



Review Article

The Role of Nursing Competencies in Ensuring Patient Safety: A Narrative Literature Review

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ABSTRACT

Safety and effective patient care revolve around nursing competence. Clinical competencies, critical thinking, communication, and ethical practice competencies are highly interconnected with the reduction of adverse events and increase in patient safety outcomes. To summarize the existing evidence on the core nursing competencies and their effect on patient safety and assess organizational, educational, and professional factors that determine core competence and safety behaviors. A narrative literature review was carried out with the help of electronic databases, such as PubMed, Wiley Online Library, and Google Scholar. Articles published since 2010 and up until 2024 were selected due to their relevance to nursing competencies and patient safety. Inclusion criteria included peer-reviewed articles that covered the topics of clinical competence, safety outcomes, and workplace environment. Narrative synthesis methodology implied that the included studies were read manually, the key ideas were systematized and synthesized and recurring patterns were identified, and sorted into the corresponding headings. Five major concepts emerged: (1) Core competencies reduce safety incidents, (2) Positive work environments enhance competence application, (3) Higher education and CPD improve safety practices, (4) Digital tools support safe care, and (5) Open attitudes foster safety reporting. Competence was also always associated with a decrease in adverse events, quality of care, and staff confidence. Patient safety lies in competence in nursing practice. An educator should develop their competency through educational reforms, conducive clinical settings, and continuous professional growth.

INTRODUCTION

Nursing competencies (NCs) are important to improve patients' safety (PS) and the provision of quality care. Nursing competencies are not limited to their clinical abilities and technical skills, but beyond these to ethical sensitivity, communication, critical thinking, application, and consistency with organizational policies [1, 2]. The incorporation of evidence-based practices with professional behavior and soft skills is crucial for nurses to enhance patients' quality outcomes and to reduce life threatening error in their routine clinical practices [3]. The

World Health Organization (WHO) orchestrated the concept of patient safety (PS) to eliminate the errors and unfavorable outcomes that are likely to happen with patients during hospital stay. Despite all the advancements in knowledge and technology development, the PS-related issues, such as hospital-acquired infections, medication errors, and procedural complications, couldn't be eliminated within the health sector of lower- and middle-income countries [4]. Among the all-health care teams, nurses are in a central position when PS is concerned.



Nurses play a significant role in reporting, organizing, and managing the patients' care plans [5].

It has been established that the competence level of a nurse is directly associated with the degree of PS, but there is still a substantial gap in conceptualizing the way in which the integration of multiple factors for instance the level of education, workplace environment, professional tenure, continuing professional development (CPD) attendance, and implementation of healthcare technology, influence the safety performance. (CPD) and healthcare technology as the means of improving nursing competence and safety culture. Since multiple studies demonstrated the concept of PS culture or nurses' competence, the perception of variables related to nurse and their effect on PS outcome in clinical practices is ambiguous. Further, the contextual factors such as work burden, job pressure, shift rotations, and limited organizational support impact the acquisition and application of competencies. These dynamics would be examined by a synthesized literature review that would play a role in developing policy, conducting training programs, and planning the workforce. This literature review aimed to emphasize the core nursing competencies and their contribution to PS. Also, evaluating the impact of demographics, professional, and organizational factors on the development of nurses' competencies.

A global review of literature related to nurses' competencies and their relationship with patient safety was conducted. The literature was searched within PubMed, Wiley Online Library, and Google Scholar databases using the following keywords: "Competency level of nurses"; "Clinical competencies", and "Patient safety" with the use of Boolean operators such as "AND" and "OR". Further, the literature search was refined by establishing following inclusion criteria: publications duration 10 years from January 2010- December 2024 Full text articles, and written in English language because the process of translating articles in other language to English version could be process, which could lead to misinterpretation of meanings. Furthermore, the WHO official report on patient safety, definitions of concepts from the dictionary, and data from reference books were also added where needed. The exclusion criteria for review are determined by eliminating those papers having studies on: nursing interns, student nurses, nursing management, and studies from allied health sciences, medical, and other disciplines. Initial search retrieved 753 records from PubMed, 580 from Wiley Online Library, and 723 from Google Scholar. At this stage, articles focused on irrelevant target populations such as nursing students, nurse practitioners, allied health care professionals, and physicians were excluded. After further screening of the titles and abstracts, articles about scale development and

validation were removed, and 80 articles were entered into second-level screening. At this level, 10 articles were further removed because they were existing reviews. Finally, 51 articles were selected for full-text screening. In the included studies, the majority were cross-sectional, with some interventional, qualitative, and one longitudinal study were used for final review. Different studies were filtered out to maintain focus, relevance, and methodological consistency. Research paper consisted of studies on nursing interns, student nurses, and nursing management were removed because the focus of the present review was registered nurses in practice and involved in direct patient care. Moreover, studies from disciplines other than nursing, such as medicine and allied health sciences, were excluded. Studies lacking empirical data, focusing on scale development or validation processes, were also eliminated because of irrelevancy from current objective of the narrative review. Articles that are not published in the English language were also excluded to reduce any misinterpretations. Additionally, those articles that are not available in full text were excluded. The relevant and key information from the finally selected articles was extracted, and a literature synthesis was done.

Competencies of nurses are a group of skills that are mandatory to perform nursing roles in the workplace [1]. Competent nurses have greater awareness of their limitations, are confident in performing job-related tasks according to their education, and adhere to defined policies and protocols of the organization. Nursing competencies consist of knowledge, skills, work tenure, communication, personal motivations, caring, and professional attitudes in the healthcare setting, which enhance nurses' confidence, improve clinical practices, and strengthen quality outcomes. A Finnish study showed that nurses require a range of skills, such as effective communication, inter- and intra-professional collaboration, critical thinking, patient and work-related task management, and ethical knowledge, to improve the quality of care. Another study about professional competencies of palliative care nurses highlighted that nurses must be knowledgeable, skillful, and confident in practicing job-related skills in accordance with patient needs and choices. Nurses must also maintain respect, ensure effective communication, and consider the ethics of nursing care while providing patient care. Therefore, competencies of nurses are important to improve the quality and safety of patient care [6, 7]. PS is a collective term for the joint efforts of all healthcare providers to prevent potential errors and protect patients from unnecessary harm [8]. PS also refers to protecting patients from unintended harm during hospitalization. According to

the WHO, every fourth patient has safety problems, and 40 million patients in the lower-middle-income countries suffer adverse events each year, which lead to 2.6 million deaths [4]. In particular, the strong safety culture involves adhering to the organizational standards and policies as well as ongoing professional development, collaboration and teamwork, communication, reporting of the incidents, and the proper management of the safety-related problems [9]. Several safety-related accidents happen in healthcare organizations, such as medication prescribing, dispensing and administration, risk of falls, wound infections, central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), pressure ulcers, incorrect blood transfusion, wrong-site surgeries, and other iatrogenic events, such as pneumothorax, pulmonary embolism (PE), deep vein thrombosis (DVT), and phlebitis [10, 11]. These avoidable problems enhance hospitalization, expenses, stress, morbidity, and mortality. Therefore, PS is one of the significant issues of health care systems. Nurses feel that they can talk about how to improve safety and quality in numerous ways, but the process itself is challenging [8]. However, PS may be improved by the means of providing effective and safe healthcare. Nurses, among all healthcare professionals, play a central role in the impact they have on PS initiatives, the development of safety culture, enhancement of error reporting, and the management of safety-related incidents [12]. Attitude refers to the manner of acting or the feelings of some people toward things and other people surrounding them [13]. Various studies have recorded positive and negative attitudes of nurses towards their colleagues and patients at the workplace, and drivers of these attitudes. A West-Asian cross-sectional study found that 52.9% of nurses had positive perceptions of PS [14]. Two Turkish studies investigated self-reported PS and the effects of the safety training. The initial article found poor attitudes ($t = -0.99$, $p=0.32$) of cardiology and cardiac surgery unit nurses [12]. The second study discovered that surgical unit nurses who underwent PS training had better attitudes than those who did not undergo the training [15]. Nevertheless, the consequences of frequent reporting of incidents were at times negative, such as blame or punishment, hence nurses were not encouraged to report their errors [16]. Supervisor, physician, and patient or family-related abuse in the workplace also lowered the desire of the nurses to report abuse [17]. In a descriptive study in Iran, it was demonstrated that PS was positively correlated with the motivation of nurses towards their work [18]. On the other hand, a different study concluded that there was no significant correlation between the professional competencies of nurses and their organizational

commitment [19]. A study carried out in the United States concluded that a significant proportion of nurses were not confident in their ability to provide spiritual care, but a study in the Netherlands concluded that nurses rated themselves highly in the spiritual care competencies [20]. Multiple demographic and job-related factors, such as professional education, age, marital status, years of experience, duty shifts, and salary, are associated with patient safety (PS) and nurses' competencies (NCs). A systematic review identified that NCs evolve with years of experience and organizational support [21]. Several studies support that NCs improve with experience [22-27]. Interestingly, one Iranian study reported that less experienced nurses scored higher in interpersonal aspects of clinical competencies [20]. Another study confirmed a positive correlation between tenure and confidence in safe practice [17]. In contrast, one study found no significant link between PS and tenure but did observe that job interest and gender had a positive impact on PS [11]. A European Professional Education and CPD: study revealed that a greater percentage of nurse baccalaureates correlated with a decrease in hospital deaths; therefore, the risk of dying in the hospital was approximately 30% lower, based on adjusted multivariable regression estimates (adjusted RR < 1.0) [27, 28]. Further research showed that pre-licensure education and ongoing professional development are positively associated with nurses' preparedness and competency [27, 29]. A review also emphasized that high educational attainment and adherence to professional conduct are essential for developing competencies [21]. However, one study found no significant association between education level and NCs [25]. An Iranian study involving 231 nurses found a positive relationship between clinical competence and self-efficacy [30]. Multiple studies indicate that age is positively correlated with enhanced NCs [24, 25]. Nevertheless, some findings showed no significant correlation between NCs and variables like gender, clinical placement, and hospital type [25]. A Philippine study with 211 nurses found that marital status influenced competency levels [26]. Conversely, an Iranian study with 231 nurses found no significant relationship between NCs and marital status [25]. Two studies confirmed a positive correlation between NCs and monthly salary, job security, and employment status. Nurses with fixed or morning shifts exhibited higher competency levels [8, 26] (Table 1).

Table 1: Association of Nurses' Demographic and Job-Related Factors with Patient Safety and Nursing Competencies

Factor	Key Findings	Evidence from Literature
Work Tenure (Years of Experience)	Nursing competencies generally improve with increased experience and organizational support. However, some studies report higher interpersonal competencies among less experienced nurses or no direct association with patient safety.	Systematic review showing NCs evolve with experience [21]; positive associations reported in multiple studies; higher interpersonal skills in less experienced nurses [22]; positive link with confidence in safe practice [17]; no significant PS-tenure relationship in one study [11].
Professional Education	Higher educational preparation, particularly baccalaureate-level education, is associated with improved patient outcomes and nursing competencies, though findings are not universally consistent.	European studies reported ~30% lower hospital mortality with higher proportions of bachelor-prepared nurses [27, 28]; positive association with preparedness and competency [27, 29]; importance of education emphasized in review [21]; no significant association reported in one study [25].
Continuing Professional Development (CPD)	Ongoing education and adherence to professional conduct support competency development and preparedness for safe practice.	Positive associations reported between CPD and competency [27, 29]; a review highlighting the role of professional conduct and education [21].
Self-Efficacy	Higher self-efficacy is positively associated with higher clinical competence among nurses.	An Iranian study of 231 nurses demonstrating positive correlation between self-efficacy and NCs [30].
Age	Increasing age is generally associated with higher nursing competencies, though some studies report no association with certain demographic variables.	Positive correlations were reported in several studies [25]; no significant association with gender, placement, or hospital type in one study [25].
Marital Status	Mixed findings regarding the influence of marital status on nursing competencies.	The Philippine study (n = 211) reported a significant association [26]; the Iranian study (n = 231) reported no significant relationship [25].
Salary and Working Hours	Higher salary, job security, and fixed or morning shifts are associated with higher nursing competency levels.	Positive correlations between NCs and salary, job security, and shift type were reported in two studies [8, 26].

The work environment consists of the surroundings in which an employee performs their job, including the physical setup, human interactions, processes, and systems of the organization [7]. The work environment of health care organizations influences on job satisfaction and professional growth of its employees. A significant association ($r=0.231, p=0.001$) in work-related stress and NCs levels showed by a cross-sectional study from Iran ($n=230$). It has found that management expects experienced and skilled nurses to perform higher expectations, which increases the stress level [15]. In another study, expectations and management styles, as well as organizational work environment, were also emphasized to impact NCs [31]. A Korean cross-sectional study ($n=380$) has discovered that PS competencies and working hours were significantly correlated with the unfavorable consequences to nurses [1]. Some of the studies documented how the environment affected PS [14, 32]. In one example, a Brazilian study identified that a conducive work environment and job satisfaction of the nurse's reduced cases of harm like pressure ulcers and phlebitis, and hospitalization [12]. On the same note, Wu et al. demonstrated that positive work climate is related to PS [10]. Poor staffing and employment of incompetent staff are a risk to PS and cause nurse shortages [12]. The longitudinal study in the U.S. discovered that the layout of hospital units and the number of beds affected the problem of patient falls, as well as the communication patterns of nurses [33]. In a study of 737 nurses, the resources, setting, and education changes were associated with improved patient outcomes [27]. The perceived PS was strongly linked with involvement of nurses in the decision-making process and with resource availability and communication in the hospitals [34]. Equally, the culture of open collaboration among healthcare providers was positively related to safety culture [17, 19]. A Turkish study ($n=274$) discovered that PS culture was arguably improved with the encouragement of motivation of nurses, enhancement of the relationships between nurses and physicians, as well as the support of patient care [10, 35]. Patient-centered care and job satisfaction were also facilitated by the empowerment of nurses and their engagement in the process of quality improvement [36]. PS, and the quality of nursing care is also affected by the team's behavior. Verbal abuse or disrespect of nurses can be minimized by PS [2]. Other studies attribute PS incidents to the mental health of nurses. The physical health and emotional fatigue of nurses also have an unfavorable impact on the safety [37]. Hence, the emotional well-being of nurses should be supported to reach high-quality results [10].

Table 2: Effect of Work Environment on NCs and PS

References	Sample Size (n)	Key Findings	Implications for Work Environment, NCs, and PS
[27]	230	Significant positive association between work-related stress and NCs ($r = 0.231, p = .001$)	Experienced/skilled nurses face higher expectations, leading to elevated stress; management style affects Ncs

[28]	Not specified	Expectations and management styles, along with organizational environment, influence NCs	Organizational and managerial approaches impact nurse competency
[29]	380	PS competencies and working hours are significantly related to unfavorable outcomes.	Long working hours and competency demands affect nurses' well-being and patient outcomes.
[28]	Not specified	Workplace incivility negatively impacts Ncs related to PS	Need to address workplace incivility to maintain competency and safety
[31]	Not specified	Interprofessional collaboration improves job satisfaction and competency	Collaboration enhances NCs and work satisfaction
[32-36]	Not specified	Environmental factors influence PS	The work environment is critical for patient safety
[37]	Not specified	Hospital unit layout and bed capacity influenced patient falls, linked to nurses' communication.	Physical environment and communication styles impact PS.
[18]	737	Changes in resources, settings, and education are linked to better patient outcomes.	Resource availability and educational support improve outcomes.
[38]	Not specified	Nurses' participation in decision-making, resources, and communication associated with perceived PS	Empowering nurses enhances safety perception.
[39]	Not specified	Open collaboration among healthcare providers positively correlated with safety culture.	Teamwork strengthens safety culture.
[40]	Not specified	Nurses' empowerment and involvement in quality improvement support patient-centered care and job satisfaction	Engagement and empowerment improve both safety and satisfaction.
[41]	Not specified	Team behavior affects PS and nursing care quality; verbal abuse reduces PS.	Respectful workplace interactions are essential for safety.
[42, 43]	Not specified	PS incidents linked to nurses' mental health, physical health, and emotional exhaustion negatively affect safety.	Supporting nurses' mental and physical well-being is crucial.

The nurses' work load consist of prolonged shift hours, high patient ratio, physical activity, patients' disease conditions, and acuity levels [38]. Various researchers have demonstrated that job pressure among nurses is associated with poor patient outcomes [39]. In a mixed-method study in Spain (n=109), the perceptions of patient safety culture by nurses were studied, and their perception showed a lower level of safety because of work burden [40]. Of all the safety-related problems, including medication administration, removal of invasive lines and mechanical restraints, patient falls were the only issues significantly linked to work load of nurses [38]. Some studies have shown that incorrect staffing levels have a great influence on the culture of patient safety [41]. Moreover, it is indicated that the risk of negative patient outcomes rises with the rise in the nurse-to-patient ratio to 1:5 to 1:10 or 1:20. However, patient safety adverse events can be reduced with the help of patient-centered care methods [42]. CPD is the adult on-the-job training program that improves the ability of the adult to cope with the workplace complexities, patient demands, and career objectives [43]. To the nurses, CPD is crucial in the enhancement of confidence, knowledge, advanced skills, and motivation, which ultimately lead to the enhancement of patient safety [41]. In addition, it improves nursing managerial, clinical, and research abilities, which are critical in providing quality and safe care [43]. The significance of CPD has been

pointed out in different studies. Indicatively, an interventional study of Taiwan (n = 31) revealed that CPD-based instructional programs improved the clinical reasoning, leadership, and professionalism of the nurses, which subsequently resulted in PS and quality of care in the end [44]. In like manner, an interventional study of the simulation-based training revealed the enhancement of nursing competence, stress reduction, and confidence following the intervention [45]. Ongoing nursing education and development of critical thinking (CT) is another factor that could be used to create a safer caring environment [46]. A meta-analysis established that different educational interventions are very important in improving the cultural competence of nurses [47]. Therefore, on-the-job training plays a crucial role in the knowledge and skills upgrading of the nurses [28]. There are new technologies in healthcare such as electronic medical records (EMRs), electronic nursing documentation, and barcoding systems that are essential to transform the nursing practice, enhance patient safety, and outcome. One study in Taiwan has found that the implementation of tools, including barcoding systems, structured shift handovers, and EMRs, enhanced the efficiency of nursing, satisfaction, and decreased turnover, contributing to the safety [48]. In a Brazilian qualitative study, nurses (n = 21) stated that patient outcomes were safer with the help of advanced technologies [49]. On the same note, a systematic review

showed that computer-based documentation enhanced time management, minimized errors, patient falls, and infection rates [50]. Therefore, the implementation of innovative technological strategies becomes significant to confront PS dilemmas in healthcare systems [51]. The type of literature review included both empirical and theoretical research studies of predominantly cross-sectional nature, with one longitudinal study that involved age, gender, tenure, CPD, staffing, workload, mental health, self-efficacy, collaboration, and their relationship to patient safety (PS) and nursing competencies (NCs). Sample sizes of studies varied considerably (e.g., n=21-737) across studies, which may influence the precision, reliability, and generalizability of findings. Most of the researches were carried out in a single teaching hospital with a limited sample size, which is assumed to limit generalizability. Commonly used statistical analyses of included quantitative studies are: correlation, regression, t-tests, ANOVA, chi-square tests, and structural equation modeling. The general trend of findings support a consistent and largely positive relationship between nursing competencies and patient safety outcomes. The majority of the quantitative studies revealed significant associations between increased levels of clinical competence, communication, critical thinking, and ethical practice with improved safety outcome measures (i.e. decreased adverse events or culture of safety). There was substantial heterogeneity between studies in terms of design, sample size, and measurement tools, which prevented pooling of results, but findings were generally consistent across a wide range of settings and countries. Cross-sectional studies typically found moderate associations, and interventional studies reported increased safety behaviors following education.

The limitations of this review are that it only considered English-only articles (2010-2024) and that the study designs and measures were heterogeneous, which could not be meta-analyzed. Causal arguments are also limited by the fact that the data are mainly cross-sectional. Longitudinal designs and standardized instruments should be used in future research to enhance the study of causality and generalizability. The study should also focus on the interaction between organizational support, technology, and continuing education to support the safety culture in nursing.

CONCLUSIONS

NCs are an important source of PS. Effective clinical capabilities, critical thinking abilities, and ethical understanding are the attributes of a nurse that influence the quality outcomes of the patients. Effective nursing practice results in the reduction of unnecessary evils; nurses are more ready to identify hazards and react

efficiently. It also improves the level of care provision in general, as it makes sure that the procedures are done correctly and efficiently. Furthermore, once patients identify competent delivery of care, their trust in the healthcare system increases. A high level of competence makes nurses feel more confident and motivates them to pursue professional achievements, which ultimately encourages them to adhere to the provision of high-quality patient care. Therefore, investing in NCs development is significant to improve safer, proficient, and evidence-based patient-centered care.

Authors' Contribution

Conceptualization: ZK

Methodology: GV, HV, NS

Formal analysis: GV, HV

Writing and Drafting: ZK, GV, HV, NS

Review and Editing: ZK, GV, HV, NS

All authors approved the final manuscript and take responsibility for the integrity of the work.

Conflicts of Interest

All the authors declare no conflict of interest.

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