor relationship with the health professional.
Davis et al. 2012a, UK	To examine predictors of patients' intentions to engage in two safety behaviours: (1) reminding healthcare staff to wash their hands and; (2) notifying healthcare staff if they are not wearing a hospital identification bracelet.	Cross-sectional survey	Control beliefs, normative beliefs and perceived severity were the strongest predictors of patients' intentions to participate in both behaviours.

Davis et al. 2012b, UK	To investigate patients' willingness to be involved and healthcare professionals' willingness to support patient involvement in pre-transfusion checking behaviours.	Cross-sectional design using survey	Patients and healthcare professionals view patient involvement in transfusion-related behaviours quite favourably and appear in agreement regarding patients' active roles.
Davis et al. 2012c, UK	To examine patients' and health care professionals' attitudes towards a video aimed at promoting patient involvement in safety-related behaviours.	Experiment, using a within-subjects design	Video may be effective at changing patients' and health care professionals' attitudes towards patient involvement in some, but not all, safety-related behaviours.
Davis et al. 2012d, UK	To investigate physicians' and nurses' attitudes toward patient involvement in safety-related behaviours,	Cross-sectional exploratory study using two surveys.	Both professions held positive attitudes toward patient involvement, although in general, nurses versus physicians were more willing to both support patient involvement and participate themselves as a patient.
Flink et al. 2012, Sweden	To improve the knowledge and understanding of patients' perspectives about their participation in handover.	Qualitative design with content analysis	Patients participated by exchanging information, and making contact with and conveying information to their next healthcare provider.
Zhang et al. 2012, China	To investigate the baseline status of patients' awareness, knowledge, and attitudes to patient safety in China, and to determine the factors that influence patients' involvement in patient safety.	Cross sectional survey	Patients expressed willingness to contribute to patient safety, but their knowledge about patient safety practices was generally very limited.
Davis et al. 2013a, UK	To evaluate patients' attitudes towards a video and leaflet aimed at encouraging patient involvement in safety-related behaviours.	Two exploratory studies employing a within-subjects mixed-methods design	Video and leaflet could be effective at encouraging patient involvement in some safety-related behaviours.
Davis et al. 2013b, UK	To investigate hospital patients' reports of undesirable events in their health care.	Cross-sectional mixed methods design	Patients were more willing to report undesirable events to a researcher than to a local or national reporting system.
Rainey et al. 2013, UK	To examine the experiences and views of patients and their relatives to determine the potential for involvement in promoting their own safety.	Qualitative design using thematic analysis	Safety strategies based on patient involvement must take account of the complexities of acute illness.
Schwappach et al. 2013a, Switzerland	To investigate how health care professionals (HCPs) evaluate patients' behaviours	Cross-sectional survey	Approval of patients' safety-related interventions was generally high and affected by patients' behaviour and identification of error.

Schwappach et al. 2013b, Switzerland	To investigate the effects of patient safety advice on patients' risk perceptions, perceived behavioural control, performance of safety behaviours and experience of adverse incidents.	Quasi-experimental intervention study	Patients in the intervention group were less likely to feel poorly informed about medical errors.
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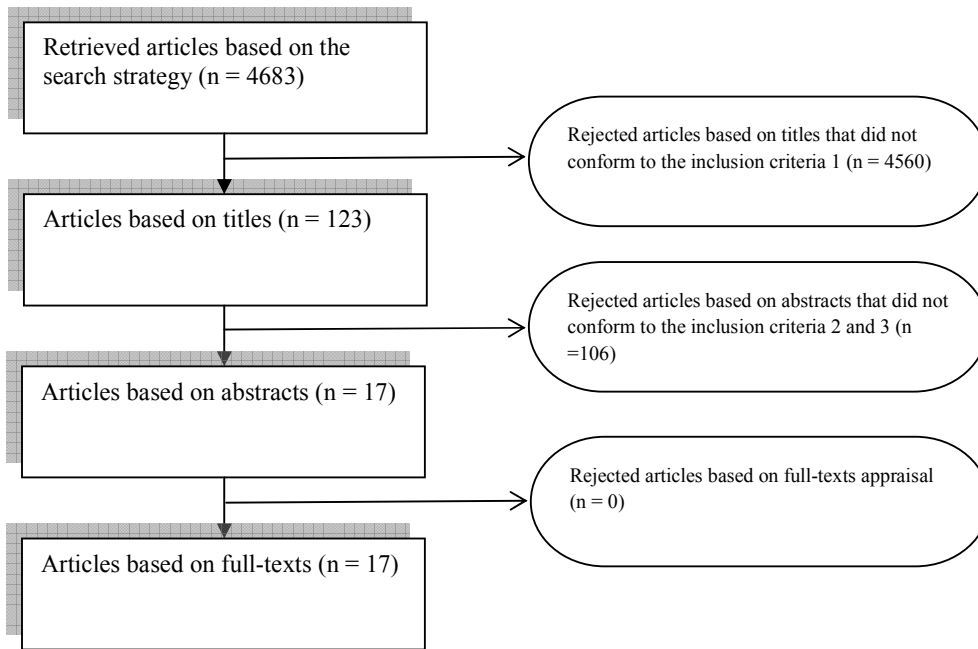
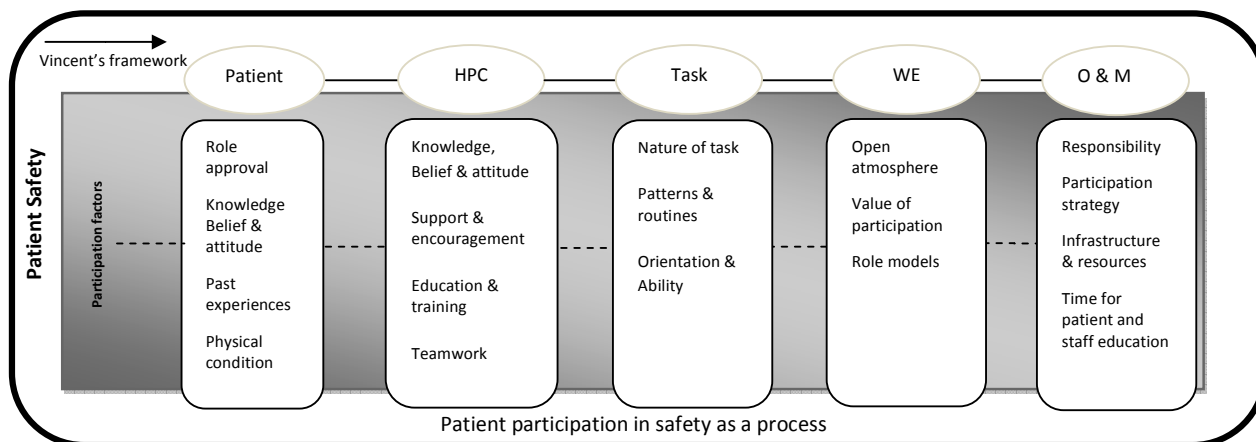


Figure 1- Systematic review progression



HPC = Health care provider
 WE = Work environment
 O & M = Organisation & management

Figure 2. Schematic model of patient participation in patient safety based on the Vincent's framework