Independent decision making by intensive care nurses: an integrative review

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SUMMARY

- A key dimension of nurse autonomy is independent decision-making, which can be defined as decisions made by nurses based on nursing knowledge or experience, in the absence of direction from a physician.
- The aim of this review was to explore the status of the current body of knowledge on independent decision-making in ICU nurses: what are the themes within the research surrounding nurse decision-making and does the research surrounding nurse decision-making address independent decision-making?
- Following the methodology of Whittemore &Knafl's (2005) integrative review, we systematically reviewed and synthesized published research on decision-making by nurses working in adult ICUs. MEDLINE, CINAHL and SCOPUS were searched using the terms: 'independent decision-making', 'professional autonomy', 'nurse decision-making', 'intensive care' and/or 'critical care'. Quality appraisal was informally applied to assess design, sample and analysis, but it was not used for exclusion purposes as there was as lack of direct research on the topic of interest.
- Twenty-seven articles met the criteria, only 15 articles discussed, stated or implied independent decision making. There was no direct research found on independent decision-making. The literature reviewed clustered around three themes: influences on nurse decision making; types of decisions; and, protocol use in decision making. Other notable themes were medical dominance, gender, and collaborative practice.
- It is concluded that although independent decision-making by nurses in adult ICUs occurs every day in practice, it is rarely acknowledged, poorly conceptualized, and not directly researched. Research on independent decision-making by nurses is needed to inform nursing education programs; healthcare practices and policies; and regulatory processes.

INTRODUCTION

Existing research suggests that 60% of patient care decisions are made independently by nurses, which represents a significant portion of nurses' workload (Karra et al., 2014) and has important implications for the profession of nursing (Baykara & Şahinoğlu, 2014; Enns et al., 2014) and patient outcomes (Karra et al., 2014), such as reduced length of ICU stay (Rose et al., 2007), and improved nutritional status (DuBose et al., 2009; Friesecke et al., 2014). Despite its ubiquity, independent decision-making by nurses is rarely acknowledged, poorly conceptualized, and not directly researched. Existing scholarly work on independent decision-making by nurses is typically nested within discussions of clinical autonomy in nursing.

Background

Nurse autonomy is pivotal to job satisfaction (Baykara & Şahinoğlu, 2014; Iliopoulou & While, 2010; Kaddourah et al., 2013) and is an important characteristic of highly desirable Magnet hospitals (Kramer et al., 2007). In an effort to describe, understand, and empirically study the relationship between nurse autonomy and patient outcomes, Kramer and colleagues conducted a grounded theory study of clinical autonomy among nurses practicing in 14 Magnet hospitals in the US (Kramer & Schmalenberg, 2002; 2003; 2004). From that work, the authors defined nurse autonomy as the freedom to act in the best interests of patients and to make independent clinical decisions in the nursing sphere of practice and interdependent decisions in those spheres where nursing overlaps with other disciplines.

- . . . [Clinical autonomy] often exceeds standard practice, is facilitated through evidence based practice, includes being held accountable in a constructive, positive manner, and nurse manager support. (Kramer & Schmalenberg, 2008, pp. 60-61).

They further concluded that nurse autonomy has three dimensions: clinical autonomy, control over nursing practice, and job/work autonomy.

Independent nurse decision-making is synonymous with clinical autonomy described by Kramer and Schmalenberg (2008). Although independent nurse decision-making occurs across all domains of practice, it is poorly documented and understood and its impact minimized (Karra et al., 2014). Kramer et al. (2006) contend that independent decision-making is necessary in situations where immediate action is required to avoid negative patient outcomes. In Magnet hospitals [American Nurses Credentialing Center (ANCC), 2011; 2015], independent nurse decision-making in the absence of a physician is standard practice when patients require advocacy, emergency intervention or triaging (Kramer et al., 2006). The Canadian Association of Critical Care Nurses (2009) practice standards also describe critical care nurses' responsibility

to anticipate, assess, prepare for, and intervene in life-threatening situations based on the specialized knowledge and experience of the critical care nurse.

Clinical autonomy and independent decision-making are closely linked in studies of critical care nurses where nurse autonomy (Kaddourah et al., 2013) and decision-making (Bucknall, 2000) are highly correlated. Karra et al (2014) report that 3% of prevention and 4% of communication decisions are made in critical situations. Despite its potential impact on nursing practice and patient outcome, little is known about the phenomenon of independent nurse decision-making, and a review of the current literature surrounding the concept is a necessary starting point.

METHODS

Aims

The aim of this integrative review was to explore what is the status of the current body of knowledge on independent decision-making in ICU nurses? Further exploration into the body of literature included understanding: what are the themes within the research surrounding nurse decision-making; What are the methods used to research nurse decision making: And, does the research surrounding nurse decision-making address independent decision-making directly?

Design

This integrative review employed methods described by Whittemore & Knafl (2005) to explore published research on independent decision-making by nurses working in adult ICUs. This method was chosen because it facilitates the review and synthesis of both qualitative research, and quantitative studies (Whittemore and Knafl, 2005). It also allows for a variety of perspectives and in turn enables the reviewer to better understand the concept. Since the existing literature on independent decision-making is sparse, it is important to include all forms of research in this review in order to "present the state of the science, contribute to theory development and have direct applicability to practice and policy" (Whittemore & Knafl, 2005, p 46).

For the purposes of this review, the following operational definitions were used:

- Independent decision-making: Decision-making process by nurses where clinical decisions are made and action is taken or withheld based on nursing knowledge, experience, and/or training, without the direction of physician or nurse practitioner
- Autonomy: The freedom to act in the best interests of patients and to make independent clinical decisions in the nursing sphere of practice and interdependent decisions in those spheres where nursing overlaps with other disciplines (Kramer & Schmalenberg, 2008, p. 60).
- Protocol: Physician prescribed orders used to guide practice of certain skills/tasks.

Search Methods

Electronic searches were conducted of MEDLINE, CINAHL and SCOPUS databases, with the assistance of a health sciences librarian, using the following key words together and in different combinations: 'independent decision-making', 'professional autonomy', 'nurse decision-making', 'intensive care' and/or 'critical care'. Articles included in the review were peer-reviewed reports of original research, published in the English language between 2005 and 2015, and focused on decision-making by nurses working in an adult ICU. A comprehensive literature review of nurse autonomy was published in 2011 (Varjus et al.) which included articles from 1966-2008, therefore we focused our review on recent publications from 2005-2015. Articles were excluded if they did not report original research (e.g., literature reviews, letter to the editor, or theoretical articles) or did not focus on decision-making by ICU nurses.

Quality appraisal

Quality appraisal was informally applied to assess design, sample and analysis, but it was not used for exclusion purposes as a lack of direct research on the topic of interest exists. In order to conceptualize the construct and to understand its occurrence among nurses working in adult ICUs, all studies that met the inclusion criteria and were deemed sound from a review of design, sample and analysis were included. The body of literature as a whole encompasses a low to moderate level of evidence as it contains lower level evidence from observational studies, focus group/interviews, case study or qualitative reports (n = 12); moderate level evidence from descriptive correlational reports (n = 12); and, higher level evidence with a quasi-experimental report and a prospective cohort experiment. However, it is difficult to generalize the quality of the body of literature as a whole due to the nature of the integrative review and the broad array of methodologies included.

Data abstraction

Articles included in the review were summarized in a data extraction table under the following headings: author, sample, methods, results, and whether or not the results addressed independent nurse decision-making directly or indirectly (Table 1). The findings of the articles in the review were grouped according to following themes: geographical location of the research; research methods; and, theme of research, i.e. what was the overall outcome or message about nurse decision-making (see Figures 1 and 2).

Synthesis

Outcome data were analyzed and using constant comparison where study results were summarized and the findings were explored for relationships, commonalities, and differences, then grouped according to theme . This yielded the following themes: influences on independent nurse decision making, types of decisions, and protocol use in decision making. Other factors that influenced independent nurse decision-making that were noted across the research included medical dominance in healthcare systems, politics and gender, and collaborative practice.

FINDINGS

Search Outcomes

The initial search yielded 579 articles. Of these, 248 articles were retrieved with the search phrase ('autonomy' AND 'independent decision-making' AND 'ICU'). Sixty-five articles were retrieved from searches of the phrase ('nurse autonomy' AND 'decision-making' AND 'ICU'). Two hundred and sixty-six articles were retrieved from searches of the phrase ('nurse' AND 'decision-making' AND 'ICU'). Titles and abstracts of the 579 articles were assessed for relevance to inclusion/exclusion criteria. Fifty-nine (n = 59) articles were deemed potentially relevant and the full text of these articles were reviewed along with 15 additional articles derived from hand searches of reference lists (n = 74). After excluding irrelevant articles, twenty-seven articles (n = 27) were retained for the full review (see Figure 1).

The articles in this review originated from a wide variety of countries and studies employed qualitative, quantitative, and mixed methods (see Table 1). The qualitative studies employed naturalistic observation (Karra et al. 2014); interview/focus groups/case study

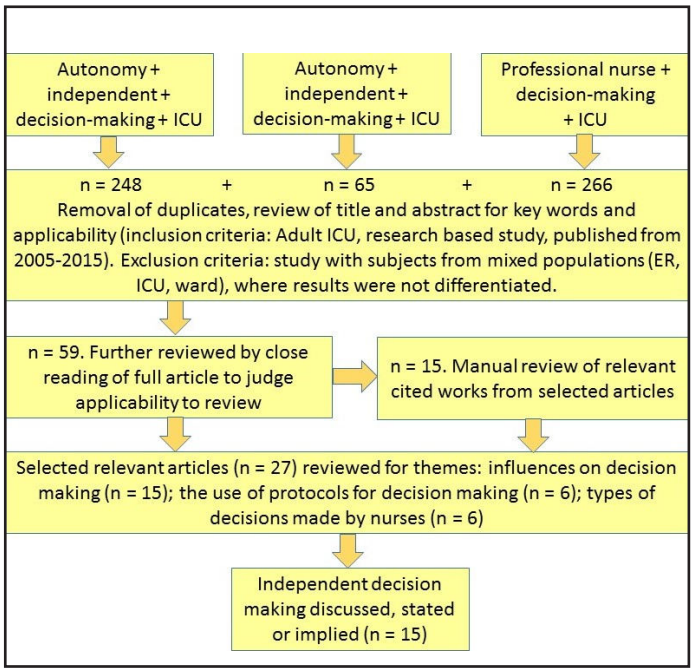

Figure 1. Search summary

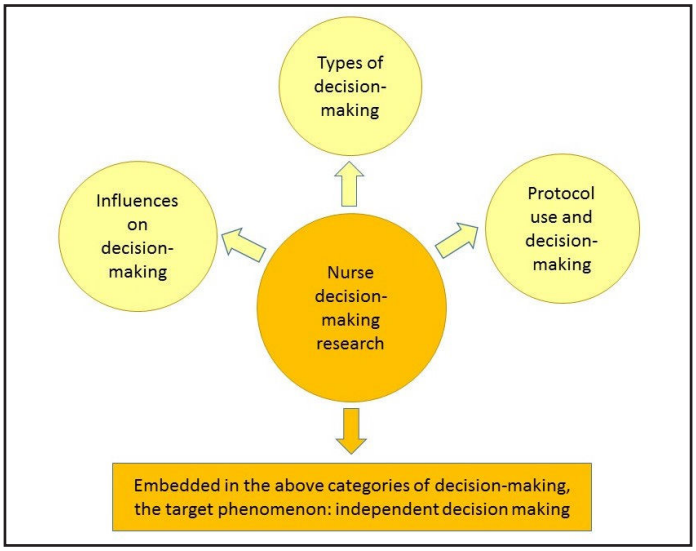

Figure 2. Themes in decision-making research

(Flynn & Sinclair 2005, Hansen et al. 2007, Thompson et al. 2008, Eckerblad et al. 2009, Ramezani-Badr et al. 2009); or a mixture of observation and interview (Currey et al. 2006, Currey & Botti 2006, Hancock & Easen 2006, Aitken et al. 2008, Hoffman & Severinsson 2009, Villa et al. 2012). Quantitative studies consisted of exploratory descriptive studies using various questionnaires (Bakalis & Watson 2005, Walker & Gillen 2006, Rose et al. 2007, Beck & Johnson 2008, Rose et al. 2008, Iliopoulou & While 2010, Hofhuis et al. 2012, Haugdahl et al. 2013, Karanikola et al. 2013, Georgiou et al. 2015) or descriptive, correlational cross-sectional designs (Papathanassolgou et al. 2005, Papathanassoglou et al. 2012), a pre-test-post-test (DuBose et al. 2009) and retrospective-prospective experimental design (Friescke et al. 2014). One mixed methods study was reviewed (Baykara & Şahinoğlu 2014).

None of the articles in this review directly focuses on independent nurse decision-making per se. Rather, independent decision-making is discussed as a defining characteristic of nurse autonomy, or is acknowledged in retrospect as an incidental finding in the context of nurse-decision making. However, because nurse autonomy and independent nurse decision-making are integral to each other, we use the terms synonymously. The data in the review cluster around the following three themes: factors influencing independent nurse decision- making; types of decisions made independently by nurses; protocol use in independent nurse decision-making; yet, other overarching concepts surrounding the data were identified and, must also be addressed. These include the influence of medical dominance. gender and politics, and, collaborative practice, on independent decision-making.

Factors influencing independent nurse decision-making

The greatest number of articles in this review (n = 15) focused on factors that influence the autonomy and independent decision-making of ICU nurses. Level of education and years of nursing experience were frequently cited as the strongest influences on independent decision-making (Currey & Botti ,2006; Eckerblad et al., 2009; Georgiou et al., 2015; Hoffman et al., 2009; Papathanassoglou et al., 2005; Villa et al., 2012). In particular, having a baccalaureate degree and post-graduate critical care education are associated with the highest levels of nursing autonomy and independent decision-making (Bakalis & Watson 2005, Baykara & Şahinoğlu, 2014; Hancock & Easen, 2006; Papathanassoglou et al., 2005; Rose et al., 2007).

Not surprisingly, more years of nursing experience also has an influence on independent nurse decision-making. Flynn and Sinclair (2005) report, from a focus group study of ICU nurses, that experienced nurses are more likely to deviate from protocols and more frequently engage in independent decision-making. Compared with novice nurses, experienced nurses also make higher quality decisions and are more confident in decision-making circumstances (Currey & Botti, 2005; Currey et al., 2006; Hoffman et al., 2009). Furthermore, experienced nurses employ different types of information (Aitken et al., 2008; Hancock et al., 2006; Hoffman et al., 2009) and use different frameworks to make decisions (Aitken et al., 2008; Hoffman et al., 2009; Ramezani-Badr et al., 2009). A single case-study simulation experiment found, however, that although critical care experience is beneficial in decision making, this benefit can wane when time pressure is added to a decision-making situation (Thompson et al., 2008).

Other influences on independent decision-making by nurses include personal factors such as age and gender (Baykara & Şahinoğlu, 2014; Iliopoulou & While, 2010); the social and political contexts on the nursing unit (Hancock & Easen, 2006; Papathanassoglou et al., 2005; Ramezani-Badr et al., 2009; Villa et al., 2012); and condition of the patient (Rose et al., 2007). There is some disagreement in the literature with respect to gender and independent decision-making, with some authors suggesting that male nurses report higher levels of autonomy (Papathanassolgou et al., 2005), while others report that female nurses have higher autonomy (Georgiou et al., 2015; Iliopoulou & While, 2010). The condition of the patient also influences independent nurse decision-making (Rose et al., 2007); the more complex the patient's care, the less likely nurses are to make independent decisions regarding that care (Currey & Botti, 2006; Georgiou et al., 2015; Hancock & Easen, 2006). There are also reported differences in levels of autonomy among nurses working in different types of ICUs, with nurses in cardiovascular ICUs (CVICU) reporting the highest levels of autonomy (Iliopoulou & While, 2010) and therefore, independent decision-making.

Other articles explore factors associated with autonomy through descriptive correlational studies using surveys. Links were found between higher rated autonomy and job satisfaction (Iliopoulou & While, 2010); collaboration and satisfaction with care decisions; and

Table 1. Included studies

Authors and year	Sample and setting	Country	Approach	Methods	Theme	Independent decision-making stated or implied
Aitken et al., 2008	7 expert critical care nurses	Australia	Qualitative	Mixed observational/ interview	Influences on decision-making	No
Bakalis & Watson, 2005	60 nurses from medical/ surgical/critical care	United Kingdom	Quantitative	Exploratory/descriptive via questionnaires	Types of decisions made	Yes
Baykara & Şahinoğlu, 2014	30 ICU nurses	Iran	Mixed methods	Exploratory/descriptive via questionnaire and interview	Influences on decision-making	No
Beck & Johnson, 2008	75 ICU nurses	Canada	Quantitative	Exploratory/descriptive via questionnaires	Protocol use	No
Currey et al., 2006	38 nurses CVICU	Australia	Qualitative	Mixed observational/ interview	Influences on decision-making	No
Currey & Botti, 2005	38 nurses from ICU and CVICU	Australia	Qualitative	Mixed observational/ interview	Influences on decision-making	No
DuBose et al., 2009	23 Trauma ICU nurses	United States	Quantitative	Pre-test post-test	Protocol use	No
Eckerblad et al., 2009	20 ICU nurses	Sweden	Qualitative	Interview/focus group/ case study	Influences on decision-making	Yes
Flynn & Sinclair, 2005	17 ICU nurses	United Kingdom	Qualitative	Interview/focus group/ case study	Protocol use	Yes
Friescke et al., 2014	101 patients pre- and 97 post-intervention in medical ICU	Germany	Quantitative	Prospective-retrospective	Protocol use	Yes
Georgiou et al., 2015	163 adult ICU nurses	Greece	Quantitative	Exploratory/descriptive via questionnaires	Influences on decision-making	No
Hancock & Easen, 2006	42 nurses, 16 doctors, 2 management from cardiac ICU	United Kingdom	Qualitative	Mixed observational/ interview	Influences on decision-making	Yes
Hansen & Severinsson, 2007	24 ICU nurses	Norway	Qualitative	Interview/focus group/ case study	Protocol use	Yes
Haugdahl et al., 2013	38 nurse managers and 38 physician directors of ICU	Norway	Quantitative	Exploratory/descriptive via questionnaires	Types of decisions made	Yes
Hoffman & Severinsson, 2009	8 ICU nurses, 8 novice, 8 expert	Australia	Qualitative	Mixed observational/ interview	Influences on decision-making	No
Hofhuis et al., 2012	68 nurse managers from adult ICU	Netherlands	Quantitative	Exploratory/descriptive via questionnaires	Types of decisions made	No
Iliopoulou & While, 2010	302 critical care nurses	Greece	Quantitative	Exploratory/descriptive via questionnaires	Influences on decision-making	Yes
Karanikola et al., 2013	575 ICU nurses	Italy	Quantitative	Exploratory/descriptive via questionnaires	Influences on decision-making	Yes
Karra et al., 2014	23 ICU nurses	Greece	Quantitative	Naturalistic observation	Type of decisions made	Yes
Papthanassoglou et al., 2005	803 ICU nurses	Greece	Quantitative	Descriptive correlational/ cross-sectional	Influences on decision-making	Yes
Papathanassoglou et al., 2012	255 practicing ICU Nurses	Europe	Quantitative	Descriptive correlational/ cross-sectional	Influences on decision-making	No
Ramezani-Badr et al., 2009	14 critical care nurses	Iran	Qualitative	Interview/focus group/ case study	Influences on decision-making	Yes
Rose et al., 2007	3986 ventilation decisions in ICUs	Australia	Quantitative	Exploratory/descriptive via questionnaires	Types of decisions made	Yes
Rose et al., 2008	54 Adult ICU managers or senior clinical nurses	Australia & New Zealand	Quantitative	Exploratory/descriptive via questionnaires	Types of decisions made	Yes
Thompson et al., 2008	241 acute care and critical care nurses	United Kingdom, Netherlands, Australia and Canada	Qualitative	Interview/focus group/ case study	Influences on decision-making	No
Walker & Gillen, 2006	92 ICU nurses	United Kingdom	Quantitative	Exploratory/descriptive via questionnaires	Protocol use	Yes
Villa et al., 2012	18 CVICU nurses	Italy	Qualitative	Mixed observational/ interview	Influences on decision-making	No

reduced moral distress (Karanikola et al., 2013; Papathanassoglou et al., 2012).

Types of decision

Six articles in the review focus on the types of decisions made independently by nurses. Independent decision-making by nurses typically occurs in two types of situations. The first is the decision to deviate from physician orders or protocols based on nursing judgement about routine patient care (Eckerblad et al., 2009; Flynn & Sinclair, 2005; Friesecke et al., 2014; Hansen & Severinsson, 2007; Iliopoulou & While, 2010; Karra et al., 2014). For example, Iliopoulou and While (2010) found, from a survey of 431 Greek critical care nurses, that 67% of nurses refused to follow a physician order if it were contraindicated (e.g., the administration of a contraindicated medication). The same authors state that 81% of nurses employ nursing practice standards to guide their practice, as opposed to strictly following physician orders and that 86% of nurses would assume complete responsibility for decisions and malpractice, should it arise. In agreement, Hansen et al. (2007) used focus groups and interviews to describe three strategies that nurses follow, when a protocol is not available for ventilator weaning, one of which is independent decision-making, which involves taking action without an order based on nursing knowledge and experience with ventilator weaning. Some research outlines the lack of independent decision-making for specific tasks, including extubation (Hancock & Easen, 2006). However, there seem to be some non-specific tasks and areas of overlapping spheres of practice involving nursing and physicians' roles that have been informally renegotiated as nursing tasks (Kramer & Schmalenberg, 2008), and are perceived as independent decisions made by nurses (Haugdahl et al., 2013; Rose et al., 2007; Rose et al., 2008).

The second type of situation in which independent nurse decision-making occurs during potential emergency situations when patients require immediate rescue, advocacy, and/or triage (Bakalis & Watson, 2005; Hoffman et al., 2009; Kramer & Schmalenberg, 2008; Papathanassoglou et al., 2005; Ramezani-Badr et al., 2009). According to Ramezani-Badr et al. (2009), all independent decisions require a risk-benefit analysis by the nurse.

A small number of studies in the review focused on the quantity and types of decisions made independently by critical care nurses. Some studies examined decision-making in the context of specific ICU tasks, such as ventilator management, medication administration, and the management of sleep and sedation (Haugdahl et al., 2013; Hofhuis et al., 2012; Papathanassoglou et al., 2005; Rose et al., 2007; Rose et al., 2008). From a 3 month prospective cohort study investigating the types of decisions made in regards to ventilator weaning and who is responsible for those decisions, Rose et al. (2007) found that 64% (2358 decisions out of the 3986 recorded) are made independently by nurses. This is consistent with other studies in which nurses independently decide to initiate weaning or adjust the fraction of inspired oxygen (FiO2) (Haugdahl et al., 2013; Rose et al., 2007; Rose et al., 2008). However, Rose et al., (2007, 2008) also found that nurses independently make other ventilation-related decisions including changing positive end expiratory pressure, pressure support, and respiratory rate in response to patient status and weaning goals. Notably, the ultimate decision-making authority for initiating or removing mechanical ventilation remains the responsibility of a physician (Haugdahl et al., 2013; Hofhuis et al., 2012; Rose et al., 2007; Rose et al. 2008). For example, nurses and physicians collaboratively identify 'failure to wean' or 'failure to extubate' (Haugdahl et al., 2013; Rose et al., 2007), but the physician ultimately decides whether or not to extubate or to re-intubate. Despite this, research indicates that nurses, nurse managers, and physicians rate nurse autonomy in ventilation management as moderate. In addition, it seems there is no nurse autonomy for pharmacological intervention, specifically described by Hofhuis et al. (2012) in the context of sleep and sedation management where autonomy and influence was rated by the nurses as moderate, despite only reporting independent decision-making for non-pharmacological interventions to manage sleep and sedation. In these ways, nurses seem to perceive a moderate level of autonomy when they are in control or are responsible for the decisions made during the process of weaning or sleep/sedation management, despite little control over final outcomes.

The remaining studies explore the categories of decisions that are made by critical care nurses (Karra et al., 2014; Papathanassoglou et al., 2005) and how they differ from decisions made in other care areas such as medicine and surgery (Bakalis & Watson, 2005). Karra et al. (2014) suggest that nurses make 60% of care decisions for patients independently and that these decisions fall within the following three categories - evaluation, prevention and communication. The majority of these decisions involve the direction of nursing care, however, Bakalis and Watson (2005) identify specific types of clinical and non-clinical decisions independently made by critical care nurses, such as diagnosis of the patient's clinical condition, changing of medication and providing information to patients. Karra et al. (2014) and Bakalis and Watson (2005) also highlight that critical care nurses act independently when immediate intervention is required for the safety and survival of the patient, and that these decisions make up 4% of communication decisions and 3% of intervention decisions made independently (Karra et al., 2014).

Protocol use

Considerable literature surrounding independent decision-making by ICU nurses focuses on the use of protocols (n = 6). A protocol is defined here as a plan of care, based on research and empirical evidence (Flynn & Sinclair, 2005), which is ordered by a physician and used to standardize practice and guide nursing care (Beck & Johnson, 2008) in the absence of a physician (Hansen & Severinsson, 2007). Interestingly, the research is inconsistent regarding the advantages and disadvantages of protocols in relation to independent decision-making, and the mere fact that a protocol is generally ordered by a physician undermines the arguments for their uses in independent nurse decision-making (Rose et al., 2008). However, there seems to be a linear progression in the use of protocols and independent nurse decision-making. Where autonomy and independent decision-making is low, nurses advocate for and would prefer to have a protocol to work from in order to free themselves from the dependence on a physician presence to treat patients (Hansen & Severinsson, 2014; Hofhuis et al., 2012); to legitimize what they already do (Hansen & Severinsson, 2014); and to add a degree of autonomy to nursing practice that is otherwise is missing (Rose et al., 2008). In this sense, protocols are seen as "motivating and time saving as well as providing a feeling of independence" to nursing care (Hansen & Severinsson, 2014, p. 202). Another perspective on the benefits of protocols is that they provide a tool/guide for learning decision-making among novice nurses (Villa et al., 2012). As autonomy levels increase, the research shows that nurses apply protocols as they see fit and prefer more flexible protocols that involve the use of clinical judgement and the ability to modify protocols to fit patients (Beck & Johnson, 2008; DuBose et al., 2009; Flynn & Sinclair, 2005; Walker & Gillen, 2006). On the contrary, it is argued that "medically designed and approved

protocols do not meet the definition of autonomy" (Rose et al., 2008, p.1041) and their use can dampen critical thinking skills (Karra et al., 2014) and decrease autonomy in ICU nurses (Beck et al., 2008). However, most research indicates that patient outcomes benefit from implementation of protocols (Beck et al., 2005; DuBose et al., 2009; Friesecke et al., 2014) as they reduce initiation time of patient care activities when nursing judgment is used to initiate the protocol. This has been shown in instances of glucose regulation (DuBose et al., 2009) and enteral feeding (Friesecke et al., 2014).

Medical dominance

References to power inequities between physicians and nurses were obvious throughout this review. In most instances, physicians retain ultimate decision-making responsibility, which has direct implications for nursing scope of practice (Ramezani-Badr et al., 2009). It is ultimately "the nature of the relationship between the nurse and physician [that] determines the authority given to the nurse" (Ramezani-Badr et al., 2009, p.354) to make independent decisions. Beck et al. (2008) and Hansen et al. (2007) agree that even the use of protocols is ultimately dependent on the physician ordering the protocol. Although nurses may have the requisite education, knowledge, and expertise to make decisions regarding patient, they often lack the authority to do so. In those situations, some nurses take independent action, believing asking for forgiveness rather than permission may be more expedient when a patient's health or well-being is at stake (Villa et al., 2012). Other nurses take a more covert approach and engage in "near decision-making" (Villa et al., 2012) by trying to influence physician decision-making by presenting data regarding patient status and suggesting a treatment plan (Haugdahl et al., 2013; Hofhuis et al., 2012).

Politics and gender

Most of the studies in this review originate in Europe, with the majority being from Greece, where it must be noted that most nurses are women and most physicians are men. (Georgiou et al., 2015; Iliopoulou & While, 2010; Karra et al., 2014; Papathanassoglou et al., 2005; Papathanassoglou et al., 2012). The subordinate status of women in Greek culture underpins and reinforces the power differential between nurses and physicians. It is not surprising then, that nurses' scope of practice in Greece is highly restricted (Karra et al., 2014) with limited independent decision-making opportunities. What is more, 2009 data reveals that "Greece and Italy [have] an oversupply of physicians and an undersupply of nurses" [Organisation for Economic Co-operation and Development (OECD) 2011, p. 72]. This imbalance contributes to a competitive environment in which physicians are not interested in supporting nurse autonomy and a broader role for the nurse despite evidence that expanding nurses' scope of practice increases efficiency and reduces the cost of healthcare while maintaining similar patient outcomes (OECD, 2011). Villa et al. (2012) describe a similar situation in Italy where nurses' scope of practice remains limited. In contrast, the UK and Scandinavian countries have higher than average nurse-physician ratios and more nurses per population (OECD, 2011) creating more favourable dynamics for nurse autonomy and independent nurse decision-making (Bakalis & Watson, 2005; Hansen & Severinsson, 2007; Iliopoulou & While, 2010; Karra et al., 2014; Papathanassoglou et al., 2005). Papathanassoglou and her colleagues (2005) contend that medical dominance de-values nursing input into clinical decision-making in Greece where nursing had not yet achieved professional status. These long-standing social and professional imbalances and impede the professionalization of nursing and the visibility of independent decision-making.

Does collaborative practice obscure independent nurse decision-making?

Although independent nurse decision-making is a common in nursing practice, it is rarely the focus of research. Rather, independent nurse decision-making is implied or discussed in relation to nurse autonomy. Kramer and Schmalenberg (2008) attribute this, at least in part, to a lack of clarity of related concepts and an attendant lack of operational definitions. Another possible reason for the lack of attention to independent nurse decision-making may be that it is obscured by the concept of collaborative interprofessional practice.

Although collaboration is positively correlated with higher autonomy (Georgiou et al., 2015), the overlapping and complementary scopes of practice associated with collaboration may blur roles and obscure the presence of independent nurse decision-making (Kramer et al., 2006). A study by Iliopoulou and While (2010) found a positive correlation between autonomy, and role ambiguity and confusion. This leaves open the possibility that independent decisions made by nurses in these environments are labeled collaborative practice and the authority for decisions are difficult to identify and study.

As well, researchers may avoid identifying and researching independent nurse decision-making because of the potential ethical and/or legal issues. One example of this is when nurses act autonomously and independently make decisions that are beyond their scope of practice to prevent negative patient outcomes. According to Kramer et al. (2007), "nurses often redefine their own practice boundaries in the criticality of clinical situation" (pp.44), often with the consultation of other nurses (Currey et al., 2006; Iliopoulou & While, 2010; Ramezani-Badr et al., 2009), and physician confirmation is made at another point in time (Kramer et al., 2007). Those authors contend that these types of action should be supported and discussed as an area for improvement and renegotiation of nurses' scope of practice (Kramer et al., 2007) to include the decisions commonly made by nurses in areas where medical and nursing practice overlap (Kramer & Schmalenberg, 2008).

DISCUSSION

This review points to a need to understand the nature and dynamics of independent nurse decision-making and its implications for healthcare systems, the nursing profession, and patient outcomes. Broadening the nurses' scope of practice to include independent decision-making that already occurs has potential to improve the efficiency and effectiveness of healthcare systems (OECD, 2011), particularly in areas where there is a dearth of physicians.

Understanding independent nurse decision-making also advances the nursing profession as a whole, which frequently faces challenges such as nursing shortages and healthcare restructuring. Independent nurse decision-making and nursing autonomy support job satisfaction and may negate the contributors to nursing shortage such as low job satisfaction, low quality work environments, burnout and moral distress which are shown to cause nurse attrition and intention to leave the profession (Chachula et al., 2014; Papathanassoglou et al., 2012). Identifying and supporting current and future nurse autonomy represents a potential target for quality improvement to the status and function of the nursing workforce.

In addition, acknowledging the role of the autonomous registered nurse provides the basis for defence against healthcare restructuring, which often plagues the nursing profession. Considering that education and experience enhance autonomy, independent decision-making is arguably the differentiating factor between types of care providers, and the key to a more efficient and cost effective

health care system (OECD, 2011). Awareness and acceptance of the role of the autonomous registered nurse in reduced complications, reduced wait-times and fewer hospital deaths (College and Association of Registered Nurse of Alberta [CARNA], 2014), would undoubtedly defend against replacement with lesser educated and trained employees (i.e., nursing assistant and licensed practical nurse). Yet, in order to support independent nurse decision-making and autonomy, we must first understand better the circumstances surrounding the phenomenon.

CONCLUSION

Clearly, there is a large gap in the research focused specifically on independent decision-making by nurses. The research that does exist surrounding the topic focuses primarily on nurse autonomy and is geographically limited which creates difficulty in generating conclusions about the data. The findings of this review do, however, confirm the need for further research to clarify concepts related to independent nurse decision-making, develop operational definitions, and to study the phenomenon in various contexts in order to apply its benefits to the profession and health care systems worldwide.

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