Registered Nurses' Perceived Importance of Knowledge Sources in Relation to Structural Empowerment

by

Lorraine J. Avery

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DEDICATION

In memory of my late grandparents

Ada Marie and Frederick GeorgeVeniez

You will be forever in my heart

ABSTRACT

Background: It is argued that there is a hierarchical valuing of empirical knowledge over other knowledge sources associated with evidence informed practice and that social structure plays a role in how knowledge is legitimated and how nurses may respond to this dominant view. What constitutes legitimate knowledge has received attention in the nursing literature and has implications for nursing practice.

Purpose: The purpose of this exploratory, mixed method study was to determine the importance of six knowledge sources (empirical, esthetic, moral/ethical, personal, socio-political and unknowing) and the relationship of the knowledge sources to structural empowerment (SE) by clinical practice nurses (CPNs) employed in adult speciality areas.

Methods: CPNs completed one of three clinical vignettes to determine their perceived importance of pluralistic knowledge. Participants determined their perceived importance of the six knowledge sources based on how they would most likely respond on a typical work day (most likely scenario) and their perception of an ideal practice environment (most desirable scenario). The Conditions for Work Effectiveness Questionnaire II (Laschinger, 2001) measured SE. Thirteen qualitative interviews added insight related to the use of pluralistic knowledge by the participants and were analyzed inductively.

Results: The participants perceived the six knowledge sources as important in practice and wanted to use more of each knowledge source. Multivariable regression revealed that 20.3% of the variance in SE was explained by the grand difference between the most likely and most desirable scores and the personal knowledge source in the most likely scenarios of the vignettes. Analysis of the interviews identified three themes and six categories that captured the

participants' experiences and supported the quantitative research findings related to the importance of pluralistic knowledge sources in nursing practice.

Conclusion: The participants perceived pluralistic knowledge as important in clinical care and wanted to incorporate more pluralistic knowledge into their practice. The vignettes provided a novel tool to facilitate the understanding of how CPNs perceived the importance of pluralistic knowledge in guiding clinical care. The results of this study supports a realistic evidence-informed nursing practice environment in which CPNs are empowered to use pluralistic knowledge sources in a safe manner.

CHAPTER 1: INTRODUCTION

The purported benefits of evidence informed practice (EIP) and EIP decision-making processes within nursing care encounters are appealing as the trustworthiness of this practice and these processes is related to the widespread belief that they have a positive impact on the quality of patient care (DiCenso, Guyatt, & Ciliska, 2005; Squires, Estabrooks, Gustavsson, & Wallin, 2011). In particular, patient care decisions based on systematic reviews and randomized controlled trials are believed to be the 'best evidence' to inform nursing decisions (Avery, 2009; Fineout-Overholt, Melnyk, & Schultz, 2005; Holmes, Gastaldo & Perron, 2007; Holmes, Perron & O'Byrne, 2006).

Nursing scholars have questioned the appropriateness of the adoption of EIP by the nursing profession and have suggested that the sole reliance on EIP decision-making processes may have negative consequences for patients and nurses, as well as for the advancement of nursing knowledge (Holmes, Gastaldo, & Perron, 2007; Holmes, Perron, & O'Byrne, 2006). The legitimization of nursing knowledge sources is best understood as a social process, where healthcare organizations may play an important role in sustaining the dominant biomedical model in healthcare (Cranley, Doran, Tourangeau, Kushniruk, & Nagle, 2009; Heath, 1998).

In this first chapter, an argument will be put forward that the understanding of clinical practice nurses use and perceived importance of pluralistic knowledge is important to quality nursing care and to how pluralistic knowledge fits within the bio-medical paradigm, in particular how pluralistic knowledge sources are best understood within the evidence-informed practice model. In addition, the purpose, assumptions, research questions and significance of this study are outlined. In chapter two, the conceptual framework and a review of the literature will be

addressed. Chapter three documents the methods used to conduct this study, followed by the results in chapter four and concluding with a discussion of the results in chapter five.

Background

Many countries, including Canada, struggle to address the complexity of issues related to the delivery of healthcare services. Escalating financial costs associated with the delivery of healthcare services as well as supply and demand issues contribute to the need to ensure current healthcare services are consistent, safe and affordable. Although there are many dimensions of value in health care delivery, the adoption of EIP addresses clinical quality and safety (Adams et al., 2008).

In a healthcare system that emphasizes clinical effectiveness and efficiencies, nurses need to not only understand but apply appropriate knowledge sources to guide nursing care. Access to appropriate knowledge sources facilitates the ability of clinical practice nurses to individualize patient care, which in turn may increase the likelihood that patient care is safe, rather than being neutral, inappropriate, or harmful. Appropriate measures of healthcare value play a key role in developing context appropriate knowledge related to patient quality. Moreover, a healthcare system primarily based on empirical values requires an increase in the intensity of information gathered, leading to more science than art. In an environment that strives for personalized medicine, clinical practice nurses must know what nursing interventions work and for whom and to apply this knowledge consistently in clinical practice (Adams et al., 2008). Within this context, the tenets of EIP are logical and as such are largely embraced by healthcare professionals (Porter, 2010).

Despite the documented benefits of a nursing practice environment supported by the processes of EIP, general consensus and agreement with such processes have been challenged by

nursing scholars, in particular that the sole adoption of EIP by the nursing profession may result in the privileging of knowledge sources. In particular, the epitome of what constitutes legitimate knowledge has received attention in the nursing literature (Holmes, Perron, & O'Byrne, 2006; Mitchell & Cody, 1992). Nursing leaders have questioned the appropriateness of the perceived valuing of empirical knowledge associated with EIP over other knowledge sources and suggest that such processes may be less than ideal for patients as well as for the advancement of nursing knowledge. The adoption of evidence informed processes by nurses may cause systemic and individual nursing dissatisfaction, with potential negative implications for patients and nurses (Holmes, Gastaldo, & Perron, 2007; Holmes, Perron, & O'Byrne, 2006). As other knowledge sources may not be considered amenable to 'objective' scientific scrutiny their influence as modes of legitimate nursing knowledge sources may be potentially compromised (Hancock & Easen, 2004; Porter, 2010).

Research utilization (RU), a component of knowledge utilization, is defined as the use of research (science) in all facets of nursing practice (Estabrooks, 1999). Different forms of RU have been proposed and include instrumental, conceptual, and persuasive or symbolic. Instrumental utilization refers to the application of research findings in practice and conceptual utilization infers a change in cognition and thinking that does not necessarily lead to a change in behaviour (Squires et al. 2011). The understanding of the relationship between instrumental and conceptual knowledge by clinical practice nurses may be particularly important to the understanding of how pluralistic knowledge sources are valued, adopted and used in nursing practice.

Nursing researchers have also demonstrated the importance of individual and organization factors in the understanding of how nurses use research in clinical practice. A recent

systematic review demonstrated that clinical specialties were a strong determinant of RU by nurses. Clinical practice nurses working in clinical specialty areas (e.g. intensive care) vs. nurses employed in general practice areas were more likely to engage in RU activities (Squires, Estabrooks, Gustavsson, & Wallin, 2011). The importance of organization culture (defined as the implicit values and assumptions of a group) was revealed by Scott and Pollock in 2008 as their research study demonstrated the importance of organizational culture in RU by Canadian pediatric critical care nurses.

A debate exists in contemporary Western society as to what is considered legitimate knowledge. This debate is characterized by tensions between knowledge grounded in more tacit knowledge sources and knowledge that is entrenched within science (Weiler, 2009). It is hypothesized that core factors within healthcare organizations create a social climate that places a higher value on the use of empirical knowledge sources in clinical nursing practice but does not negate the perceived importance of the use of other knowledge sources by clinical practice nurses. To date, there is a paucity of nursing research that attempts to understand the role health-care organizations may play in the creation, reproduction and transformation of knowledge and the relationship of nurses' perceptions of structural empowerment (SE) and knowledge sources they perceive to be important in their daily work and in their perceived ideal work environments.

Definitions and Research Assumptions

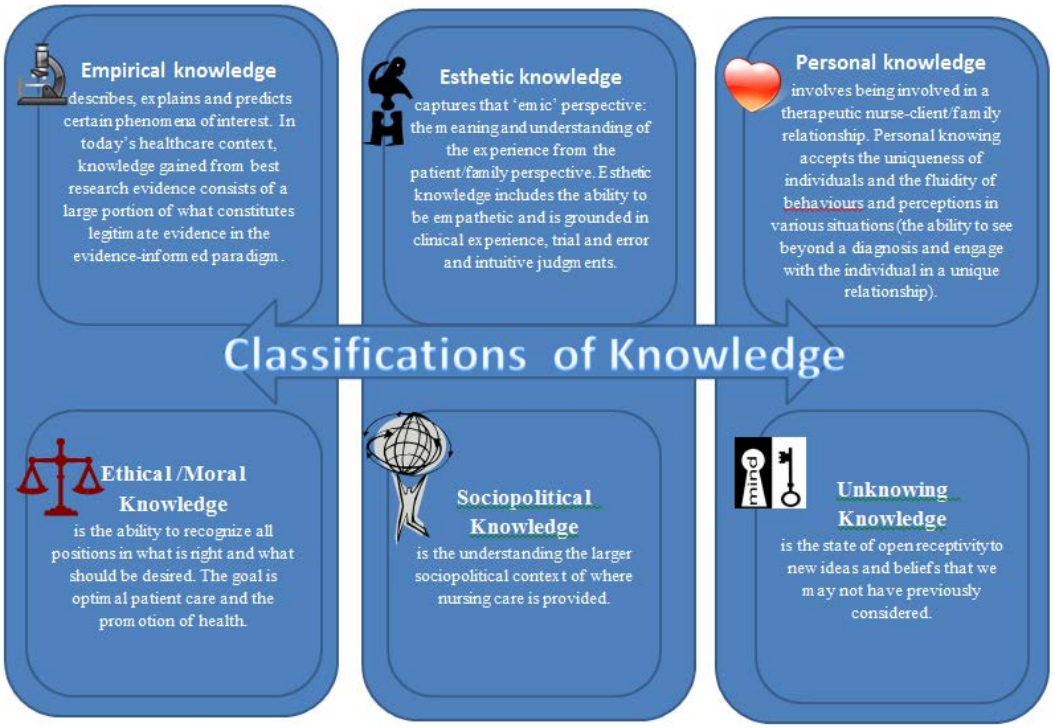
For clarity, key concepts integral to this dissertation are defined and include: (a) knowledge, (b) evidence, (c) knowledge sources, (d) most likely scenario, (e) most desirable scenario, (f) structural empowerment and (g) tension. *Knowledge* encompasses the beliefs or judgments that result from the analysis of information (Canadian Mental Health Association, 2014). Knowledge encompasses human and non-human attributes, the mental attributes and the

exercise of judgment and interaction between an individual and a particular context (Ferlie, 2006).

Evidence may be best understood as information that has been refined and that has perceived value. Evidence is not identical to knowledge until it has been applied and used, which requires human interpretation. The term knowledge in action refers to "evidence that has been converted through social processes into locally accepted knowledge, which is then put into use and leads to evidence-based change in working practices" (Ferlie, 2006, p. 190).

The six *knowledge sources* addressed in this dissertation are described in Figure 1. Four of the six knowledge sources described in Figure 1 are derived from Carper's (1978) seminal work on the four patterns of knowing (empirical, esthetic, ethics and personal knowing). Unknowing and sociopolitical are the fifth and sixth patterns of knowing (Munhall, 1993; White, 1995).

Figure 1: Classifications of Knowledge Sources



Most likely and *most desirable* scenarios are terms contained within the clinical vignettes. Clinical practice nurses indicated the perceived importance of six knowledge sources (empirical, esthetic, moral/ethical, personal, sociopolitical and unknowing) first in a 'most likely' hypothetical scenario and then in a 'most desirable' hypothetical scenario. In a 'most likely' scenario, clinical practice nurses were asked to rank their perceived importance of six knowledge sources based on how they would most likely respond to the clinical situation on a typical work day. In the 'most desirable' scenario, clinical practice nurses were asked to re-examine their perceived importance of the six knowledge sources based on what they consider to be an ideal state (i.e. the ability to practice in a context that is perceived to be ideal). It was important in this study to distinguish between clinical practice nurses' perceived importance of the six knowledge sources in the 'most likely' and 'most desirable' scenario to determine how these differences related to structural empowerment and the potential consequences (tensions) for clinical practice nurses when inconsistencies existed between their 'most likely' and 'most desirable' knowledge sources used in clinical practice.

Structural empowerment (SE) is about successfully getting things done and providing nurses with the necessary tools to complete their work. According to Laschinger (1996) and Lankshear, Kerr, Laschinger and Wong (2013), a workplace that is considered empowered facilitates staff access to four empowerment structures: information, resources, support, and opportunities to learn and grow. Access to empowerment structures is enhanced by specific job characteristics (formal power) and interpersonal relationships (informal power). Table 1 is the definitions of the empowerment structures. Last, *tension*, for the purposes of this study, is conceived as mental or emotional strain, either brief or prolonged, that had an affect on the nurse

participants' emotional or physical well-being (adapted from the American® Heritage Stedman's Medical Dictionary, 2014).

Table 1: Definitions of Empowerment Structures (Laschinger, 1996; Laschinger, Finegan, Shamian, & Wilk, 2001)

Information	Information refers to having the formal and informal knowledge that is necessary to be effective in the workplace (technical knowledge and expertise required to accomplish the job and an understanding of organizational policies and decisions) (Kanter, 1977, 1993 as cited in Laschinger, 1996).
Resources	Relates to one's ability to acquire the financial means, materials, time, and supplies required to do the work (Kanter, 1977, 1993 as cited in Laschinger, 1996).
Support	Involves receiving feedback and guidance from subordinates, peers, and superiors. High levels of structural empowerment come from access to these social structures in the work setting (Kanter, 1977, 1993 as cited in Laschinger, 1996).
Opportunity	Opportunities for learning, growth, and advancement in the organization results in greater employee satisfaction, commitment, and productivity. Employees in positions with few opportunities feel stuck in their jobs, resulting in lower career aspirations and lower commitment
Informal Power	Derived from alliances formed in an organization this allows individuals to get the job done (Kanter, 1977 as cited in Laschinger, 1996)
Formal Power	Formal power is evident when jobs are visible, in line with the vision of the organization and allows for latitude and discretion in decision making (Kanter, 1977 as cited in Laschinger, 1996)

Five research assumptions guided and directed this dissertation and were derived from a compilation of research sources (Broom, Adams, & Tovey, 2009; Dopson & Fitzgerald, 2006; Foucault, 1977; Sandars & Heller, 2006; van Dijk, 2008). These include:

1) What constitutes evidence is fluid and is dependant on the sociopolitical context. Empirical knowledge (randomized control trials, systematic reviews and meta analyses) is highly regarded, valued and used to support patient care decisions in healthcare organizations.

2) Clinical nursing practice is described in relationship to the environment or its surrounding conditions and consequences.

3) Organizational structures influence nursing behaviours within healthcare organizations.

4) It is possible to use a variety of knowledge sources in clinical nursing practice. The success of the integration of multiple knowledge sources is largely dependent on the level of organizational support.

5) Knowledge acquisition is a process that is dynamic and evolves with each unique experience. Knowledge may be derived through inductive or deductive processes and includes for the purposes of the dissertation: empirical, ethical/moral, socio-political, personal, esthetic or unknowing knowledge sources.

Purpose of the Study

The purpose of this exploratory mixed methods study is to determine knowledge sources that are important to clinical practice nurses in a hypothetical 'most likely' and a 'most desirable' clinical scenario and to determine the association between empowerment structures (opportunity, information, support, resources, informal and formal power) and the nurse participants' perceived importance of knowledge sources. Qualitative interview data facilitated a rich description of clinical practice nurses' lived experiences in how they value and use various knowledge sources in clinical practice, providing valuable insight into the interpretation of the quantitative measures (clinical vignettes and Conditions for Work Effectiveness Questionnaire-II).

Secondary research objectives are: (a) to determine if the knowledge source unknowing (which has largely not been validated in the nursing literature) was perceived as important by the nurse participants and (b) to understand the consequences, both personal and professional, for clinical practice nurses when discrepancies existed between their current clinical realities and their ideal work environment as it relates to the use of knowledge sources in clinical practice.

Research Questions

Four research questions are addressed in this dissertation and include:

1) For clinical practice nurses', employed with the Adult Critical Care and Cardiac Sciences Programs within the Winnipeg Regional Health Authority (WRHA), what is the perceived importance of various knowledge sources in a 'most likely' and a 'most desirable' clinical encounter as depicted in a clinical vignette? A secondary objective is to determine if the knowledge source 'unknowing' was understood and perceived as important by the nurse participants.

Hypothesis: Nurses would perceive empirical knowledge to be the most important knowledge source.

2) What is the relationship between the total empowerment scores (obtained from the Conditions for Work Effectiveness Questionnaire-II) and the level of congruence in clinical practice nurses' perceived importance of knowledge sources in a 'most likely' and 'most desirable' clinical encounter as depicted in a clinical vignette?

Hypothesis: Lower total structural empowerment scores are associated with larger differences between the perceived importance of knowledge sources (i.e. larger differences between the 'most likely' score and the 'most desirable' score for perceived importance of each knowledge source).

3) What is the relationship between empowerment structures obtained from the Conditions for Work Effectiveness Questionnaire-II (opportunity, information, support, resources and formal and informal power) and nurse participants' perceived importance of knowledge sources as depicted in 'the most likely' or 'most desirable' scenarios contained within the clinical vignette?

4) What are the lived experiences of nurses as it relates to the use of pluralistic knowledge sources and the potential consequences (tensions) described by clinical practice nurses when their preferred knowledge sources do not match clinical realities?

Study Significance

The results of this study will contribute to the debate related to the hierarchical privileging of knowledge associated with EIP. To date, there is a paucity of nursing research that addresses this debate from a clinical practice nurse's perspective. The results will offer research contributions as it relates to clinical practice nurses' perceived importance of the use of various knowledge sources in their typical work environments. The structure of the clinical vignettes, i.e. the 'most likely' and the 'most desirable' scenarios, offer creative contributions to the literature as it relates to the congruence or incongruence in nurses' perceptions of the importance of knowledge sources in clinical practice nurses' current and ideal practice environments.

Study results may also contribute to the current RU and knowledge translation literature. Findings may provide further understanding of the relationship between instrumental and conceptual RU. The understanding of instrumental and conceptual RU may be particularly important to the understanding of the consequences for clinical practice nurses' when their preferred knowledge sources do not match clinical realities.

The findings of this study also contribute to the current understanding of the necessary components of the knowledge resource base to guide nursing practice. A broader, comprehensive perspective may offer a new and more balanced understanding of knowledge sources important to clinical practice nurses in the provision of quality patient care. This knowledge resource base may clearly illustrate the legitimacy of potentially less valued knowledge sources that are less visible such as esthetic knowledge (The Canadian Mental Health Association, 2008).

Lastly, organizational context provides the foundation for how knowledge is valued and legitimized in nursing practice and shapes what types of knowledge guide practice (Dopson & Fitzgerald, 2006). Findings from this study offer contributions to the current research related to empowerment. In particular, this study explores the relationship between clinical practice nurses' perceived importance of knowledge sources and the relationship to structural empowerment and its six components (opportunity, information, support, resources, and formal and informal power).

CHAPTER 2: REVIEW OF THE LITERATURE & CONCEPTUAL FRAMEWORK

This section is a review of the relevant research literature related to this dissertation. The following headings are used to guide this discussion: (a) the link between the Canadian healthcare System and EIP, (b) the move to evidence-informed practice, (c) reflections related to the core assumptions of EIP, (d) gaps in the EIP process, (e) knowledge sources: ways of knowing, (f) the debate in nursing: sources of knowledge and (g) situating knowledge as a social process.

The Link between the Canadian Healthcare System and EIP

Access to healthcare is essential to one's well-being, quality of life and life expectancy. The First Ministers' (2003) and (2004) Accords to strengthen and improve the Canadian healthcare system acknowledged the difficulties inherent in attempts to improve the current system (Health Council of Canada, 2011). The Health Council of Canada's (2011) progress report indicated key areas that were believed to strengthen the Canadian healthcare system such as a reduction in wait times, pharmaceutical management, integration of an electronic health record, and the use of tele-triage and health innovation. Evidence-informed strategies that were partially informed by empirical knowledge were used to address the key indicators. For example guidelines and decision support tools were used to address wait times (Health Canada, 2004; Health Council of Canada, 2011).

Canada spends approximately 11.2% of its gross domestic product on healthcare. The public sector pays approximately 70% or $148 billion of healthcare costs while 30% or $63 billion comes from the private sector. The primary drivers of healthcare expenditures include professional reimbursement costs and the escalating use of healthcare resources such as medical

procedures and medications, which increase overall healthcare costs (Canadian Institute of Health Information, 2013).

As healthcare costs rise, Canada is faced with an inconsistency in the quality of patient care. Accumulating evidence from Canada and elsewhere indicates that an appreciable number of patients are harmed during their hospital stays (Adams et al., 2008). Baker et al. in 2004 published a study conducted at Canadian hospitals in 2000. This study revealed the incidence of adverse events among hospital patients in Canada was 7.5% (excluding pediatric, obstetric or psychiatric admissions). Of the 2.5 million Canadian hospital admissions for the year 2000, approximately 185,000 were associated with adverse events, with a large percentage being potentially preventable (Baker et al., 2004).

Patient safety is paramount in the provision of nursing care. In his satiric screenplay, *The Hospital,* Paddy Chayefsky writes “the hospital was to do all the killing for me…They died as ritual victims of their own institutions” (as cited in Schulman, 2004, p. 39). Efforts to address patient safety within Canadian healthcare organizations are increasing. For example, The Canadian Association of Schools of Nursing has adopted accreditation standards to provide nursing students greater opportunity to develop the necessary knowledge and skills to provide safe patient care (Canadian Association of Schools of Nursing, 2013).

Patient safety is about safe care; ensuring nursing decisions are based on the best available research evidence, thus ensuring (at least in theory) that nursing care is safe, effective and efficient. Although partially based on patients’ perceptions and experiences, the measurement of the success of patient safety is predominately measured more directly through empirical data.. For example, the Canadian Health Outcomes for Better Information and Care (C-HOBIC) is a project that uses standardized measures to link patient outcomes with nursing

interventions. From a healthcare system perspective this information will support patient care, increase the use of informatics and support professional accountability (Canadian Nurses Association, 2014).

Katherine Fierlbeck's (2000) review of Tuohy's (1999) book *Accidental Logics: The Dynamics of Change in the Health Care Arena in the United States, Britain, and Canada* suggests the nature of healthcare is influenced by such factors as the 'balance of influence' among stakeholders and the 'mix of instruments' of social control. These factors explain that significant change is possible when stakeholders have the authority and desire to evoke significant change. The window of change is limited in that, in most instances there are long periods when health policy is constrained to what Tuohy (1999) describes as the internal logic of each individual state (Fierlbeck, 2000).

Globalization, consumerism, changing demographics, and advancements in medical technologies and treatments are challenging the relationship and accountability structures of governments in the healthcare arena (Adams et al., 2008). Global knowledge-based economies and global market competition have led to changes in how healthcare providers not only understand but use knowledge, as well as how healthcare providers may perform in the future healthcare context (Kreis-Hoyer & Gruenber-Bochard, 2006; Spenceley, O'Leary, Chizawsky, Ross, & Estabrooks, 2008).

According to Tuohy (2003), a networked governance model is required to navigate the complexities inherent in large systems. In such a model, relationships are thought of as networks where boundaries between private and public sectors are not sharply defined and key stakeholders lead by negotiation and persuasion rather than command and control. Measurement

and reporting are essential to accountability, however, in such a governance model, the importance of professional autonomy and discretion is critical.

In summary, there are opportunities to improve upon the effectiveness and efficiencies within the healthcare system. Due to the complexities associated with the healthcare system, strategic decisions affecting service delivery and underlying measurement of system effectiveness and efficiencies are required. The value dimensions of health such as costs, clinical quality, safety and service quality need to be considered in healthcare policy decision making. Measures of healthcare and the approach such as evidence-informed practice are typically focused on the outcome of episodic treatment (Adams et al., 2008). The understanding of the types and scope of value added healthcare services are essential to real word healthcare practices and may be best understood with a wide range of data and knowledge sources. Transformation of the current Canadian healthcare system is possible in order to do the right thing: to address widening socioeconomic disparities, limited resources, technological advancements and consumer expectations (World Health Organization, 2008; Canadian Medical Association, 2011).

The Move to Evidence-Informed Practice

The emergence of evidence-informed practice first sought expression in medicine. The practice gained widespread momentum in the 1990's when a series of articles were published by an evidence-based medicine working group (Canadian Nurses Association, 2014). According to Sackett et al. (1996), evidence-based medicine is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (p. 71). Melnyk, Fineout-Overholt, Stillwell and Williamson (2010) expanded on Sackett et al.'s (1996) definition of evidence-based practice in a nursing context as a "problem-solving approach to the

delivery of care that integrates the evidence from research studies and patient care data and combines it with clinical expertise and patient preferences and values" (p. 51).

From evidence-based to evidence-informed practice

More recently, the term evidence-based has been replaced by evidence-informed in an attempt to move beyond resistance to the notion that evidence-based medicine ignores clinical expertise and knowledge derived from a variety of knowledge sources. The term evidence informed acknowledges that a multitude of factors such as the availability of existing resources and patient preferences and values contribute to decision making (The Canadian Nurses Association, 2014).

In a continually evolving profession, nursing has witnessed the adoption of EIP as perhaps the most significant change in the past decade. Factors that have contributed to the adoption of the EIP process by the nursing profession include service quality, accessibility of healthcare, the desire of the nursing profession to obtain legitimacy, and the rising costs associated with healthcare (Hamer, 2000; Melnyk, Fineout-Overholt, Stone, & Ackerman, 2000; Mitchell, 1999; Newhouse, Dearholt, Poe, Pugh, & White, 2005). Clearly, these factors are not the sole responsibility of nurses, although nurses must be part of the team and respond to these systematic issues (Morin, 2010).

As a problem solving process approach to patient care decision making, EIP is believed to positively influence patient, nurse and organizational outcomes. When situated in a healthcare setting that promotes best practices, the adoption of evidence-informed processes should reduce variations in nursing practice. Such a practice environment has greater consistencies in the delivery of patient care services and contributes to high quality patient outcomes (Wallen et al., 2010; Wells, Free & Adams, 2007). Moreover, an EIP environment may lead to positive

outcomes for nurses as well as for the organization and includes increased job satisfaction, reduction in work stress, increased nurse autonomy and cost savings (Winch, Creedy & Chaboyer, 2002).

The debate

Scientific rationality provides the foundation for the 'evidence' in EIP (Hamer, 2000). As a decision making process, EIP is based on the premise of rational decision making and is at times referred to in the literature as a movement or framework; but is perhaps best understood as a process that is rooted in the biomedical paradigm.

Within the current Canadian healthcare context, scientific and rational thought are the cornerstones of 'real thinking' and are deemed not only appropriate but preferable to guide healthcare decision making (Cheek & Porter, 1997; Hancock & Easen, 2004; Holmes, Murray, Perron, & Rail, 2006). Knowledge derived from empirical data is the product of rational thought and is perceived to be both objective and verifiable, leading to the potential epistemological priority of one knowledge source over others (Berwick, 2005; Cohen, Stavri, & Hersh, 2004; Holmes, Perron & O'Byrne, 2006; Holmes, Gastaldo, & Perron, 2007).

The benefits and limitations of the adoption of EIP by the nursing profession have been debated and viewed by some nursing scholars as a means of improving upon the professional status within the discipline (Cranley, Doran, Tourangeau, Kushniruk, & Nagle, 2009; Heath, 1998). Holmes, Gastaldo and Perron (2007) believe that a hierarchical privileging of knowledge is consistent within the EIP model. This privileging of knowledge may be potentially counterproductive as knowledge obtained from randomized control trials and systematic reviews may not necessarily 'fit' all patient situations and contexts (Holmes, Gastaldo, & Perron, 2007).

The ranking and ordering of knowledge associated with EIP may lead to misconceptions related to good and bad knowledge and may in fact silence or marginalize the voices of others. Truth may become a function of what is valued, legitimized, articulated, and used within clinical nursing practice (Holmes, Gastaldo, & Perron, 2007). Lived experiences, judgments, values and clinical experience of nurses caring for patients in everyday life experiences may be obscured or devalued as legitimate knowledge sources to guide patient care (Broom, Adams, & Tovey, 2009). This may also limit the use and credibility of other research methods to advance nursing practice (Dzurec, 1989; McCabe & Holmes, 2009).

Greenhalgh and colleagues (2014) acknowledge the benefits as well as the negative, unintended consequences associated with EIP. The authors advocate for a different approach to evidence-based healthcare with a focus on 'real evidence-based healthcare'. Such an approach should provide clinicians with useable evidence from pluralistic knowledge sources that are used in a safe, logical and coherent manner acknowledging the importance of context, clinical expertise and patient values and preferences. This ' real world' evidence informed practice supports ethical care as a top priority, characterized by expert judgment, shared decision making and builds upon strong care provider patient professional relationships (Greenhalgh et al., 2014).

From a clinical practice nurse's perspective, the lack of clarity related to legitimate knowledge to guide patient care may have profound implications for the nurse. Clinical practice nurses may experience confusion as to what exactly constitutes knowledge in practice and this lack of conceptual clarity may narrow the scope of care afforded to patients (Rolfe & Gardner, 2006). Nurses may attempt to gain knowledge through traditional medical tasks and skills in order to be viewed as knowledgeable (Manias & Street, 2001). A disconnect may develop between a clinical practice nurse's perception of ideal practice versus the realities of everyday

practice (Belenky, Clinchy, Goldberger, & Tarule, 1986; Carper, 1978; Estabrooks, Rutakumwa, O'Leary, K., Profetto-McGrath, Levers, & Scott-Findlay, 2005; Giuliano, Tyer-Viola, & Lopez, 2005; Mitchell, 1999; Thompson, McCaughan, Cullum, Sheldon, Mulhall, & Thompson, 2001).

Understanding how social and cognitive boundaries influence the reproduction and transformation of knowledge may be more important than understanding the nature of knowledge itself. The privileging of knowledge is rooted in the social and cognitive boundaries of healthcare professions and may lead to barriers to the use of multiple knowledge sources within healthcare teams. This in turn, may lead to a lack of interdisciplinary collaboration and may limit the integration of multiple knowledge sources into practice (Ferlie, 2006, Griffiths, 2005; Melnyk, Fineout-Overholt, Fischbeck Feinstein, Li, Small, Wilcox, & Kraus, 2004).

Ferlie (2006) discussed the importance of social and cognitive boundaries in exerting a strong influence on the types of knowledge sources deemed credible by different healthcare professionals. Professional groups have distinct membership, affiliations and experiences at local, regional and national levels. The socialization and cognitive boundaries of healthcare groups may limit the diffusion and acceptance of various knowledge sources across disciplines and within interdisciplinary teams.

EIP within a post-positivist framework

Rationalism, as determined by the dominant scientific worldview, deems what is acceptable in healthcare; from treatment decisions to evaluation of the effectiveness of care. The goal of rational thought is to speak the truth through objective scientific measurements which may be verified independent of a person (Kearney & Kaplan, 1997; McNamara, 2009; Tonelli, 2006).

Post-positivists acknowledge that all knowledge is contestable, based on human conjectures, and is aligned with the tenets of positivism: ontological realism, the desirability of objective truths, and the adoption of experimental methods. Post-positivists differ from positivists in that the former believe the attempt to separate facts from human values is misguided and that all knowledge is contestable (Howlett, Ramesh, & Perl, 2009).

Empirical knowledge is the cornerstone of post-positivist philosophy and the perpetuation of this knowledge source is understood as being embedded within existing social processes. According to Dopson and Fitzgerald (2006), context is a socially constructed phenomenon and is understood through the exploration of existing power relationships and social structures that serve to maintain the status quo. Organizations such as healthcare, and social structures, are interdependent and exert a strong influence on human actions. However, individuals, as active recipients may exert their own values and behaviours (Dopson & Fitzgerald, 2006).

The legitimization of what constitutes ‘real’ nursing knowledge begins with the social and cognitive influences within nursing education programs. Nursing curriculum, for the most part, follows the normal science paradigm. Nursing students may have limited guidance or exposure to and lack opportunities to engage in discourse related to the appropriate use of multiple knowledge sources in clinical practice. Moreover, nursing students may lack the ability, tools, or confidence to integrate multiple sources of knowledge in real life clinical encounters. If such opportunities do not occur, the valuing of empirical knowledge over other knowledge sources may occur as empirical knowledge becomes entrenched within the nursing educational system maintaining the status quo (Eubanks, Parish & Smith, 1997).

Knowledge as power

The concept of power may partially explain how social structures perpetuate the status quo, i.e. the biomedical model influence in nursing care and decision-making. The adoption and widespread acceptance of EIP within the nursing profession may be linked to a broader social agenda (Holmes, Perron, & O'Byrne, 2006; Mitchell, 1999). According to Holmes, Gastaldo and Perron (2007), the legitimization of a particular knowledge source over others may help to secure privileged positions and maintains the power and authority of those individuals who have vested interests. The presentation of the evidence-informed agenda as being politically neutral is perhaps a strategic reassertion of those individuals who are viewed as powerful within society (Broom, Adams, & Tovey, 2009).

Structures within organizations determine power as patterns within organizations that identify what is said, unsaid, done or not done (Corra, 2005; McKinlay, Link, Marceau, O'Donnell, Arber, Adams, & Lutfey, 2006). The understanding of how power is related to social structure is critical to the understanding of how such processes may influence nursing practice and the construction of nursing knowledge (Brown, Wickline, Ecoff, & Glaser, 2009; Corra, 2005; McKinlay, Link, Marceau, O'Donnell, Arber, Adams, & Lutfey, 2006; Tilah, 1996; Waeraas, 2007).

Reflections Related to Core Assumptions of EIP

Rationality: assumption #1

The philosophical stance of EIP is part of the criticism attached to it. Thomas Kuhn (1970) described a paradigm as a conceptual box in which researchers attempt to make sense of phenomena. From an EIP process, evidence is not value free, rather scientific inquiry is influenced by the persuasive paradigm at a particular time (in this instance the biomedical

paradigm). Normal science is perpetuated through strong validation of shared beliefs and values by strong community commitment (Stanford Encyclopedia of Philosophy, 2011).

Researchers have debated the potential philosophical issues related to EIP (Cohen, Stavri, & Hersh, 2004; Sehon & Stanley, 2003). The primary objection is based on the philosophical underpinnings of empiricism. From an empirical perspective, observations may be made independently of bias; observations are objective within themselves. By relying primarily on the truthfulness of empiric data as a philosophical basis, evidence-informed practice may potentially ignore the importance of theory building and theory testing and the understanding of physiological processes of disease coupled with clinical experience (Cohen, Stavri, & Hersh, 2004).

The influence of empirical knowledge and hypothesis testing on nursing practice is logical (Gortner, 1990). Knowledge cannot be viewed as a dichotomy; one versus another. The knowledge source(s) that guide nursing practice depend on the clinical questions being investigated and the individual clinical encounter. For example, several knowledge sources may inform a research question related to treatment effectiveness: empirical knowledge to determine superiority of treatment A over treatment B, and qualitative data to understand the lived experiences of those individuals who are the recipients of both treatments.

Hierarchy of evidence: assumption #2

It is argued that valuing and legitimizing one knowledge source over others is not appropriate in all clinical contexts. This argument is based on the premise that no one knowledge source is able to identify all facts and that it is not possible to gain a complete picture of reality. What constitutes truth is often referred to within a philosophical context as realism and anti-realism. For a realist, truth is objective and context neutral; the picture that science provides is

true and accurate. Alternatively, the anti-realist believes in human beings as the knowers of truth. Truth is processed by individuals in the forms of ideas, thoughts, theories and reasoning. Human consciousness is part of truth, not separate from it (Polifroni & Welch, 1999).

The polarity between the philosophy assumptions associated with realism and anti-realism, and empiricism versus interpretivism, has perhaps contributed to a 'philosophical divide' among nursing scholars as to the most appropriate framework to support nursing practice. The fundamental issue relates to epistemology and ontology as it pertains to the purpose of nursing: caring for human beings in relation to the environment and health (Polifroni & Welch, 1999; Schultz & Meleis, 1988). Suggested solutions to this philosophical divide include the adoption of critical and feminist theories to epistemic diversity to support practice (Forbes, King, Kushner, Letourneau, Myrick & Profetto-McGrath, 1999; Miles, Polychronis, & Grey, 2006; Mitchell & Cody, 1992; Polifroni & Welch, 1999). Epistemic diversity is not about tolerating philosophical differences but about the entrenchment of diverse epistemologies in the practice of nursing (Georges, 2003).

The argument related to the hierarchical privileging of knowledge in EIP is not well substantiated. EIP acknowledges a diversity of knowledge sources in clinical decision making. Ultimately, clinical decisions are based on the best available evidence, taking into account the clinical situation, context and resources. Evidence-informed decision making offers key benefits to patients including the most effective and cost effective interventions and therapies, prudent use of healthcare resources, and potentially improved outcomes at many levels including the patient, the nurse, the organization, and the community (National Collaborating Centre for Methods and Tools, 2012).

Structure and agency: assumption #3

The legitimization of knowledge occurs through the adoption of a dominant worldview, mainly post-positivism in Western societies. Post-positivists believe that scientific knowledge is not unchallengeable and that it is based on human conjectures. However, post-positivists also preserve the tenets of positivism: ontological realism, the desirability of objective truths, and the adoption of experimental methods (Howlett, Ramesh, & Perl, 2009).

The continued valuing of empirical knowledge occurs through social processes. Context is socially constructed and can be observed through the exploration of power relationships and social structures that serve to solidify the status quo (Dopson & Fitzgerald, 2006). Although organizational structures and social processes largely influence human behaviours, human beings are not passive recipients (Dopson & Fitzgerald, 2006).

Social structures (deep generative mechanisms) influence identity and agency. Social structures play a powerful role in shaping human behaviour. Individuals may exert free will in that they do have choice, albeit a constrained one. Social structures exist independently of human beings and may exert influence without one's knowledge, but are considered social as they depend on human interactions. Structural factors (e.g. rules, class, etc) shape and lead to observable behavioural patterns. To enter into a paid labor market, nurses must engage with the existing social structures. Through this engagement, structure and agents reproduce or transform (Birkett, 2011).

According to Archer (1995), structure and agency, although interdependent, have separate casual effects. At any particular moment, social structures limit and enable individuals, leading to expected or unexpected consequences, which perpetuate the status quo or lead to transformation of a system. The resulting structure provides the foundation for this cycle to be perpetuated.

Archer (1995) coined the term “morphogenetic cycle” to depict the interaction between structure and agency. Structural conditioning, the first part of the cycle, refers to a priori distribution of social resources (e.g. social networks and financial resources). Agency or identity occur in the context of structural conditioning, and may reproduce or transform social structures. While human beings have the right to choice, choice is constrained based on one’s original structural positioning.

Gaps in EIP Processes

Researchers have suggested that the lack of conceptual clarity and associated definitions, the inability to define the practice of nursing, and the ways organizational context influences behaviours are not well addressed within EIP. The lack of conceptual clarity and agreement on definitions associated with EIP (such as evidence and information) may create confusion for healthcare providers such as nurses. Scott-Findlay and Pollock (2004) have argued that evidence and knowledge are not synonymous. Evidence is knowledge that has undergone testing and that is deemed creditable. Knowledge is relegated to the personal domain, a by product of one’s own mental picture.

The definitions associated with EIP are derived from normal science and the biomedical paradigm. These factors may curtail critical thinking, creative discovery and new ways of thinking about health and illness. For example, information management techniques such as clinical pathways are powerful in ordering and standardizing complex care. Patient outcomes are predetermined and a separation of the means and ends may occur, leaving one perhaps indifferent to the means. A potential dissociation between means and ends may occur (e.g. suffering if context and individual circumstances are not considered) (Avery, 2009; Benner, 2000; Benner, 1984).

Nurses are called upon to articulate their practice (Wynd, 2003). The inability of other healthcare providers to clearly understand the contributions of nurses to healthcare conversations may lead to confusion related to the contributions of nurses to patient care (Canam, 2008). Part of the difficulty in the articulation of nursing practice is related to the healthcare context and potential imbalances of power among healthcare provider groups.

The importance of connecting knowledge that directs nursing care to the social context where nursing is situated was described by Canam (2008) in her qualitative study of clinical nurse specialist practices. Canam (2008) described the practice environment of nurse participants as one that was dominated by the biomedical model of care, where there was a privileging of objective/technical knowledge over other knowledge sources. The flow and legitimization of knowledge was controlled by those in power who had the ability to impede or facilitate diffusion of knowledge. Nurses became silent as they did not believe their ideas or perspectives would be valued or deemed credible by other team members.

A knowledge-based rationale for actions and decisions was described by Canam (2008) as a means in which nurses may contribute important knowledge to patient care decisions and where power is equally distributed among healthcare professionals. Nurses provide knowledge based rationale for their actions from within their own social contexts. The types of knowledge sources used are context dependent and provide a rationale for plans of care. “In moving towards a knowledge based rational for relational care, nurses can move beyond the binary thinking of technical knowledge as medicine’s domain and relational knowledge as nursing’s domain” (Canam, 2008, p. 304). This approach allows for a collaborative approach to patient care and a broadening of the kinds of knowledge and evidence required to impact positively on patients and

organizations. Unless this occurs, the reproduction of the status quo (i.e. the perpetuation of empirical knowledge) and the maintenance of power relationships may occur (Canam, 2008).

Knowledge Sources: Ways of Knowing

Epistemology is the study of knowledge. In 1978, Barbara Carper identified four patterns of knowing: empirical, esthetic, moral/ethical and personal knowing. Carper's paper remains a valuable contribution to nursing epistemology (Estabrooks, Rutakumwa, O'Leary, Profetto-McGrath, Milner, Levers, & Scott-Findlay, 2005; Freshwater & Stickley, 2004; Paley, Cheyne, Dalgleish, Duncan & Niven, 2007). The fifth and sixth patterns of knowing were later added to Carper's (1978) taxonomy and include sociopolitical knowing (White, 1995) and unknowing (Munhall, 1993).

The concept of emancipatory knowing has been proposed as the seventh knowledge source. This knowledge source articulated by Chinn and Kramer (2008) builds upon other knowledge sources in an attempt to influence workplace changes to impact on patient care outcomes. Emancipatory knowing was not included as a knowledge source in this dissertation as it appears more amendable to nurse leaders as they have the ability to re-direct energies and resources towards long term strategic outcomes (as cited in Jackson et al., 2009).

Other knowledge sources that may be important to nurses' work include tacit knowledge, reflection, intuition, and clinical experience (Gobet & Chassy, 2008; Lamond & Thompson, 2000; Lyneham, Parkinson & Denholm, 2008; Mantzoukas, & Watkinson, 2008; Schultz & Meleis, 1988). The following headings will guide this discussion: (a) empirical knowledge, (b) esthetic knowledge, (c) ethical knowledge, (d) personal knowledge, (e) sociopolitical knowledge, and (f) unknowing as a knowledge source. Table 2 is a review of the definitions of the knowledge sources that guided this dissertation.

Empirical knowledge

Barbara Carper (1978) described empirics as the science of nursing. Empirical knowing is based on the assumption that this knowledge source is available through a variety of senses including seeing, touching and hearing. For Carper (1978), empiricism is factual, objective and verifiable information that is used to describe, predict or explain phenomena. This knowledge source is described as being essential to the understanding of the empirical world; empiricism is a view of knowledge created by the human mind and scientifically-based theories are explanatory in nature (Schumacher & Gortner, 1992). The critical question is "what is it and how does it work?" (Chinn & Kramer, 1999, p. 9). For example, a patient is assessed based on physical symptoms including blood pressure, heart rate and diagnostic/laboratory findings.

Esthetic knowledge

Esthetics focuses on creative processes and the meaning of experiences. Experience is contextual and knowledge is acquired through perception, intuition, and vision (Carper, 1978). Esthetics knowing brings forth a humanistic and holistic approach to caring, as the patient is treated as a whole with the whole being greater than the sums of his/her parts (Jenny & Logan, 1992). Esthetics answers the question "What does this mean?" (Chinn & Kramer, 1999, p. 9). For example, a family member of a patient asks the nurse why his mother was not offered a certain procedure. The nurse draws on past experiences in trying to understand the importance of the question from the family member's perspective.

Several authors view intuition as part of esthetic knowing and intuitive knowing may be a key characteristic of a clinical expert (Gobet & Chassy, 2008; Lamond & Thompson, 2000; Lyneham, Parkinson & Denholm, 2008). The role and validity of intuition as a legitimate knowledge source has been debated in the nursing literature. Some authors such as Gobet and

Chassy (2008) believe the concept of intuition should be further researched to gain conceptual clarity while other authors such as Benner (1984) have largely convinced the nursing profession of the validity of intuition. It is logical that intuition may not be a source of knowledge in itself, but rather used to achieve esthetic knowledge as described by Carper (1978).

As with intuition, the capacity to love provides a stable platform to the esthetic way of knowing. The ability to give love is viewed as perhaps one of the most important aspects of the nurse-patient relationship. The importance of love in therapeutic nurse-patient relationships has been well documented and ensures the centrality of the relationship. It is argued that without love the value of clinical outcomes may not be significant (Stickley & Freshwater, 2002). The goal of knowledge arising out of love is to reunite and reconstruct the self with the world (Bunkers, 2000).

Ethical knowledge

Ethics is concerned with doing the right thing: in this context, what is right and wrong in the care of patients. Knowledge of morality goes beyond ethical principles and includes the voluntary actions that are subject to scrutiny. Codes of Ethics are useful to nurses in helping them make clinical decisions. However, these codes do not provide nurses with the answers to the everyday moral circumstances they encounter in clinical practice. Ethics is considered the “mind work” of moral principles that allows individuals to make decisions about what is right (Carper, 1978). Ethics answers the question “Is this right? Is this responsible?” (Chinn & Kramer, 1999, p. 9). For example, providing nursing care based on what is acceptable and agreed to by the patient.

According to Tarlier (2004), ethical knowledge allows nurses the possibility to build responsive relationships with patients. Such relationships are built on respect, trust and

mutuality. Thus, “responsive nurse-patient relationships both reflect ethical nursing knowledge, and provide the link between outcomes and ethical knowledge in nursing” (Tarlier, 2004, p. 231).

Personal knowledge

Personal knowing involves interactions and interpersonal relationships: getting to know one’s self and others as human beings. Personal knowing is the ability to understand another person in their world as if the nurse were in it (Carper, 1978). Personal knowledge is difficult to articulate and teach, but is, perhaps, one of the most essential to the understanding of health and nursing care. Carper (1978) suggested that the quality of nurse-patient relationships may influence patient outcomes. The way that nurses situate themselves and use and apply personal in nurse-patient relationships is a focus of nursing research that was perceived by Carper (1978) as not being particularly well researched. Personal knowing answers the question “do I know what I do? And do I do what I know?” (Chinn & Kramer, 1999, p. 9). For example, the nurse enters into a therapeutic nurse-client relationship and attempts to get to know the patient as a unique person with a lived life history.

Sociopolitical knowledge

White (1995), adding to Carper’s (1978) taxonomy on ways of knowing, described sociopolitical knowledge as a knowledge source. Sociopolitical knowledge encompasses the context of the nurse-patient encounter and nursing as a practice profession (White, 1995). Nurses must have the sociopolitical knowledge to be politically engaged in order to advocate for health policy at local and national levels. For example, a nursing unit is short one nurse, there is a cost associated with leaving the unit short staff and seconding a nurse from another unit. Nurses in this context must advocate for safe patient to nurse ratios in order to provide care based on standards of practice.

Unknowing as a knowledge source

The concept of unknowing was articulated by Patricia Munhall in 1993. Unknowing, is a state of openness and is the ability and willingness to understand another person's perspective despite not knowing that person (Munhall, 1993). An authentic encounter requires the nurse to understand that his or her socially constructed world is different from others. Unknowing involves intersubjectvity, the sharing of each person's subjective world, where feelings, thoughts, ideas, illusions, distortion are unfolded. As a result, a common shared 'perceptual field' is developed, and it is within this field caring, empathy, conflict etc may take place (Munhall, 1993). To provide and achieve a state of openness is to say "I never thought about it that way" (Munhall, 1993, p. 128). Further research is needed to validate unknowing as a legitimate knowledge source. Perhaps unknowing is not in itself a knowledge source, but rather an attitude of one's approach to practice.

Table 2: Review: Definitions of Knowledge Sources

Empirical Knowledge	Empirical knowledge describes, explains and predicts certain phenomena of interest. In today's healthcare context, knowledge gained from randomized clinical trials and meta analysis consists of a large portion of what constitutes legitimate evidence in the evidence-informed paradigm.
Esthetic Knowledge	Esthetic knowledge captures that 'emic' perspective: the meaning and understanding of the experience from the patient/family perspective. Esthetic knowledge includes the ability to be empathetic and is grounded in clinical experience, trial and error and intuitive judgments.
Personal Knowledge	Personal knowledge involves being involved in a therapeutic nurse-client/family relationship. Personal knowing accepts the uniqueness of individuals and the fluidity of behaviours and perceptions in various situations (the ability to see beyond a diagnosis and engage with the individual in a unique relationship.
Ethical/Moral Knowledge	Ability to recognize all positions in what is right and what should be desired. The goal is optimal patient care and the promotion of health.
Sociopolitical Knowledge	Understanding the larger sociopolitical context of where nursing care is provided.
Unknowing Knowledge	Being open to new ideas and beliefs that we may not have previously considered.

The ways of knowing as described by Carper (1978), White (1995) and Munhall (1993) have been used by a variety of professionals as a framework to guide research studies and nursing curriculum as outlined in Table 3.

Table 3: Initiatives Guided by the work of Carper (1978), White (1995) and Munhall (1993)

Authors	Knowledge Source Domain	Focus
University of Wollongong (2013)	Empirical, Esthetic, Ethical/Moral & Personal	Descriptions of courses offered at an Australian University to increase knowledge and research literacy in undergraduate nursing programs
Jackson, J., et al. (2009)	Empirical, Esthetic, Ethical/Moral & Personal, sociopolitical, unknowing + emancipatory	Development of a nursing leadership model
Holtslander LF. (2008)	Empirical, Esthetic, Ethical/Moral & Personal	Framework for hope research with bereaved caregivers
Hunter, L. (2008)	Empirical, Esthetic, Ethical/Moral & Personal	Used Carper's (1978) work as a framework for doctoral dissertation
Cotton & Roden (2006)	Empirical, Esthetic, Ethical/Moral & Personal	Used Carper's (1978) work to guide research on homelessness
Austgard, K. (2006)	Esthetic	Article highlights the distinction between 'art' of nursing and 'fine art'
Rubarth, L. (2005)	Empirical, Esthetic, Ethical/Moral & Personal, sociopolitical, unknowing	Patterns of knowing of neonatal intensive care nurses in the assessment of sepsis
Wainwright, P. (2000)	Esthetic	Critical review of Carper's (1978) approach to nursing esthetics
Carr. (1999)	Empirical, Esthetic, Ethical/Moral & Personal	Education approaches to the integration of knowledge sources in an undergraduate nursing course
Johns, C. (1995)	Empirical, Esthetic, Ethical/Moral & Personal	Use of Carper's work to frame the process of understanding and learning through reflection

Sources of information used by nurses and context

A recent integrative review of sources of information used by nurses to inform practice was published by Spenceley and colleagues in 2008. Studies were mainly descriptive, cross-sectional survey designs. Of the thirty-two studies, six were from Canada and thirteen from The United States of America. The five top ranked avenues to obtain practice information were Registered Nurses/peers, nursing journals, reference material, personal work experience, and

patient/family. The high ranking of both human and experiential knowledge sources has been previously reported by Estabrooks, Rutakumwa, O'Leary, Profetto-McGrath, Milner, Levers and Scott-Findlay (2005) and Thompson, McCaughan, Cullum, Sheldon, Mulhall, and Thompson (2001). The authors noted that the setting, context and structure of nursing work across studies influenced how nurses accessed, used and valued information in clinical practice.

Spenceley and colleagues (2008) identified conceptual elements across studies that influence nurses' information-seeking practices and include factors related to the setting, context and structure of nursing work. Mediating factors (expectations of others, time pressures, competing priorities, urgency of need and situation barriers) were embedded in practice settings and influenced nurses' information-seeking behaviours. Information-seeking behaviours were strongest in a work environment that fostered evidence-informed practices and were supportive of change.

The Debate in Nursing: Sources of Knowledge

There has been significant discussion by nursing scholars regarding the legitimacy of Carper's (1978) taxonomy of knowledge, whether in the educational, theoretical, research or practice-orientated spheres of practice. Duff Cloutier, Duncan and Hill Bailey (2007) have argued that there is an artificial separation of the knowledge sources. As well, the definitions of various knowledge sources are subjective and difficult to apply in contemporary clinical practice environments. The lack of conceptual clarity and the ambiguities surrounding the constitution of knowledge has created confusion regarding the understanding of knowledge (Duff Cloutier, Duncan, & Bailey, 2007).

The purpose of this dissertation was to determine nurses' perceived importance of pluralistic knowledge sources in clinical practice. The assumption made here was that knowledge

sources articulated by Carper (1978) are not used in isolation and may constitute evidence outside of the purview of contemporary definitions of evidence. The knowledge questions that confront nurses are related to all aspects of the continuum of nursing care (Cloutier, Duncan, & Bailey, 2007). Carper (1978) recognized the complexities inherent in nursing practice and each knowledge source was perceived by Carper (1978) as important to nursing, but none of them alone were considered sufficient or mutually exclusive. Despite the core belief that nursing knowledge requires the integration of multiple knowledge sources, what constitutes nursing knowledge continues to be largely dichotomized. To date, there has been a paucity of research that attempt to specify how the various knowledge sources relate to and function with one another (Stein et al., 1998).

Stein et al. (1998) conceptualized the knowledge sources described by Carper (1978) using a cognitive model of social psychology as a framework. From this perspective, empirical, personal, esthetic and personal knowledge are “elements that comprise the complex domain-specific knowledge structures referred to as schemas” (Stein et al., 1998, p. 52). The schemas are the cognitive foundation of expertise and together serve as the foundation of social intelligence. Here knowing is the result of the coordination of all knowledge sources. I argue that evidence is rooted in knowledge and the understanding of how nurses perceive the importance of knowledge in decision making is an important contribution to nursing research in the understanding of knowledge sources that are perceived as important to clinical practice nurses in informing their practice.

Situating Knowledge as a Social Process

The legitimization of knowledge occurs within the local and national contexts specific to healthcare professions (Ferlie, 2006). For the nursing profession, the nursing curriculum and

content are developed and directed by academic discourse and largely follows the normal science paradigm. Although there are studies that describe the use of pluralistic knowledge in nursing education (Carr, 1999; Leenerts, 2003), nursing students may not obtain sufficient knowledge regarding alternative knowledge sources or the appropriate tools and confidence to integrate multiple sources of knowledge in everyday clinical encounters. If nursing students do not have an opportunity to be critically engaged in discourse related to various knowledge sources, then the dominant worldview of legitimate knowledge sources, in part perpetuated by the nursing institution, is further entrenched into the institutional system. In essence, academic institutions reproduce and perpetuate dominant worldviews. The consequences of such a discourse are to maintain the status quo (Eubanks, Parish & Smith, 1997).

Research utilization (RU)

The disparity between research and clinical uptake has been referred to as the research practice gap. The length of time to the adoption of research finding in clinical practice may be up to thirty years. A systematic review update on the extent that nurses use research in clinical practice was published in 2011 by Squires et al. In this systematic review, research evidence was considered to be information that was empirically derived. Of the 55 studies reviewed, the authors concluded that on average, nurses had a moderate to high research use in clinical practice. The authors acknowledged limitations of the review including issues related to the methodological quality, research designs and inconsistencies related to the use and measurement of RU across studies. Several factors were positively associated with RU and included: positive attitudes towards research, attending conferences or in-services, having a graduate degree (versus diploma or undergraduate degree), current role (leadership versus clinical practice nurse), clinical specialty (working in critical care versus non-specialty units), and job satisfaction. Three

characteristics that were not associated with RU included completion of research classes, experience and age (Squires, Estabrooks, Gustavsson, & Wallin, 2011).

Scott and Pollock's (2008) ethnographic study of Canadian pediatric critical nurses focused on the role of local organizational culture to research utilization. Four aspects of unit culture influenced RU. A hierarchical structure of authority, routine and technological driven work, a lack of work place innovation and a valuing of clinical experience had a negative impact on nurse participants RU behaviours. In this study, the nurse participants placed a high value on their clinical experience and specialized knowledge, such as research knowledge, was perceived as privileged and was not considered important in the context of practice. Scott, Estabrooks, Allen, and Pollock's (2008) qualitative study further demonstrated that uncertainty in the clinical practice of Canadian pediatric intensive care nurses shaped their RU behaviours, with high nurse participants' perceptions of clinical uncertainly leading to lower RU use by the nurse participants.

The role of healthcare organizations

Research has demonstrated that RU by nurses is not automatically translated into clinical practice. Organizational context shapes individual behaviours through its influence on individual behaviours, group norms and innovation (Cumming, Hutchinson, Scott, Norton, & Estabrooks, 2010). Understanding the structure and culture of organizations provides a lens to facilitate the understanding of social processes at play within large healthcare organizations.

The analysis of organizational context and its relationship to specific nursing outcomes has been widely studied in the nursing literature (Bamford, Wong, & Laschinger, 2013; Cummings, Hutchinson, Scott, Norton, & Estabrooks, 2010, Lankshear, Kerr, Laschinger, & Wong, 2013; Laschinger, Wong & Grau, 2012). Frameworks such as the Promoting Action on

Research Implementation in Health Services (PARiHS framework) and Moss Kanter's 1977 and 1993 structural empowerment theory have provided the foundation for a variety of research studies that have investigated the association between organizational context and various nursing outcomes such as research utilization, organizational commitment, feeling of autonomy and control in decision making, increased job satisfaction, physical and mental health, trust and respect, levels of justice, productivity, job performance, a decrease in staff turnovers, job strain and job burnout (Bamford, Wong, & Laschinger, 2013; Cummings, Hutchinson, Scott, Norton, & Estabrooks, 2010, Lankshear, Kerr, Laschinger, & Wong, 2013; Laschinger, Wong & Grau, 2012).

Structural empowerment

Structural empowerment is an important construct as it links individual strengths and behaviours to social policy and social change. Processes and outcomes are the focus of empowerment theories and these theories suggest that actions, activities, or structures may be considered empowering. The outcome of these processes is a level of being empowered (Perkins & Zimmerman, 1995).

According to Lankshear, Kerr, Laschinger and Wong (2013) and Laschinger, Finegan, Shamian, and Wilk (2001) a workplace that is considered empowered facilitates staff access to four empowerment structures: information, resources, support, and opportunities to learn and grow. Access to empowerment structures is enhanced by specific job characteristics (formal power) and interpersonal relationships (informal power). Empowerment structures facilitates work being accomplished in meaningful ways and may decrease the occurrence of occupational stress.

Dr. Heather Laschinger, a Canadian nursing researcher, has a research focus on the role of structural empowerment on nursing outcomes of interest. The conceptual framework that provides the foundation for Laschinger's research is based on Moss Kanter's 1977 and 1993 theoretical work. Table 4 outlines the definitions of the six empowerment structures as outlined in Laschinger's research and are the foundation of the structural empowerment component of this dissertation (Laschinger, http://publish.uwo.ca/~hkl/research/programs/empowerment.html).

Nursing specialty

Nurses employed in clinical specialties have a higher uptake of evidence-based practices compared to nurses employed in non-specialty practice areas. In a recent systematic review on the individual determinants of RU conducted by Squires et al. (2011), six of the nine studies demonstrated positive associations between clinical specialty and the uptake of research by nurses especially in specialty units such as critical care, compared to non-specialty areas.

Mallidou, Cummings, Estabrooks, and Giovannetti's (2011) secondary analysis of a larger study demonstrated that nursing specialties vary and may influence patient outcomes differently. For example, adverse events were fewer in intensive care units compared to non-specialty areas and were influenced by nurses' perceptions of control over their work environments (Mallidou, Cummings, Estabrooks, Giovannetti, 2011). Moreover, a study by Tigert and Laschinger (2004) on Canadian critical care nurses (N = 75) examined the relationship between nurses' perceived empowerment, perceived magnetic hospital traits and mental health. Results of this study were from a larger Canadian study and demonstrated that empowerment was an independent predictor of emotional exhaustion.

Table 4: Review: Definitions of Empowerment Structures

Empowerment Structures	Definitions
Information	Information refers to having the formal and informal knowledge that is necessary to be effective in the workplace (technical knowledge and expertise required to accomplish the job and an understanding of organizational policies and decisions) (Kanter, 1977 as cited in Laschinger, 1996).
Resources	Relates to one's ability to acquire the financial means, materials, time, and supplies required to do the work (Kanter, 1977 as cited in Laschinger, 1996).
Support	Involves receiving feedback and guidance from subordinates, peers, and superiors. High levels of structural empowerment come from access to these social structures in the work setting (Kanter, 1977 as cited in Laschinger, 1996).
Opportunity	Opportunities for learning, growth, and advancement in the organization results in greater employee satisfaction, commitment, and productivity. Employees in positions with few opportunities feel stuck in their jobs, resulting in lower career aspirations and lower commitment (Kanter, 1977 as cited in Laschinger, 1996).
Informal Power	Derived from alliances formed in an organization this allows individuals to get the job done (Kanter, 1977 as cited in Laschinger, 1996).
Formal Power	Formal power is evident when jobs are visible, in line with the vision of the organization and allows for latitude and discretion in decision making (Kanter, 1977 as cited in Laschinger, 1996).

In summary, clinical practice nurses have a responsibility to provide safe, ethical quality nursing care. The adoption of EIP by the nursing profession and other disciplines has led to significant contributions to safe patient care. However, I argue that the adoption of EIP and the associated privileging of empirical knowledge over other knowledge sources associated with EIP may not be the appropriate focus for the nursing profession. Rather, the understanding of what

knowledge sources are valued and perceived as important to patient care decisions as well as an understanding of how the organization context may help to explain how knowledge is reproduced and transformed in healthcare organizations is a perhaps a more appropriate focus.

CONCEPTUAL FRAMEWORK

The conceptual framework outlined in Figure 2 was based on a review and integration of relevant research literature by this investigator. The conceptual framework represents a dynamic process of factors that are responsible for the reproduction and transformation of knowledge sources. Each component of the framework will be individually discussed.

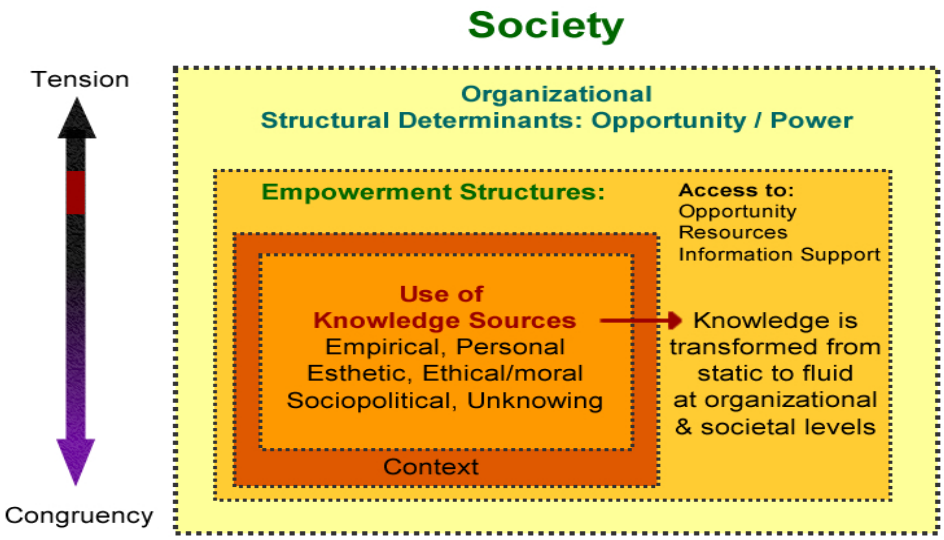


Figure 2 Conceptual Framework

Knowledge Sources

Carper (1978) first described knowledge sources (ways of knowing) used by nurses in clinical practice; additional knowledge sources were articulated by White (1995) and Munhall (1993) and include empirical, personal, sociopolitical, ethics, esthetic and unknowing knowledge sources. The six knowledge sources provide a ‘knowledge framework’ to guide this dissertation. The types of knowledge sources used by nurses is variable and may be influenced by the local

context and by the specific clinical encounter, the complexity of care decisions, the nature and structure of nursing work and the context where nursing work occurs (Estabrooks, Rutakumwa, O'Leary, Profetto-McGrath, Milner, Levers, & Scott-Findlay, 2005).

Knowledge is fluid and truth is bound to the socio-historical context and found among interactions with people (Giuliano, Tyer-Viola, & Lopez, 2005). Knowledge gained from various sources is transformed through social networks (Purkis & Bjornsdottir, 2006). The premise is that knowledge does not remain entirely unchanged, but is transformed by nurses to 'fit' the situation and context.

Within the framework, knowledge sources may or may not be considered discrete units. Traditionally, EIP has emphasized the isolation of knowledge factors (Purkis & Bjornsdottir, 2006). For example, a patient has an oral temperature of 39°C. The nurse concentrates on obtaining data from specimens (e.g. white blood cell count) and other clinical indicators such as urine output. In this process, the patient's meaning of the lived experience may become lost. A critical part of this clinical encounter (recognition and management of the disease) is possible through the application of empirical knowledge. Empirical knowledge allows the nurse to understand what a fever is and what factors are important to consider when identifying the source of the fever. The creative use of knowledge that facilitates the nurse's patient-centred approach is perhaps less understood, in particular, his or her comprehension of the patient's lived experience along the illness trajectory (Purkis & Bjornsdottir, 2006).

Empowerment Structures

Nurses' perceptions of structural empowerment are influenced by key organizational structures including access to information, resources, support and opportunity (Laschinger, Finegan, Shamian, & Wilk, 2001) and organizational culture, where culture is expressed "in

terms of accepted patterns of physical, cognitive, affective and social behaviours of the individuals who work in the organization" (Scott-Findlay, Snelgrove-Clarke, & Newton, 2007, p. 33). Nurses' perceived importance of knowledge sources may partially explain their perceptions of work place empowerment. In other words, a key hypothesis that warrants further testing is that a high level of congruency between nurses' actual and ideal use of various knowledge sources in clinical practice is associated with their perceptions of structural empowerment, with wider discrepancies between actual and desired leading to lower empowerment.

Informal and formal power enhances access to the four empowerment structures (Knol & van Linge, 2009). Cycles and feedback loops are important concepts to facilitate the integration and understanding of how nurses use knowledge sources in daily clinical practice. For example, it is often difficult to determine cause and effect relationships as structure and behaviour are related in an interactive and not in a static way (Moss Kanter, 1977).

The healthcare organization's context underpins activity or work and also shapes the structure of such work. Organization context guides how nursing work is completed as well as the types of work that are appropriate, what types of knowledge are valued and used, and the creation of contexts for bringing individuals together for interactions (Scott-Findlay & Golden-Biddle, 2005). Culture provides unconscious and taken-for-granted prototypes and prescriptions for how nurses behave and interpret experiences (Scott-Findlay & Golden-Biddle, 2005).

Society

The legitimization of knowledge occurs through the adoption of a dominant worldview, mainly post-positivism where the goal of knowledge is to describe, explain and predict (Giuliano, Tyer-Viola, & Lopez, 2005). Social structures define what constitutes best evidence, perhaps obscuring the realities of nursing practice.

Social and organizational structures obtain, maintain and transmit information. As members of society, nurses live in a parallel world that contains co-existing social structures. These co-existing and parallel structures incorporate and reinforce potentially different dominant knowledge worldviews that are valued and may limit the use and legitimization of knowledge sources derived from multiple sources and contexts. Although nurses may incorporate various knowledge sources into everyday decisions, such practice may be difficult in their professional work environments.

The perpetuation of the inherent assumptions associated with the dominant knowledge paradigm is grounded in societal structures. The dotted lines within the conceptual map indicate that society and organizations where nurses are employed have the capacity to influence each component in its relationship to legitimate knowledge sources. The individual nurse is not held hostage to his or her environment and has the ability to influence legitimized and accepted ways of knowing within organizations and societal structures.

The understanding how social and cognitive boundaries influence the reproduction and transformation of knowledge may be more important than understanding the nature of knowledge itself. The privileging of knowledge is rooted in the social and cognitive boundaries of healthcare professions and may lead to barriers to the use of multiple knowledge sources within healthcare teams (Ferlie, 2006, Griffiths, 2005). Ferlie (2006) discussed the importance of social and cognitive boundaries in exerting a strong influence on the types of knowledge sources deemed credible by different healthcare professionals. Professional groups have distinct membership, affiliations and experiences at local, regional and national levels. The socialization and cognitive boundaries of healthcare groups and clinical practice settings may limit the diffusion and

acceptance of various knowledge sources across disciplines and within interdisciplinary teams (Copnell, 2008; Ferlie, 2006).

Tensions and Congruencies

Tension, for the purposes of this study, is conceived as mental or emotional strain, either brief or prolonged, that had an affect on nurse participants' emotional or physical well-being (adapted from the American® Heritage Stedman's Medical Dictionary, 2014). Tensions may arise for nurses when their practice environments do not support the use of appropriate pluralistic knowledge in clinical care.

The degree of tension experienced by nurses may depend on the degree or severity of inhibiting/enhancing factors within an organization, the scope of influence of the nurse within society, and the nursing profession and other changes that may be occurring simultaneously which influence what is the truth, i.e. a shift in the dominant knowledge paradigm. Although change in knowledge paradigms is largely controlled by the internal change capacity of the receiving organization (societal structures) and the context in which it is situated (organizations that provide care to patients), nurses are not powerless, but can be an integral part of knowledge transformation and change. Nurses may exercise strategic choice!

The concept of strategic choice is perhaps best understood through theory of public policy making, specifically the concept of incrementalism. Incrementalism is an interactive, dynamic process with a variety of stakeholders who often have different values, ideas and knowledge. The serial nature of incrementalism affords the opportunity to learn through trial and error as well as a process of successive approximations. Incrementalism offers a gradual, practical way to pursue change through a pluralistic process. To be effective, two conditions must be met, key

stakeholder interests must be represented and power among key stakeholders should be uniformly distributed (Hayes, 2013).

In summary, the conceptual framework facilitates the understanding of how social and cognitive boundaries and individual factors may influence the reproduction and transformation of knowledge. The understanding of how knowledge is privileged and rooted within professional boundaries is important to the interpretation of clinical practice nurses perceived importance of pluralistic knowledge in clinical practice as well as and appreciation of barriers to the use of multiple knowledge sources by nurses and the consequences for nurses when their perceived preferred use of pluralistic knowledge sources does not match their clinical realities (Ferlie, 2006, Griffiths, 2005; Melnyk, Fineout-Overholt, 2004).

CHAPTER 3: METHODS

The purpose of chapter three is to describe the methods used to conduct this study. The following headings guide this discussion: (a) design, (b) procedures, (c), informed consent, (d) protection of human subjects, and (e) data analysis.

Design

An exploratory, concurrent mixed methods approach was used to address the research questions associated with this study. A parallel mixed method approach is used to gain an in-depth understanding of concepts as well as a multi-level perspective. The synergy of the integration of qualitative and quantitative data in exploring research questions allows for a fuller, richer understanding of the phenomena under investigation (Creswell, Klassen, Plano, & Smith, 2011).

The research question(s) guided the investigator's mixed methods approach and research design selection. Quantitative methods by themselves are inadequate to answer the research questions for this study. The mixed methods approach allowed the researcher to obtain multi-level perspectives related to a complex area of research on nurse perceptions of knowledge sources and empowerment. Contextualization was an important reason for choosing a mixed methods approach. In this instance, the quantitative data captured the 'macro' or organizational level information, and the qualitative data added subjective information from nurse participants who worked within this healthcare system. The choice of a mixed methods design was informed by the theoretical and conceptual orientation that provides the structure to this study (Creswell, et. al., 2011).

Instruments: clinical vignette

Vignettes were first used in the 1950's in anthropology and the social sciences and more recently are being used in nursing. The use of vignettes facilitates a rich understanding of real life phenomena and vignettes are particularly useful to explore sensitive subject matter. The popularity of vignettes has gained increased recognition as a valid method to explore attitudes, perceptions and beliefs (Hughes & Huby, 2001). Moreover, vignettes are particularly useful in the assessment of the quality of clinical practice and are used in medical education (Peabody, Luck, Glassman, Jain, Hansen, Spell & Lee, 2004).

From a practical advantage, vignettes are economical, efficient, and may generate large amounts of data from a potentially large pool of participants. The key advantages of vignettes are (Brown & Pritchard, 2008; Hughes & Huby, 2001):

- They provide a clear focus for discussion during face-to-face interviews
- They allow for more contained and standardized information
- They situate a particular context and therefore may lead to more uniform and comparable responses
- They do not require in-depth knowledge of subject matter
- They may reduce the influence of socially desirable responses through a distancing effect and allow participants to respond to a particular situation in a particular clinical context

Vignettes, when properly constructed, are valid measures of clinical practice and the efficiency of clinical care. A key attribute of a vignette is the ability to adequately discriminate among variations in clinical care. Research conducted by Peabody et al. (2004) demonstrated that the use of clinical vignettes to measure effectiveness of quality of care in four medical practices

in the United States closely approximated quality of care by the gold standard (standardized patients) compared to medical abstraction.

Despite the advantages of using clinical vignettes as a research tool, vignettes may not entirely capture the reality and dynamism of real life situations. The selection of context allows for the privileging of one type of knowledge source over another and may limit the vignette's wider applicability to real life. The simple answers given may negate the complexities of real life clinical situations. However, the ability of a vignette to simplify and focus the subject matter may also be viewed as a methodological strength (Hughes & Huby, 2001).

Three types of clinical vignettes were developed to specifically address research question #1 and inform research questions #2 and 3 of this dissertation. The vignettes included unstable angina, septic pneumonia and coronary artery by-pass surgery. To review, the clinical vignettes were developed to specifically address the following research questions:

1) For clinical practice nurses', employed with the Adult Critical Care and Cardiac Sciences Programs within the Winnipeg Regional Health Authority (WRHA), what is the perceived importance of various knowledge sources in a 'most likely' and 'a most desirable' clinical encounter as depicted in a clinical vignette? A secondary objective was to determine if the knowledge source 'unknowing' is understood and perceived as important by the nurse participants.

Hypothesis: The nurse participants perceived empirical knowledge as the most important knowledge source.

2) What is the relationship between the total empowerment scores (obtained from the Conditions for Work Effectiveness Questionnaire-II) and the level of congruence in clinical

practice nurses' perceived importance of knowledge sources in a 'most likely' and 'most desirable' clinical encounter as depicted in a clinical vignette?

Hypothesis: Lower total structural empowerment scores were associated with larger differences between the nurse participants'' perceived importance of knowledge sources (i.e. larger differences between the 'most likely' score and the 'most desirable' score for perceived importance of each knowledge source).

3) What is the relationship between empowerment structures obtained from the Conditions for Work Effectiveness Questionnaire-II (opportunity, information, support, resources and formal and informal power) and nurse participants' perceived importance of knowledge sources as depicted in 'the most likely' or 'most desirable' scenarios contained within the clinical vignette?

Vignette development

Consultation with clinical experts was sought to determine three diagnoses/procedures that were reflective of clinical practice as well as diagnoses/procedures in which clinical practice guidelines existed to guide care decisions. The vignettes developed included: 1) unstable angina, 2) septic pneumonia and 3) coronary artery bypass surgery.

Steps were taken to address, in part, aspects related to validity and reliability. Validity refers to the accuracy of the measure, i.e. is the instrument measuring what it was intended to measure. Validity is about the tool's scores and their interpretation. Validity is not absolute, but always a matter of degree. Construct validity refers to the construct; specifically does the instrument measure the construct that was intended and includes face and content validity (DeVon et al., 2007).

Reliability refers to consistency; ensuring the instrument consistently measures what it was intended to measure (Research rundowns, 2009). Measures of reliability include test-re-test and equivalence, a measure of internal consistency (DeVon et al., 2007).

Six clinical experts reviewed the vignettes. Specifically, the clinical experts were asked to review the information related to clinical care (e.g. accuracy of medication dosages, laboratory tests, etc.). Based on feedback, revisions were made to the original three clinical vignettes (addressing face validity and in part content validity).

The three clinical vignettes were piloted to determine the ability of the participants to discriminate between a 'most likely' and a 'most desirable' scenario. The participants who where involved in the pilot were asked to score a vignette of their choice and to complete a comment sheet. The majority of the respondents was female (75%), the largest proportion between the ages of 46-50 years old (29%), and 65% reported having obtained a bachelor degree or higher. The range of reported number of years of clinical practice was 1 to 42 years, with an average of 20 years.

Feedback from the comment sheets (n=14) demonstrated that the majority of the participants indicated that the vignettes provided clear direction, that the overall flow was logical, and that the explanations of the various knowledge sources were sensible. The scores from the vignettes indicated variability among participants' responses and showed that the participants were able to discriminate between a 'most likely' and a 'most desirable' scenario (as indicated by a Kappa score <1). The completed analysis of the pilot are located in Appendix A, B and C.

The vignettes were structured around three junctures to reflect a realistic progression of a patient's hospital stay and included the patient's admission to a clinical practice unit, the hospital stay and prior to hospital discharge. Each section (admission to hospital discharge) included a

'most likely' followed by a 'most desirable' scenario. For each section of the vignette, participants ranked their perceived importance of six knowledge sources (empirical, esthetic, personal, sociopolitical, moral/ethical, unknowing). The research literature, as well as feedback from the pilot, guided the statement used to illustrate each of the six knowledge sources contained within the clinical vignettes. The three vignettes were included in the survey packages that were developed. Participants were instructed to chose and complete one of the three clinical vignettes provided. The vignettes were developed to learn more about clinical practice nurses' perceived importance of pluralistic knowledge sources in practice, and not to assess medical decisions or treatment options. The purpose for the development of the different vignettes was to provide a framework or context for the nurse participants to chose from (Appendix D).

The Conditions for Work Effectiveness Questionnaire-II (CWEQ-II)

The CWEQ-II was selected to address research questions two and three. Based on Kantar's (1977; 1993) theory of structural empowerment, the CWEQ-II measures four empowerment dimensions including access to opportunity, information, support and resources and measures of formal and informal power (Laschinger, Finegan, Shamian, & Wilk, 2001).

The CWEQ-II incorporates 19 items and includes four scales related to Kanter's (1977) empowerment structures and two sub-scales that measure formal and informal power (Job Activities Scale (JAS II), the Organizational Relationships Scale (ORS II), and a 2 item global empowerment score that is used for validation purposes (Appendix E). Items on the six subscales are summed and averaged with a range for each sub-scale from 1-5. The scores of the six subscales are summed to create the total empowerment score (score range 6-30) (Personal Communication, Dr. Laschinger, September, 2011). Research publications by Dr. Laschinger and

colleagues suggested that a moderate empowerment score was around 20 units (Kluska, Laschinger, & Kerr, 2004).

Construct validity of the CWEQ-II was demonstrated in previous research by: 1) a confirmatory factor analysis that revealed a good fit with the factor structure (x^2 = 279, df = 129, Comparative Fit Index (CFI) = .992, Incremental Fit Index (IFI) = .992, Root Mean Square Error of Approximation (RMSEA) = .054) and 2) a correlation with the global empowerment score (r = 0.56). The reliability of the CWEQ-II (Cronbach's Alpha) was reported for the measures of structural empowerment (opportunity, information, support resources, overall score, JAS II and ORS II) in a variety of studies (range: opportunity .75-.88; information .81-.96; support .72-.89; resources .71-.88; CWEQ II .78-.93; JAS II .55-.83; ORS II .60-.80) (Email communication, September 14, 2011, Dr. H. Laschinger).

Rationale for using the CWEQ-II

System redesign and restructuring in healthcare impact how healthcare is delivered (Jennings, 2008). Nurses, as one of the largest group of employees in healthcare, have been particularly affected by restructuring. Supportive work environments have a positive impact on patient outcomes. For example, a research study by Aiken, Smith, and Lake (1994) revealed that hospitals with work environments that supported nursing practice had significantly lower mortality rates than those that did not.

The importance of social context in shaping professional identity and agency has been well established. Nurses must engage with the existing social structures and through this engagement, knowledge may be reproduced or transformed (Birkett, 2011). Nursing research in particular supports the importance of the relationship between work empowerment and nursing outcomes. Work environments that provide access to information, resources, support and the

opportunity to learn and develop are considered empowering. Such an environment promotes and supports nurses to act on their clinical expertise, make appropriate nursing decisions and exercise good judgment in their daily clinical work. Nurses with limited access to empowerment may become powerless, stagnate in their current nursing positions, become rule focused, feel less committed to their employers and lack job satisfaction, ultimately affecting patient care (Ridley, Wilson, Harwood, & Laschinger, 2009; Laschinger, Finegan, Shamian, & Wilk, 2001, 2001). This dissertation addressed a gap in the nursing research literature, specifically the association between clinical practice nurses' perceived importance of pluralistic knowledge sources and their access to empowerment structures.

Qualitative interviews

Nursing research studies have demonstrated that a relationship exists between structural empowerment and nursing outcomes. Studies using quantitative measures have described nurses work environment and not nurses reactions or feelings related to it (Laschinger, Finegan, Shamian, & Wilk, 2001). The goal of the qualitative component of this study was to obtain the voices of nurses in order to describe and understand their perceptions of the use and importance of different knowledge sources in clinical practice as well as insight into how the organizational context influences nurses' choices and behaviours that are linked to their perceived importance of knowledge sources used in clinical practice. In addition, the qualitative interviews were conducted to determine the consequences (tensions) that may exist when the nurse participants' preferred use of knowledge sources did not match their clinical realities.

Semi-structured interviewing allowed for better use of the knowledge producing potential of conversations between people. The purpose of conducting a semi-structured interview was to obtain and interpret the meaning of real world phenomena from the nurse's perspective. Semi-

structured interviews are amenable to a receptive interviewing approach. Receptive interviewing empowers both the interviewer and interviewee and allows a large degree of control in the flow of information using relatively few open-ended questions (Brinkmann, 2013).

The individual face-to-face interview is a standard interviewing technique in qualitative research. According to Brinkmann (2013) there are several advantages of conducting a one-on in person interview. The advantages include the ability to lead the conversation in a direction that is congruent with the interviewer's research agenda as well as the ability of the interviewer to create a more private and confidential environment. The goal of the interview is knowledge production where the interviewee is positioned as the expert who conveys information related to the research agenda (Brinkmann, 2013).

This study's qualitative interviews provided additional data to understand and describe the complexity related to the use of multiple knowledge sources in nursing practice and decision making and specifically addressed research question #4 "What are the lived experiences of nurses as it relates to the use of pluralistic knowledge sources and the potential consequences (tensions) described by clinical practice nurses when their preferred knowledge sources do not match clinical realities"?

Population

The population for this research study was clinical practice nurses employed in an adult critical care (ICUs) or cardiac sciences inpatient unit within the WRHA. The WRHA is a large health region servicing 700,000 people in the city of Winnipeg, surrounding rural municipalities and Churchill, located in the northern part of Manitoba. The WRHA also provides support and specialty services for those individuals outside of the WRHA boundaries. There are two tertiary level and four community level acute care hospitals within this health region. Nurses employed

in these units provide highly specialized care to patients with complex health care needs. Previous research suggests that Registered Nurses employed in specialized areas are more likely to engage in evidence-informed practice than those employed in non-specialized clinical practice areas (Scott & Pollock, 2008).

Inclusion/exclusion criteria

The inclusion criteria for the study were: clinical practice nurses who : (1) had the ability to read and speak English, (2) were ≥ 18 years of age, (3) worked part- or full-time, and (4) were willing to sign an informed consent (for the qualitative component). The exclusion criteria were: (a) clinical practice nurses who were designated as 'casual' status (i.e. they did not hold a permanent hospital position, but they worked on an as-needed basis) and (2) clinical practice nurses not employed in an inpatient clinical area.

Procedures

The following is a discussion of the procedures for this dissertation.

Recruitment: critical care clinical practice nurses

The nurse participants were recruited from the six WRHA acute care ICUs. The College of Registered Nurses of Manitoba (CRNM) staff facilitated the initial recruitment of clinical practice nurses working in the ICUs within the WRHA. Annual renewal of registration with the CRNM involves the completion of an online renewal process. As part of the renewal process, nurses identify the type of clinical practice setting in which they are currently employed (e.g. medicine, community care, etc.).

There were identified advantages and disadvantages of using the CRNM database. Telephone and email correspondence with CRNM staff revealed that it was possible to limit the database search to the population for this study as per the study protocol. Moreover,

questionnaires endorsed by legitimate profession associations have been reported to be more successful in increasing reponse rates (VanGeest & Johnson, 2011). Limitations with this approach were apparent and included: (1) it was not possible to separate out those clinical practice nurses who were employed in an adult or pediatric/neonatal intensive care unit, (2) it was not possible to identify specific facilities, i.e. the facility in which the clinical practice nurse was employed, and (3) nurses self-selected their practice setting from a predetermined list of options. At the time of this study's recruitment of nurses, there was no process in place to verify whether nurses' self-reported information was accurate (Personal Communication, Ms L. Ridgley, Communications Coordinator, CRNM, June, 2013).

The researcher's intent was to recruit clinical practice nurses working in adult ICUs. The researcher consulted with her thesis committee on how to best to handle any returned surveys from clinical practice nurses employed in a non-adult critical care setting. Together with the investigator's thesis committee, the researcher decided that to not jeopardize the credibility of the study, all surveys would be accepted regardless of practice setting.

Recruitment: cardiac sciences clinical practice nurses

At their time of registration renewal with the CRNM cardiac sciences nurses were unable to distinguish their clinical practice areas as cardiac sciences, as no cardiac sciences response option existed on the renewal form. The WRHA Cardiac Sciences Program's inpatient clinical units were located at a tertiary site within the WRHA and included the intensive care cardiac surgery unit (ICCS), the inpatient cardiac surgery unit (ICSU) and the cardiology inpatient unit. The Program Assistant for the WRHA Cardiac Sciences created a list of clinical practice nurses who met the inclusion criteria for the study. The list did not include clinical practice nurses employed in the Critical Care Float pool at this tertiary site.

Data collection part one: adult critical care nurses

Survey packages were electronically distributed by CRNM staff in accordance with Executive Director Policy PC-8 (Appendix F) during January and February, 2013. Correspondence with CRNM staff revealed that the majority of members provided their email addresses upon registration renewal (Personal Communication, Ms L. Ridgley, Communications Coordinator, CRNM, February, 2013). The survey package was emailed to CRNM members who met the inclusion criteria for this study. The survey package contained an introduction letter (Appendix G), a demographic sheet (Appendix H), an electronic copy of the three clinical vignettes (refer to Appendix D), and the CWEQ-II (refer to Appendix E). A modified Dillman (2000) method was used to maximize response rates. This included the survey package being emailed on three separate occasions (with a two week interval between mail outs).

Due to a poor response rate (only 3 nurses returned surveys), an alternative data collection technique was sought by the researcher. Discussions took place with the researcher's dissertation committee as well as with the WRHA Regional Director for the Critical Care Program. As a result of these discussions, the managers of six WRHA adult ICUs were contacted to determine the number of staff who met the inclusion criteria for the study. Based on the information obtained from the managers, during the months of April and May, 2013 copies of the survey packages were hand-delivered to the respective managers along with a sealed box for nurses to place their completed surveys. The survey packages included envelopes to place completed surveys. The survey packages were distributed by the managers to clinical practice nurses at one point in time. The rationale was that it was not feasible or practical to ask the managers to facilitate the distribution of the surveys more than once.

To maximize opportunities for nurses to be aware of the study and optimal return rates, an invitational poster was created. The poster was distributed to the respective managers. The managers determined how many copies to make of the poster and where the poster was to be displayed to promote nurses' awareness about this study (Appendix I).

Data collection part one: cardiac sciences nurses

Based on the inclusion criteria for the study, the program assistant for the WRHA Cardiac Sciences Program created labels with clinical practice nurses' names and their areas of practice. A hospital volunteer created the 'survey packages' (i.e. consisting of an introduction letter, a demographic sheet, three clinical vignettes and the CWEQ-II) and distributed them to the respective managers to distribute to clinical practice nurses. A modified Dillman (2000) method was used in an attempt to maximize response rates. Survey packages were distributed on two separate occasions at two week intervals. After the second distribution, it was noted that an additional third distribution would not be practical. Additional sealed survey packages were provided to the inpatient units and left in a convenient location (i.e. near the main desk or conference room) on inpatient units.

Table 5 is an outline of the total number of survey packages that were distributed. The number of survey packages to be distributed was obtained from the managers of the ICUs and the WRHA Cardiac Science's Program Assistant provided the number of survey packages to be distributed for the cardiac sciences inpatient units.

As this was an exploratory study with no known estimate of the effect size a power analysis was not undertaken. However, the researcher is confident that this study containing 141 nurse participants was adequately powered to detect important predictors of SE by the very low p-values (<0.0001) for the stronger model coefficients. A post hoc power analysis for future

studies with a similar design would require a sample size of 73 at a power of 80% and a two-tailed apha of 0.05 (Personal Communication, Mr. B. Hiebert, October 17, 2014).

Table 5: Distribution of Survey Packages per Clinical Area

Clinical Area	Total Number of Survey Packages Distributed
Inpatient cardiac surgery unit	40
Cardiology inpatient unit	55
Adult Intensive Care Unit-Surgical Intensive Care tertiary	65
Adult Intensive Care Unit Cardiac Surgery tertiary	45
Adult Intensive Care Unit –Medicine tertiary	50
Adult Intensive Care Unit – Medicine tertiary	50
Adult Intensive Care Unit – Intermediate tertiary	18
Adult Intensive Care Unit – Community	18
Adult Intensive Care Unit – Community	22
Adult Intensive Care Unit – Community	40
Adult Intensive Care Unit – Community	18
Total	421

Data collection part two: qualitative interviews

Part two of the study consisted of qualitative interviews held with participating nurses. The researcher's goal was to obtain 10-20 qualitative interviews: a total of thirteen interviews were conducted by the researcher. The introduction letters, included in the survey package, described the nurse participant's role in the qualitative aspect of the study. Members interested in participating in a qualitative interview were invited to return the introduction letter or directly contact the researcher by email. A semi-structured interview guide was created by the researcher

(Appendix J). The digitally-recorded interviews were conducted at a mutually agreed upon location and time and every attempt was made to keep the interviews no longer than 20 minutes. After obtaining informed consent, the researcher proceeded to conduct the interview with the nurse participant. The majority of the interviews were conducted at the researcher's work office.

Informed Consent

A disclaimer was incorporated in the introduction to the study letter for part one of the study (surveys). According to the University of Manitoba Research Ethic Board guidelines, this type of information sharing is appropriate for surveys (University of Manitoba Faculty of Medicine Research Ethics Board). Nurses who participated in the qualitative interviews signed an informed content form (Appendix K).

Protection of Human Subjects

The research study was approved by the University of Manitoba Research Ethics Board and by the St. Boniface Hospital Research Review Committee. In addition, the Executive Director of the WRHA Research and Evaluation Unit provided consent to conduct the research study within the health region.

Measures to protect anonymity included the following: (1) not using participants' names on any reports or notes, (2) separating consent forms and qualitative data in separate locked file cabinets, and 3) ensuring there were no personal identifiers in the qualitative transcripts.

Data Analysis: Part One Descriptive Statistics

Demographics

Demographic data, obtained from the clinical vignettes were analyzed using descriptive statistics (frequencies for age categories, gender, education level, current clinical practice area

and years of clinical experience). Individual determinants of SE were identified from demographic variables reported by others (Copnell, 2008; Squires et al., 2011).

CWEQ-II

Each of the CWEQ-II items (i.e. opportunity, information, support, resources, formal power and informal power) were summed and averaged to provide a score for each individual sub-scale, with a range from 1 to 5 units. The final scores of the six sub-scales were then summed to create the total empowerment score (score range is six to 30 units). Higher scores indicated a higher level of empowerment.

Clinical Vignettes

The importance of each knowledge source was measured at each point on a 5-point ordinal scale from 1 to 5 units. A mean score for each knowledge domain was obtained by summing and averaging the items. The perceived importance of each knowledge source increased (i.e. 1 unit was the lowest perceived importance to 5 units being the most perceived importance). The scoring of the vignettes although simplistic was logical. Additional evaluations of the clinical vignettes would be helpful in determining the validity of: the example used to represent each knowledge source and the ability of the vignettes to measure each knowledge source in the same way or to the same degree. With further validation, the clinical vignettes could become a more validated tool to determine clinical practice nurses perceived importance of pluralistic knowledge sources in clinical practice.

Data Analysis: Part One: Regression

Regression

Regression analysis allowed for the testing of potential relationships between dependant and independent variables (Hassard, 1991). For this study, the relationship of interest was the

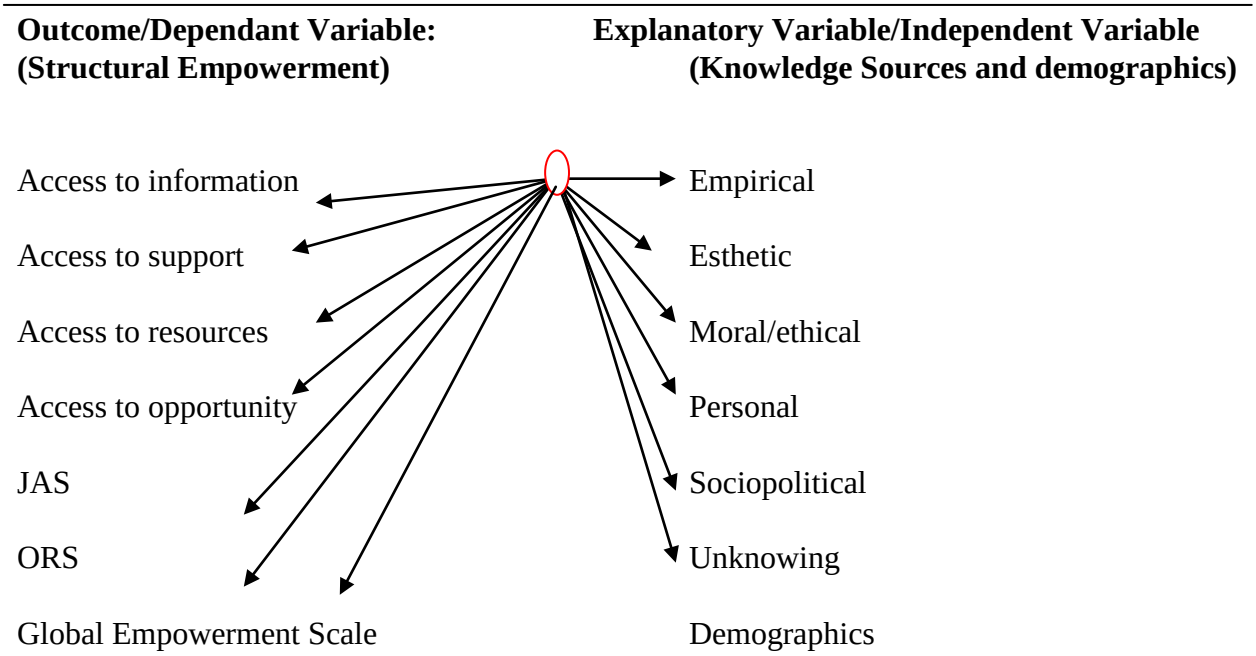
difference between the nurse participants' perceived importance of the six knowledge sources in a 'most likely' and 'most desirable' clinical scenario and the total structural empowerment score obtained on the CWEQ-II (i.e. the 19 measures of the 6 components of structural empowerment including opportunity, information, support, resources, formal and inform power).

Stepwise multivariable linear regression models were used to quantitatively assess which of the six knowledge sources within the clinical vignettes and the demographic variables where independently associated with the CWEQ-II total empowerment score. The 'most likely' and the 'most desirable' scenarios of each section (admission, hospital stay, and prior to discharge) of the clinical vignettes and the differences between the 'most likely' and 'most desirable' scores where among the variables associated with the clinical vignettes.

Stepwise multivariable logistic regression models were used to quantitatively assess which of the six knowledge sources and demographics were associated with the six components on the CWEQ-II. The 'most likely' and the 'most desirable' scenarios of each section (admission, hospital stay, and prior to discharge) of the clinical vignettes and the differences between the 'most likely' and 'most desirable' scores where among the variables associated with the clinical vignettes.

The regression models determined which of the independent variables were significantly associated with the total empowerment score and each of the six structural empowerment components on the CWEQ-II, while calculating adjusted effect measure (e.g. odds ratios, regression coefficients) estimates determined the strength and direction of the associations (i.e. outcome dependant variable = empowerment and knowledge = independent variable). The following visual illustrates the analysis undertaken for this dissertation.

Regression models



Qualitative Analysis

Interviews were transcribed verbatim to a word processing program. The initial step of data analysis taken by the researcher was to obtain a sense of the whole or to obtain an overall feel for the interviews (Sandelowski, 1995).

A data reduction framework was used by the researcher to approach data analysis in a disciplined manner. Consistent with a qualitative approach, the researcher took an inductive approach to analyze the interview data. This type of analysis is a dynamic process and not merely a post-hoc interpretation of interviews. An inductive approach is a systematic process of looking for similarities and differences within and across cases (Brinkmann, 2013).

Each interview was analyzed by the researcher in a consistent manner. The first step of the analysis process involved coding of the data. The goal of the researcher's coding was to identify patterns and to begin to formulate explanations of the data. Codes were data driven and

were not developed prior to conducting the research project (data-driven coding) (Brinkmann, 2013). Based on the codes, the researcher identified categories through a logical analysis of the data. Subsequent interviews conducted by the researcher followed the same process. Ongoing comparisons for similarities and differences took place for each interview (Fetterman, 1989).

The third and final step of the analysis involved the researcher's identification of common categories and themes which represent the highest level of abstraction. The researcher's goal was to provide a systematic understanding of how categories and themes were related to one another (Germain, 1993). Once all interviews were analyzed, it was critical for the researcher to compare each transcript and search for unique and common categories and themes across all transcripts. Categories and themes were thus developed from the entire data set.

Rigor

The question of rigor in qualitative research has been widely debated. Brinkmann (2013) described quality as 'virtues' that include epistemic, ethical and aesthetic virtues. Quality criteria, whether epistemic, ethical or aesthetic are considered place holders i.e. they serve to improve the researcher's practice. One virtue is not viewed as more important than another one. A holistic approach to right occurs where epistemic, ethical and aesthetic virtues are equally relevant (Brinkmann, 2013).

From an epistemic perspective, truth is connected to showing not telling. Truth in qualitative analysis is considered 'true' in a pragmatic sense if the researcher is honest, specifies a theoretical perspective, situates and addresses the participants' statements and provides examples to back up the categories and themes developed from the data (Brinkmann, 2013).

The emphasis on ethical virtues in the humanities has been dated as far back as to Aristotle and involves both micro and macro ethical considerations. Ethical virtue vis-à-vis a

qualitative study implies that the researcher has attempted to transform practice in a meaningful way, is respectful of the participants, is sensitive to issues of privacy, confidentiality and consent, and is faithful to the lived experiences of those portrayed (Brinkmann, 2013).

Aesthetic virtues allow a reader to understand the phenomena under investigation. This is accomplished through the written report. The report should include the inclusion of many concrete details including complex narratives that are honestly communicated. Aesthetics is a tool that portrays the lived experiences of participants based on ethical self-consciousness (Brinkmann, 2013).

In summary, Chapter 3 provided a review of the methods that were untaken for the researcher's study. Particular attention and detail was provided to the reader related to recruitment strategies and the subsequent measures that were untaken to address the recruitment of nurse participation for this study.

CHAPTER 4: SURVEY RESULTS

Chapter four will address the study's survey and qualitative findings. The first part of Chapter 4 is organized to address the first three of the four research questions developed for the researcher's dissertation:

1) For clinical practice nurses', employed with the Adult Critical Care and Cardiac Sciences Programs within the Winnipeg Regional Health Authority (WRHA), what is the perceived importance of various knowledge sources in a most likely and a most desirable clinical encounter as depicted in a clinical vignette? A secondary objective is to determine if the knowledge source 'unknowing' is understood and perceived as important by the nurse participants.

Hypothesis: Nurses perceived empirical knowledge to be the most important knowledge sources

2) What is the relationship between the total empowerment scores and the level of congruence in clinical practice nurses' perceived importance of knowledge sources in a most likely and most desirable clinical encounter as depicted in a clinical vignette?

Hypothesis: Lower total structural empowerment scores were associated with larger differences between the perceived importance of knowledge sources (i.e. larger differences between the most likely score and the most desirable score for perceived importance of each knowledge source).

3) What is the relationship between empowerment structures (opportunity, information, support, resources and formal and informal power) and nurse participants' perceived importance of knowledge sources as depicted in 'the most likely' or 'most desirable' scenarios contained within the clinical vignette?

Survey Response Rate

Of the 421 surveys distributed, a total of 141 were returned, representing a 33.5% response rate. Overall, the percentage of the total number of responses across facilities was

consistent (25.5 to 35%), (range was between 25 – 64 responses). Nulty (2008) reported that an acceptable survey response rate is between 33 to 56%, with higher response rates if the survey is administered face-to-face. Reported response rates to nursing surveys by nurses are typically low and fall below 60% (VanGeest & Johnson, 2011). For this study, the surveys were delivered to each clinical area for distribution by the managers. The managers had numerous priorities and responsibilities and were extremely busy which may account for the lower response rate observed in this study. The percentage of returned surveys from each clinical area is presented in Table 6. Twelve returned surveys were from nurses employed in the 'other' category.

The intent of the survey was not to capture and analyze data per healthcare facility. Rather, two clinical areas (Cardiac Sciences and Tertiary and Community Intensive Care Units) were considered as programs within a larger health authority and the level of analyses chosen by the researcher based on nursing research literature that suggests nurses employed in specialized areas are more likely to engage in evidence-informed practice. Although it is acknowledged that differences in perceptions of SE may exist at the level of each clinical unit this analysis was not untaken to protect the anonymity of each clinical unit. The following groupings were used to guide data analyses: (a) tertiary ICU, (b) community ICU and (c) cardiac sciences.

Table 6: Survey Response Rates per Clinical Area and Total Number of Distributed Surveys

Clinical Area	Number of surveys distributed	Number of surveys returned	% Response rate per Clinical Area/Total Sample per Clinical Area	% of Returned Surveys/Total Sample
Cardiac* Sciences	140	40	28.6% (40/140)	28.4% (40/141)
Community ICU	98	25	25.5% (25/98)	17.7% (25/141)
Tertiary ICU	183	64	35% (64/183)	45.4% (64/141)
Other	NA	12	NA	8.5%

*Includes Cardiac Surgery Intensive Care Unit

Descriptive Statistics

Descriptive statistics were computed for demographic data as well as for average scores and standard deviations for each clinical vignette. The nurse participants tended to be older, female, and university educated. Overall, the average number of clinical years of experience was 14.26 (range 0.5 to 38) years.

Five-year age cohorts were used, rather than age as a continuous variable, to safeguard the anonymity of the respondents. This was important as the researcher was familiar with staff employed in the clinical areas where the nurse respondents were employed during this study. Five year age cohorts allowed for a specific level of detail to analyze age as a predictive variable (Personal Communication, Mr. B. Hiebert, February, 2014). Table 7 outlines the descriptive variables for the respondents.

Table 7: Demographic Variables for the Nurse Participants (N=141)

Demographics	N	Percent
Age		
20-25	**9**	6.4%
26-30	**23**	16.3%
31-35	**22**	15.6%
36-40	**30**	21.3%
41-45	**19**	13.5%
46-50	**14**	9.9%
>50	**24**	17.0%
Gender		
Female	**120**	85.1%
Male	**16**	11.4%
Gender Unreported	**5**	3.6%
Education		
Diploma RN	**44**	31.2%
Bachelor of Nursing	**85**	60.3%
Other	**11**	7.8%
Education Unreported	**1**	0.7%

Clinical Vignettes

The results of the clinical vignettes were relevant to answering research question #1 and inform research questions #2 and 3. The clinical vignettes were developed into three sections that were consistent with patient flow in the clinical practice units and included early hospital care, hospital stay and discharge. It was unclear if the nurse participants perceived importance of pluralistic knowledge sources would differ significantly among and across these three sections. Therefore, the appropriate statistical tests (e.g. Wilcoxon signed-ranked test) were used to determine the statistical differences for each knowledge source in the ‘most likely’ and ‘most desirable’ scenario as well as for the mean overall score for each knowledge source (Table 8).

Nurse respondents rated their perceived importance of six knowledge sources in clinical practice encounters in a ‘most likely’ and a ‘most desirable’ clinical scenario of one of the three

clinical vignettes. The level of congruence between the ‘most likely’ and ‘most desirable’ responses was expected as an indicator of the ability of nurse respondents to discriminate between the two scenarios as well as a source of tension for the nurse participants. A pilot (as described in detail in Chapter 3) demonstrated that the nurse respondents were able to discriminate between a ‘most likely’ and a ‘most desirable’ clinical encounter as depicted in a clinical vignette.

The total possible score for each of the six knowledge sources contained within each section (early hospital care, hospital stay, and discharge) of each clinical vignette was 5 units (5 units for the most likely scenario and 5 units for the most desirable scenario). The overall total possible score was 15 units per knowledge type and for each ‘most likely’ and’ most desirable’ scenario (i.e. total possible score was 15 units for each knowledge type in the ‘most likely’ scenario and 15 units for each knowledge type in the ‘most desirable’ scenario).

The mean score for each knowledge type increased from a ‘most likely’ to a ‘most desirable’ scenario for each of the three sections of the vignette (early hospital care, hospital stay, and discharge) as well as overall. The mean differences of the knowledge sources were statistically significance with the exception of esthetic, sociopolitical and unknowing knowledge sources during the hospital discharge section. Please refer to Table 8 that compares the ‘most likely’ and ‘most desirable’ mean scores for each knowledge domain and section of the clinical vignettes,

An additional post hoc analysis (analysis of variance) was undertaken comparing knowledge sources. Overall, no statistical difference (comparisons expressed as p-value using Tukey's Multiple Comparison Correction) no statistical differences between empirical and

esthetic knowledge sources and between empirical and personal knowledge sources. Please refer to Appendix L for complete results of this analysis.

Table 8: Statistical Differences for Each Knowledge Source: Most Likely and Most Desirable Scores between Knowledge Sources N = 141

Knowledge Source	Most Likely Mean (& SD)	Most Desirable Mean & (& SD)	P-Value	Knowledge Source	Most Likely Mean (& SD)	Most Desirable Mean & (& SD)	P-Value
Early Hospital Care				**Hospital Stay**			
Empirical	4.32 (0.83)	4.61 (0.67)	<0.0001	Empirical	4.40 (0.77)	4.58 (0.61)	0.0018
Esthetic	4.34 (0.76)	4.56 (0.65)	<0.0001	Esthetic	4.31 (0.78)	4.50 (0.68)	0.0020
Moral/Ethical	3.91 (0.94)	4.31 (0.84)	<0.0001	Moral/Ethical	4.08 (0.89)	4.26 (0.88)	0.0058
Sociopolitical	3.73 (1.11)	3.96 (1.15)	0.0066	Sociopolitical	3.86 (1.04)	4.01 (1.11)	0.0211
Unknowing	3.81 (0.86)	4.29 (0.82)	<0.0001	Unknowing	3.73 (1.08)	3.94 (1.10)	0.0003
Personal	4.26 (0.82)	4.42 (0.81)	0.0134	Personal	4.27 (0.77)	4.45 (0.75)	0.0016
Discharge				**Total**			
Empirical	4.41 (0.73)	4.58 (0.59)	0.0020	Empirical	4.38 (0.53)	4.59 (0.45)	<0.0001
Esthetic	4.41 (0.73)	4.50 (0.70)	0.1361	Esthetic	4.35 (0.62)	4.52 (0.52)	0.0002
Moral/Ethical	4.07 (0.86)	4.37 (0.81)	<0.0001	Moral/Ethical	4.03 (0.72)	4.32 (0.67)	<0.0001
Sociopolitical	4.15 (0.72)	4.27 (0.84)	0.0832	Sociopolitical	3.91 (0.74)	4.08 (0.87)	0.0008
Unknowing	3.80 (1.04)	3.93 (1.11)	0.0906	Unknowing	3.79 (0.80)	4.06 (0.87)	<0.0001
Personal	4.28 (0.77)	4.47 (0.74)	0.0049	Personal	4.27 (0.63)	4.44 (0.64)	0.0001

*****All comparisons were made using the Wilcoxon signed-rank test

In summary, in relation to research question #1 the hypothesis was partially supported in that the overall mean scores for empirical knowledge were consistently ranked by the nurse

participants as the most important knowledge source in the ‘most likely’ and ‘most desirable’ scenarios (as indicated by an increase in mean score). However, further post hoc analyses demonstrated that there were no statistically significant differences between empirical and esthetic knowledge sources and between empirical and personal knowledge sources suggesting that the nurse participants in this study perceived these knowledge sources as important to them in clinical practice.

The CWEQ-II

The 19 item CWEQ-II questionnaire is intended to measure six components of structural empowerment and includes opportunity, information, support, resources and formal power and informal power). Items on the six components are summed and averaged to provide a score for each component (range of 1 to 5 units). The six scores are then summed to create a total empowerment score (range of 6 to 30 units). Higher scores represent higher perceptions of empowerment. Construct validity of the tool has been confirmed and has been reported elsewhere (Laschinger, Finegan, Shamian, & Wilk, 2001). The relationship between the results of the nurse participants’ scores on the CWEQ-II and the clinical vignettes address research questions 2 and 3.

Total structural empowerment score

The overall total structural empowerment score in this study suggested that 141 nurses across all four clinical settings (i.e. Cardiac Sciences, Community ICU, Tertiary ICU and Other) perceived their work environments to be moderately empowering (M = 20.34, S.D 3.15). A moderate empowerment score has been reported to be within this range (Kluska, Laschinger, & Kerr, 2004). Clinical practice nurses in this study perceived that they had the greatest access to opportunity (M = 4.06, SD = 0.72) and the least access to information (M = 2.87, SD = 0.94).

The total empowerment scores for the CWEQ-II as well as the mean and standard deviation scores for the scales and sub-scales (opportunity, information, support, resources, formal power and informal power) are located in Tables 9 and 10. The Intensive Care Cardiac Surgery Unit was included in two separate analyses: (a) as part of the WRHA Cardiac Sciences Program and (b) as part of the Tertiary Intensive Care Units. These comparisons were made as the unit is unique in that it is part of the WRHA Cardiac Sciences Program but is also considered a tertiary level ICU.

Table 9: Average CWEQ-II Scores by Clinical Area

Clinical practice area	N = 141	CWEQ-II Score (mean and SD)
Cardiac Sciences vs. any other unit	40 101	19.57 (2.93) 20.66 (3.21)
*Cardiac Sciences Community ICU Tertiary ICU Other	40 25 64 12	19.57 (2.93) 19.92 (2.85) 20.86 (3.15) 21.08 (4.09
Cardiac Sciences Community ICU **Tertiary ICU ***Other	25 25 79 12	20.00 (3.15) 19.92 (2.85) 20.46 (3.12) 21.08 (4.09)

*Cardiac Surgery Intensive Care unit included in Cardiac Sciences
**Cardiac Surgery Intensive Care Unit included in Tertiary ICU
***Other – did not specify clinical practice area or indicated they worked in a float pool

Table 10: CWEQ-II Scales and Sub-Scales: Means and Standard Deviations

Variable	***Mean***	***SD***
Total Structural Empowerment (score range 6-30 units)	20.34	3.15
Opportunity (score range 1-5 units)	4.06	0.72
Resources (score range 1-5 units)	3.44	0.94
Support (score range 1-5 units)	3.19	0.81
Information (score range 1-5 units)	2.87	0.94
Formal Power (score range 1-5 units)	3.00	0.86
Informal Power (score range 1-5 units)	3.80	0.68

Univariable analysis

Univariable analyses (CWEQ-II, nurse participant demographics and knowledge sources) were undertaken to address research question #2. An analysis was conducted to determine the relationship between the nurse participants' demographic variables (age, gender, education level, years of clinical experience and clinical practice area) and the total empowerment score obtained by the nurse participants on the CWEQ-II. The only significant variable identified in this analysis was tertiary ICU vs. Cardiac Sciences, where nurses employed in tertiary ICUs had an average total empowerment score that was 1.3 times (beta coefficient = 1.29) higher than clinical practice nurses employed in the WRHA Cardiac Sciences Program (Table 11).

Table 11: Univariable Analysis: Demographics and Total Empowerment Score

Demographics	**Beta Coeff**	**Std Err**	**P-Value**
Age Group (Continuous)	0.091	0.150	0.5458
Age Group (Categorical)			
20-25 vs >50	0.485	1.271	0.7032
26-30 vs >50	-0.755	0.973	0.4395
31-35 vs >50	-0.565	0.973	0.5624
36-40 vs >50	0.531	0.914	0.5626
41-45 vs >50	0.356	1.025	0.7291
46-50 vs >50	0.053	1.155	0.9638
Female	-0.810	0.935	0.3877
Educational Level			
Diploma RN vs. Bachelor of Nursing	-0.333	0.613	0.5882
Other vs. Bachelor of Nursing	0.546	1.066	0.6091
Years of Clinical Experience (Continuous)	0.035	0.029	0.2342
Current Practice Area			
Any Other Unit vs. Cardiac Sciences*	1.089	0.596	0.0699
Current Practice Area			
Community ICU vs. Cardiac Sciences	0.353	0.823	0.6685
Tertiary ICU vs. Cardiac Sciences	1.290	0.646	0.0481
Other Unit vs. Cardiac Sciences	1.513	1.034	0.1458
Current Practice Area			
Community ICU vs. Cardiac Sciences	-0.080	0.927	0.9317
Tertiary ICU vs. Cardiac Sciences	0.455	0.746	0.5431
Other Unit vs. Cardiac Sciences**	1.080	1.123	0.3379

*Cardiac Surgery Intensive Care unit included in Cardiac Sciences
**Cardiac Surgery Intensive Care Unit included in Tertiary ICU

A univariable analysis of the relationship between the total empowerment score and the six knowledge sources was undertaken. Results revealed that the higher the ‘most likely’ score for each knowledge source led to the following conclusions: 1) the higher the ‘most likely’ score, the higher the total empowerment score, 2) the larger the difference between the perceived importance of the six knowledge sources between the ‘most likely’ and the ‘most desirable’ scenario, the lower the total empowerment score and 3) a higher ‘most desirable’ score was associated with higher levels of empowerment (Refer to Appendix M, Tables 1 to 4.

Multivariable analysis

Stepwise multivariable regression revealed that 20.3% of the variance in SE was explained by the larger the average difference (i.e. all sections and knowledge sources combined)

between the ‘most likely’ and ‘most desirable’ scores and the personal knowledge source in the ‘most likely’ scenario of a clinical vignette demonstrated by the regression model outlined in Table 12.

Table 12: Structural Empowerment Stepwise Regression Model

Variable	Beta Coeff	Std Err	P-Value
Intercept	16.419	2.031	<0.0001
All Sections Combined (Average) - Grand Difference	-2.381	0.700	0.0009
Personal Knowledge Source – ‘Most Likely’	1.188	0.432	0.0068
R-Squared:	20.3%		

Model: Predicted Total Empowerment = 16.419 + (-2.381)*Average Grand Difference + 1.188*Personal Most Likely Score

In summary, in relation to research question #2, the hypothesis was supported in that the larger the difference between the most likely and most desirable knowledge sources for each section (early hospital care, hospital stay, and discharge), and all sections combined, the lower the total empowerment score obtained by the nurse participants on the CWEQ- II. Stepwise multivariable regression revealed that 20.3% of the variance in structural empowerment was explained by the grand difference between the most likely and most desirable scores and the personal knowledge source in the most likely scenario of a clinical vignette (higher differences between the ‘most likely’ and ‘most desirable’ and lower personal knowledge sources led to lower perceived SE).

CWEQ-II scales and sub-scales

A univariable analysis of the overall relationship between the six structural empowerment scales and sub-scales of the CWEQ-II with the six knowledge sources revealed variable findings.

The odds of obtaining a low score on the CWEQ-II subscales were dependent on the nurse participants' perceived importance of the six knowledge sources in a 'most likely' scenario. Specifically, the higher the 'most likely' score, the lower the odds that a participant would have a low empowerment score on the CWEQ-II subscales (opportunity, resources, support, information, formal power and informal power). The analysis also demonstrated that the higher the difference between the 'most likely' and 'most desirable' knowledge sources scores, the more likely the odds of the respondent having a low empowerment score on the CWEQ-II scales and sub-scales (Table 13).

Further analysis demonstrated that the scales and sub-scales on the CWEQ-II did not follow a normal distribution pattern as described by the Kolmogorov Smirov (refer to Appendix N). Based on the non-normality of the data distribution, multivariable logistic regression was undertaken, converting the continuous variables into dichotomous variables (score of 1 to 3 units = low, and 4 to 5 units = high) (Personal Communication, Mr. Brett Hiebert, March 26, 2014). Multiple stepwise logistic regression models were used to determine the relationship of each CWEQ-II scales and sub-scales with each of the six knowledge sources and addressed research question #3. Although results were quite variable, a trend is this analysis was that larger differences between 'most likely' scores for a particular knowledge source and larger differences for 'most desirable' scores for a particular knowledge source led to lower empowerment scores on scales and sub-scales. The importance of the three vignette sections and type of knowledge source also varied for this analysis. Please refer to Appendix O for the complete logistic regression analysis.

Table 13: Odds Ratios & 95% CI for Predicting CWEQ-II Scales and Subscales <4

Domain	Predictor	Opportunity	Information	Resources	Support	Formal Power	Informal Power
Empirical	**Most Likely**	0.26 (0.13 – 0.55) ǂ	0.71 (0.31 – 1.64)	0.54 (0.27 – 1.07)	0.26 (0.11 – 0.63) ǂ	0.48 (0.21 – 1.14)	0.50 (0.25 – 0.98)*
	Difference	4.24 (1.79 – 10.08) ǂ	1.29 (0.46 – 3.58)	1.20 (0.53 – 2.69)	6.70 (1.94 – 23.19) ǂ	1.47 (0.53 – 4.06)	1.84 (0.82 – 4.10)
Esthetic	**Most Likely**	0.36 (0.19 – 0.66) ǂ	0.76 (0.37 – 1.57)	0.97 (0.55 – 1.69)	0.44 (0.21 – 0.93)*	0.51 (0.24 – 1.12)	0.70 (0.40 – 1.24)
	Difference	2.65 (1.25 – 5.63)*	1.22 (0.48 – 3.14)	1.33 (0.63 – 2.81)	5.29 (1.55 – 18.06) ǂ	2.52 (0.84 – 7.54)	2.26 (1.04 – 4.89)*
Moral/ Ethical	**Most Likely**	0.80 (0.49 – 1.31)	0.35 (0.17 – 0.75) ǂ	0.69 (0.42 – 1.15)	0.52 (0.28 – 0.96)*	0.45 (0.23 – 0.90)*	1.00 (0.62 – 1.59)
	Difference	2.20 (1.11 – 4.37)*	2.07 (0.80 – 5.36)	1.91 (0.93 – 3.91)	3.38 (1.30 – 8.78)*	2.79 (1.04 – 7.52)*	2.09 (1.05 – 4.18)*
Socio-political	**Most Likely**	0.85 (0.53 – 1.36)	0.37 (0.18 – 0.75) ǂ	0.60 (0.36 – 0.99)*	0.46 (0.25 – 0.84)*	0.45 (0.24 – 0.87)*	0.79 (0.50 – 1.25)
	Difference	2.06 (1.11 – 3.81)*	1.80 (0.76 – 4.27)	1.78 (0.92 – 3.44)	4.66 (1.71 – 12.70) ǂ	1.37 (0.64 – 2.97)	2.32 (1.20 – 4.49)*
Unknowing	**Most Likely**	1.02 (0.65 – 1.58)	0.42 (0.22 – 0.80) ǂ	0.61 (0.38 – 0.97)*	0.46 (0.26 – 0.81) ǂ	0.58 (0.33 – 1.03)	0.89 (0.58 – 1.37)
	Difference	3.68 (1.70 – 7.94) ǂ	2.16 (0.80 – 5.83)	1.83 (0.86 – 3.87)	6.55 (2.13 – 20.13) ǂ	1.82 (0.71 – 4.62)	2.34 (1.11 – 4.91)*
Personal	**Most Likely**	0.59 (0.34 – 1.05)	0.36 (0.16 – 0.84)*	0.61 (0.34 – 1.09)	0.24 (0.11 – 0.56) ǂ	0.40 (0.18 – 0.89)*	0.65 (0.37 – 1.13)
	Difference	6.00 (2.31 – 15.55) ǂ	2.66 (0.80 – 8.88)	1.59 (0.67 – 3.77)	4.49 (1.38 – 14.66)*	2.96 (0.90 – 9.71)	3.12 (1.28 – 7.61)*
Total	**Most Likely**	0.49 (0.24 – 0.99)*	0.28 (0.11 – 0.71) ǂ	0.49 (0.25 – 0.99)*	0.23 (0.10 – 0.55) ǂ	0.31 (0.13 – 0.75) ǂ	0.65 (0.34 – 1.26)
	Difference	5.99 (2.21 – 16.27) ǂ	2.58 (0.72 – 9.30)	2.18 (0.83 – 5.69)	17.28 (3.49 – 85.68) ǂ	3.09 (0.86 – 11.11)	3.85 (1.45 – 10.26)*

Note: ǂP=Value < 0.01; *P=Value < 0.05

For formal power, higher scores across all knowledge sources for the ‘most likely’ scenario in the hospital stay section of the clinical vignettes was associated with a lower odds of obtaining a lower sub-scale score (OR 0.350, p = 0.0082). For informal power, larger differences between the ‘most likely’ and ‘most desirable’ perceived importance of all six knowledge sources was associated with a higher odds of achieving a lower empowerment sub-scale score (OR 4.010, p= 0.0059).

In summary, stepwise multivariable regression revealed that 20.3% of the variance in SE was explained by the grand mean difference between the ‘most likely’ and ‘most desirable’ scores and the personal knowledge source in the ‘most likely’ scenario of a clinical vignette.

Specifically, higher differences between the ‘most likely’ and ‘most desirable’ and lower personal knowledge sources in the ‘ most likely’ scenario led to lower perceptions of SE.

QUALITATIVE ANALYSIS

The researcher's analysis of thirteen qualitative interviews identified three themes and six categories that capture the nurse participants' experiences in how they value and use knowledge in clinical practice. The qualitative data provides valuable insight into the interpretation of quantitative findings (i.e. for research questions one, two and three). The qualitative findings also enhance the researcher's understanding of how clinical practice nurses describe and use various knowledge sources in their practice and personal consequences when their work environments are not perceived as supportive in the use of knowledge sources that are important to them. To review, four research questions are addressed in this dissertation:

1) For clinical practice nurses', employed with the Adult Critical Care and Cardiac Sciences Programs within the Winnipeg Regional Health Authority (WRHA), what is the perceived importance of various knowledge sources in a most likely and a most desirable clinical encounter as depicted in a clinical vignette? A secondary objective is to determine if the knowledge source 'unknowing' is understood and perceived as important by the nurse participants.

Hypothesis: Nurses perceived empirical knowledge as the most important knowledge source.

2) What is the relationship between the total empowerment scores and the level of congruence in clinical practice nurses' perceived importance of knowledge sources in a most likely and most desirable clinical encounter as depicted in a clinical vignette?

Hypothesis: Lower total structural empowerment scores are associated with larger differences between the perceived importance of knowledge sources (i.e. larger differences between the most likely score and the most desirable score for perceived importance of each knowledge source).

3) What is the relationship between empowerment structures (opportunity, information, support, resources and formal and informal power) and nurse participants' perceived importance

of knowledge sources as depicted in ‘the most likely’ or ‘most desirable’ scenarios contained within the clinical vignette?

4) What are the lived experiences of nurses as it relates to the use of pluralistic knowledge sources and the potential tensions described by clinical practice nurses when their preferred knowledge sources do not match clinical realities?

The following objectives guided the qualitative analyses of this mixed methods study: (a) to describe the lived experiences of nurses’ use of multiple knowledge sources in clinical practice, (b) to identify factors that support nurses’ preferred knowledge sources in clinical practice, and (c) to understand the tensions or consequences that clinical practice nurses may experience when a disconnect exists between their preferred knowledge source(s) in clinical practice vs. clinical reality. Please refer to Chapter 3 for a complete description of the processes undertaken to analyze the thirteen qualitative interviews.

Table 14 outlines the characteristics of the 13 nurse participants in the qualitative interviews and includes: (a) nurse gender, (b) years of clinical experience, and (c) clinical practice areas. The main qualitative research question and objectives guided how the data analysis was organized and presented and included: (a) the nurse participants’ lived experiences related to knowledge use in clinical practice, (b) a description of the factors that were perceived as supportive to the nurse participants in their use of pluralistic knowledge sources in clinical practice, and (c) a description of the consequences identified by nurse participants when their preferred and actual use of knowledge in clinical practice was not congruent.

Table 14: Characteristics of Clinical Practice Nurse Participants (N = 13)

Interview Number	**Gender**	**Total Years of Clinical Experience**	**Clinical Practice Areas**
1	Female	22	Cardiac Sciences/Community ICU
2	Female	14	Tertiary ICU
3	Female	3	Cardiac Sciences
4	Female	37	Cardiac Sciences
5	Female	41	Community ICU
6	Female	<1	Cardiac Sciences
7	Female	26	Community ICU
8	Female	6	Tertiary ICU
9	Female	30	Tertiary ICU
10	Female	16	Tertiary ICU
11	Female	3	Cardiac Sciences
12	Female	30	Tertiary ICU
13	Female	7	Cardiac Sciences

The majority of the interviews were between twenty and thirty minutes in length and for the vast majority of the nurse participants, the interviews were conducted during their hours of work over their lunch hour. Between work and family commitments, clinical practice nurses who participated in this study were busy. The researcher had hoped that the twenty minute time limit for each interview would entice busy clinical practice nurses to participate; this resulted in the successful recruitment of 13 participants. The semi-structured interview guide developed by the researcher was helpful to structure the interview and to keep the interview within the desired time limit. However, the researcher felt that the time limit did not allow for meaningful probing or further exploration of the phenomena under investigation. As a result, the analysis presented in this chapter is limited in the ability to provide more detailed descriptions that are consistent with a qualitative approach.

The 13 qualitative interviews had three themes and six categories in common (Figure 3). The analysis and verbatim quotation from nurse participants provide the reader with a thorough description of these common themes and categories. This allows the reader, as well as the investigator, the privilege of gaining an understanding of the perceptions of this study's participants as they relate to nurses' knowledge use in clinical practice.

Figure 3: Common Themes and Categories across the 13 Interviews

Objective I Participants Lived Experiences related to Knowledge use in Clinical Practice

Theme: Clinical Context

Categories:

1.1 Valuing the Lived History of Patients

1.2 Core Knowledge

1.3 Clinical Judgment

Objective II Factors that Support Nurses' Preferred Knowledge Sources in Clinical Practice

Theme: Validating Findings

Categories:

1.1 Mentorship and Nursing Colleagues

1.2 Gut Feeling: The Role of Intuition

Objective III Nurses' Preferred Practice Environment vs. Clinical Reality

Theme: Fostering a Best Practice Environment

Category:

1.1 Organizational context and structure of nursing work

Participants Lived Experiences Related to Knowledge use in Clinical Practice

The first objective for conducting the qualitative interviews was to obtain an overall sense of what types of knowledge sources clinical practice nurses used in daily practice. Examples of all six knowledge sources were apparent in one or more of the nurse participant's interviews. In addition intuition was described as important by the majority of the nurse participants. In addition, the nurse participants described the circumstances or situations within their work environments that they perceived as important to what types of knowledge sources they identified as important in providing nursing care. One major theme (the clinical context) and its underlying categories (i.e. valuing the lived history of patients, core knowledge, and clinical judgment) were derived across the 13 qualitative interviews. The following describes the lived experiences of the nurse participants as it relates to their perceptions of knowledge sources used in their clinical practices.

The Clinical Context

The theme of clinical context captured nurse participants' responses regarding their perceptions of priorities in patient care and the sources of knowledge that they required to address perceived priorities. Nurse participants identified the importance of providing safe patient care and were able to articulate their use of various knowledge sources to provide safe patient care that was influenced by the clinical context. Factors were identified by nurse participants in how they approached patient care decisions and included the acuity of the patient, the urgency of the clinical situation, and whether the knowledge needed to engage in clinical decision-making was readily available to the nurse in his or her practice setting. The familiarity of the nurse participant with how a 'typical' illness trajectory may unfold was particularly

important in what type of knowledge sources they would most likely reference as highlighted in this participant interview excerpt.

> Just this past weekend, I had a patient with pancreatitis and I had taken care of many, many pancreatitis patients. I know how sick they can get and I know the pathophysiology from seeing it and learning it through the ICU course, about fluid shifts and the kind of complications that you can expect, and so I was able to explain to the patient's family this is what I have seen, this is what you can probably expect (I2,July23,2013,p.2).

The experience of having worked through each unique clinical situation was incorporated into the nurse participants' repertoire of knowledge. The knowledge gained from each encounter provided the nurse participants with valuable information and experiences related to what was successful, what was new (what they did not know before) and what were the typical patient outcomes. The knowledge that the nurse participants gained from their past clinical encounters provided them with valuable information that influenced their ongoing approach to clinical decisions and approach to patient care.

> We use all kinds of knowledge, we use knowledge that we've learnt in nursing school and knowledge that is practice and tried and things that work and things that don't work for specific situations. So we are always learning new ways… or known treatments to give and why old ones don't work anymore…. (I11,May21,2013,p.1).

Valuing the lived history of patients

The category of valuing the lived history of patients captured how nurse participants viewed each patient as unique as reflected by the patient's unique life history, their values and understanding, and their response to their illness. Nurse participants described the importance of being able to critically appraise the research literature and being able to apply research findings to the clinical realities of patients in their care. In essence, nurse participants described their appreciation for how knowledge sources varied according to each individual patient's situation. The process of determining the best course of action to guide patient care was described by nurse

participants as a ‘real art’ that involved a high level of complexity where they needed to draw on multiple knowledge sources to determine the most appropriate and safest care options.

Getting to know each patient and his or her family was described by nurse participants as being essential in making clinical decisions about nursing care and ensuring each patient and family member is treated with respect. Getting to know patients was accomplished when the nurse participants conducted assessments of their patients’ and families’ readiness or receptivity to receive information and obtained knowledge of their past experiences with managing their health concerns. It was important for nurse participants to gain an understanding of each patient as an individual with a unique life history.

> It’s not a person in the bed unless you talk to them a little bit; know a little bit of their history, whether they have family or no family. I don’t think you can treat the whole patient without knowing something about that patient; they just become a body in the bed…So you have this person lying in the bed who’s had a whole life and a history. I don’t think you can treat them humanely if you don’t get to know them a little bit (I12,July24,2013,p.5).

Core knowledge

The category of core knowledge was relied upon by the majority of the nurse participants in their clinical encounters. Nurse participants described that their core knowledge was obtained in nursing education programs, either during entry level education or through specialized programs (e.g. during their intensive care nursing course). Core knowledge was not about one specific knowledge source, but rather provided nurse participants with a breadth of knowledge related to theory, pathophysiology, clinical skills and approaches to patient care. Some examples of core knowledge were described by nurse participants as learning the principles of aseptic technique, how to take and how to interpret blood pressure readings or how to deal with certain families (e.g. conflicting family dynamics).

The source of core knowledge was readily described by nurse participants. For example, core knowledge included standards of nursing practice, guidelines, or the psychomotor component of clinical skills learned during entry level training or in the intensive care course. In relation to other knowledge sources, core knowledge was viewed as less esoteric as described by one nurse participant:

> I think anytime you deal with patients there are standards of care, there are standards of practice, there are standards around guidelines…I think there are always the core principles that need to be maintained around patient care [I1,May1,2013,p.2].

Core knowledge provided the nurse participants with a solid foundation to base their decision making upon to provide optimal and safe care. However, over time and with increasing confidence in their knowledge and skills, nurse participants described that their core knowledge was combined with other knowledge sources and experiences gained over the course of their nursing careers. Clinical experience was often the catalyst for further understanding and meaning of care knowledge. One nurse participant described:

> So you had a year of nursing experience and then you would be given 2 days of education and that was supposed to be enough to take these post-operative heart patients. So then taking the course after a couple years into that was really beneficial because I was like 'oh, well that's why that happened' or 'maybe I should have done this differently' things just made sense, especially the hemodynamic theory portion (I10,June 25,2013,p.2).

Clinical judgment

Nurse participants said that there was an 'art' to their clinical judgment or, in other words, how they understood, used and integrated knowledge. The integration of knowledge gained from nursing assessments was important to the nurse participants' approach in arriving at clinical judgments about appropriate patient care and decisions, and how they prioritized aspects of the care offered to patients.

The ‘fit’ or lack of research guidelines to real patients led to the use of a variety of knowledge sources by the nurse participants. For example, if nurse participants found that recommendations in clinical practice guidelines did not fit a particular patient, they tended to rely on their past clinical experiences to guide care decisions. In these situations, personal knowledge obtained from a variety of sources facilitated nurse participants’ decision making.

The personal knowledge gained by the nurse participants from their nurse-patient relationships and through their own personal life experiences facilitated their care decisions especially when they perceived a lack of congruence between guideline recommendations and clinical realities. This personal knowledge and past clinical experience allowed nurse participants to “do the right thing” for each particular patient, whether providing care or displaying empathy. Personal knowledge was described by one nurse participant as encompassing everything that one does for a patient that includes how one approaches a particular clinical situation and the type of care one provides to the patient:

> I think the knowledge we gain through personal experience, I mean you can have some life moving experience, or I think just knowing how to communicate to patients at certain times on certain situations, you know the best way to do it, or you kind of have empathy and feel what they’re feeling and know what the right thing to say is. You know what can relieve their stress, jut knowing the right thing (I5,July11,2013,p.3).

> The one thing I rely on most is my personal experiences…I think it’s everything you do, how your approach your day, how you set it up, how you go in and look and actually whether your patient is stable or showing signs of deterioration (I10,June25,2013,p.4).

Factors that Support Nurses’ Preferred Types of Knowledge in Clinical Practice

The second objective for conducting the qualitative interviews was to identify factors or resources that nurse participants perceived as supportive to their use of various knowledge sources in clinical practice. The thirteen nurse participants readily identified these factors and resources and this is captured by one theme (validating findings) and two underlying categories

(mentorship and nursing colleagues and gut feeling: the role of intuition). The following describes these factors and resources perceived to be important by the nurse participants in their ability to use their preferred knowledge sources in practice.

Validating Findings

The theme of validating findings captures how nurse participants relied on other colleagues to validate their clinical findings and proposed plans of care for patients. Validating findings by nurse participants appeared to be especially important when there was a paucity of research literature to support their clinical decisions. Nurse participants also relied on nursing colleagues when they were faced with a clinical situation that was new, whether it was a new skill or how to approach family members (e.g. dealing with family members who are conflicted over the best course of treatment for a patient). Although nursing colleagues were identified as the primary source for validation, validation also occurred with other members of the healthcare team including physician colleagues.

The opportunity for nurse participants to get to know their patients increased their opportunities to confirm perceived important patient or family data. These opportunities were dependent upon time, nurse-to-patient ratios and available unit resources. The ideal was described by nurse participants as the ability to have the same patient assignment for more than one day. However, consistent patient assignments for the nurse participants occurred less often than they would have preferred due to operational and human resource issues as described by one nurse participant:

> It is becoming less so [having the same assignment for more than one shift]. Staffing issues are affecting that and because of that it's affecting work satisfaction as well. Where I work it is typically more 1:1 nursing, but a more stable patient would be doubled so you would have 2 patients and our assignments get moved a lot to accommodate doubles and staffing issues (I2,July 22,2013,p.13).

Mentorship and nursing colleagues

The category of mentorship and nursing colleagues describes how nurse participants viewed clinical educators and other nurse colleagues as important mentors. Mentorship was particularly important for nurse participants when they sought specific, clinically relevant information or needed to confirm or validate their clinical findings. For the most part, mentors were senior nurses who had extensive clinical expertise in a particular clinical area. A mentor was a nurse who provided a safe environment, was approachable and methodical in his or her approach to patient care and made patient safety a priority as described in the following nurse participant interview excerpt:

> Some people will always choose to do the absolutely safest thing, are very, very careful in their decision making and I value that very much because patient safety is paramount. When I recognize that in someone, I value that (I7,July4,2013,p.3).

The type of knowledge that nurse participants sought from their mentors appeared to be dependent on the clinical context. With the complexity and diversity of clinical situations, clinical educators and nurse colleagues (in particular senior nurses) were seen to have developed expertise related to a wide range of clinical situations ranging from knowledge about a particular illness, how to perform a particular skill, how to deal with a particular family situation, or what was best practice related to a specific nursing topic.

Mentors also fulfilled an important role in being the ‘second eye’ who was able to validate nurse participants’ physical assessments or proposed course of action in patient care. The ability of nurse participants to confer with other nursing colleagues was highly valued. Confirmation and validation with mentors did not occur in isolation of other activities that also included online searching as well as reviewing existing policies and procedures. For one nurse participant, a colleague’s validation of her physical assessment or proposed course of action was

viewed as important in addition to evidence-based resources available to her on the clinical unit. The following excerpts from nurse participants' interviews demonstrate the importance of mentorship in their respective nursing practices:

> I would generally confer with colleagues. That mentorship piece is also important as a way of validating not necessarily what I do, but if what I'm seeing is confirming what somebody else is seeing (I1, May1, 2013, p.4).

> The other resources I would use is other nurses because I find that a lot of times other nurses have a lot of good knowledge and sharing of that knowledge is really valuable to me. The medical team, I definitely learn a lot from the medical team discussing cases and problem solving through them and that's the whole medical team: pharmacists, physicians, physiotherapists, all of those people who participate in resources for getting the patient the appropriate ethical care (I5,July11,2013,p.1).

The gut feeling: the role of intuition

Nurse participants described the importance of intuition in focusing nursing care. Intuition was described as a 'gut feeling' or a 'spidey sense' that something was not quite right with a particular patient. Intuition was not articulated by the nurse participants as a particular knowledge source, but rather as a cue that led to further, focused nursing assessments.

For the majority of nurse participants, cues involved very subtle, but recognizable changes in patients' conditions or were described as concrete, observable changes: for example, a change in cardiac rhythm. Intuition was viewed by the nurse participants as a precursor to action, that involved cognition and action. For example, often cues identified by the nurse participants led to a more structured and focused assessment of a patient's condition that would either refute or validate the nurse's intuitive sense about the patient:

> I think intuition is usually you are seeing clinical signs but maybe not stopping to think about them but you, your brain sees all these things and gives you that feeling like something is going to happen but you have seen clinical signs so usually that intuition makes me look for other clinical signs too like a person who was more alert or perky and they are quiet and tired or something like that, you start thinking 'what is going on?' …I feel like intuition maybe gives you a reason to look more closely at the data

> you are finding, or the vital signs you have done or the assessment that you did (I13, July30,2013, p.4).
>
> When you walk in and you look at someone and you just get goose bumps and a cold sweat and you don't know why and then you take their blood pressure and that is why. Or, you know a patient will look at you and say "I feel like I'm going to die" and then everything, you know you just instantly start doing things you wouldn't normally do like manual blood pressure on both arms and checking pulses in places you never checked pulses and checking the eye movement and pupil dilation… (I3, July15,2013, p.2).

Nurses' Preferred Practice Environment vs. Clinical Realities

The third objective for conducting the qualitative interviews was to determine the consequences for nurse participants when their preferred practice environment related to knowledge use was not congruent with their clinical realities. One theme (fostering a best practice environment) and one category (organizational culture and structure of nursing work) describe nurse participants' preferred practice environments vs. clinical realities related to knowledge use in practice.

Fostering a Best Practice Environment

The theme of fostering a best practice environment captured how nurse participants described their work environments as being supportive in their ability to integrate and use various knowledge sources in practice. Nurse participants identified aspects of their work environments that influenced their perceptions of their work environments. The category 'organizational culture and structure of nursing work' depicts how nurse participants described professional and personal consequences that occurred when there were discrepancies between their preferred and actual practice environments that impacted nurses' integration and use of pluralistic knowledge sources.

Organization context and structure of nursing work

The category of organizational context and structure of nursing work illustrates how organizational factors were perceived as important to a supportive work environment that allowed nurse participants to embrace various knowledge sources in their decision making about patient care. Nurse participants identified the structure of nursing work as particularly important in their ability to provide patient focused and safe care. The structure of nursing work was described by nurse participants as their experiences with consistency in their nursing assignments and working with an appropriate staff mix (e.g. a mix of junior, senior or casual nurses per shift). In particular, for nurses employed in a critical care setting, low nurse-to-patient ratios (1:1 or 2:1) afforded nurse participants the opportunity to get to know their patients and patients' families.

For nurse participants, the ability to get to know patients as a 'whole' person was often viewed as a privilege. Nurse participants described that lower nurse-to-patient ratios were important to help nurses to identify subtle changes in patients' conditions. This in turn, facilitated the nurses' ability to engage in early detection in order to either avert or treat health related issues or complications in a timely fashion. Moreover, knowing patients decreased nurse participants' uncertainty in how they decided to intervene in a particular clinical situation. The importance of getting to know patients was described in the following nurse participants' interview excerpts.

> Sometimes patients start to say things that are a little off and they're oriented technically but they're starting to say things that are a little funny and the doctor will come and assess them for 30 seconds and they will say all the right things. But I'm there at the bedside and I see the subtle changes in behavior and lo and behold, the patient is in vasospasm (I2, July22,2013, p.2).

Nurse participants also described that how organizations integrate and perceive nursing knowledge sources and skills was an important element of a supportive work environment. Nurse participants described several characteristics of this type of organization: it should demonstrate a

visible trust in nurses' decision- making, it fosters and recognizes nurses' voices in making decision related to patient care, and it promotes nurse autonomy and latitude to draw on varied knowledge sources in providing optimal patient care.

The work environment of the healthcare facilities where the nurse participants were employed was perceived to influence how the organization speaks to and develops structures in support of nursing work and how they makes decisions about patient care. A supportive facility was one that not only integrated, but expected a level of excellence in nursing care. Such a culture valued and respected nurses' contributions to patient care decisions, particularly during inter-professional rounds. One nurse participant described:

> I think you need a culture of promoting that [supportive environment]. I think it's got to be part of how the organization speaks and structures, teaches, so it's got to be part of the fabric of the organization where it's kind of an expectation that this is how nursing practices in this facility (I1, May1,2013, p.6).

When nurse participants viewed decisions about patient care were imposed on them with little input they tended to evaluate this type of decision making more negatively. Consequently, these nurse participants expressed their desire to be more involved as informed 'partners' in practice changes. A lack of involvement in decision making was perceived to be frustrating by nurse participants and contributed to their sense of disconnect between the organization's and the nurse participants' priorities for patient care and their ability to make autonomous nursing decisions based on pluralistic knowledge sources.

Nurse participants felt overwhelmed, confused and at times perceived a sense of helplessness when constant changes occurred in their work environments (e.g. changes to policies and procedures). These negative experiences were linked to nurse participants' belief of not having a clear understanding or rationale for proposed changes or when multiple steps or

processes were involved with the practice change. It was important for nurse participants to comprehend motives for change or improvements in patient safety and care. However, nurse participants described that for the most part, changes in procedures or policies for patient care were incorporated into their existing work without any consultation or solicited input from them. Consequently, nurse participants described that without nurse involvement in changes made to practice, new policies or procedure were not always followed due to clinical realities based on unique patient circumstances that need a range of knowledge sources (but are not necessarily recognized by existing organizational structures, supports, policies or procedures).

> …The ways we account for medications that we're giving. There have been a lot of issues with that recently in the past couple of years. There are certain medications that are high alert that we had to double sign but now almost every single infusion that we hang is a double sign…In reality it's not happening as it's supposed to because it's not really practical. You're working 1:1 for a reason so you don't always have a second person to pull over to check that you programmed the pump right and so that's been pretty frustrating. We don't even know which medications are high alert anymore because there are so many that half the time we're just getting everything signed… (I10, June 25, 2013, p.6).

A lack of time and unfamiliarity with a procedure were identified by nurse participants as important in how they managed constant practice changes. Changes to policies or procedure were particularly stressful during crisis situations, where interventions needed to be quickly and safely executed. The negative emotional consequence of constant change in these situations was somewhat ameliorated when regular staff and nursing colleagues were available for consultation as described here:

> I find that in my unit there is a lot of what education tends to be. Basically it feels like we're chasing our tail. Now this policy changes and now you have to do this differently… this has to be written out a certain way on the form and all of these little things that seem to be changing from week to week…It is really time consuming and confusing when it's not important in the big picture (I8, June 27,2013, p.5).

The ethos of caring is part of an organization‘s culture. Threaded throughout the many examples of caring provided by the nurse participants, was that a caring culture advocated for the dignity and rights of patients. For some nurse participants, a caring culture recognized when care was futile and for other nurse participants a caring culture viewed caring for patients who are at the beginning or at the end of their lives as a privilege. Nurse participants described a myriad of personal and professional consequences when their practice environments were perceived to be uncaring that resulted in feelings of anger, frustration and emotional exhaustion. End-of-life care decisions were particularly stressful for some nurse participants, especially when there was a lack of agreement with a proposed patient’s treatment plan. This type of situation created distress for nurse participants as they sometimes struggled with their role as a patient advocate who needed to do what was perceived to be ethically right for the patient. As one nurse participant shared:

> A lot of things we do, and it’s hard to say from patient to patient where the ethical part sometimes comes in where this patient isn’t doing well and you think ‘ok, if we keeping doing the same procedures, drugs etc to what end?’ …Ethically, that kind of thing plays on you. I would say when you have a patient like that that you think what you’re doing is really harming them more than doing good” (I8, June 27,2013, p.6).

Nurse participants also described the importance of consistency in the healthcare teams’ approach to patient care and to each patient’s treatment plan. Nurse participants acknowledged that clinical staff members are individuals who bring different experiences, knowledge and approaches to patient care. This perhaps may lead to unnecessary changes in patients’ treatments that are not always understood by patients and their families. As a result, the ability of nurse participants, as well as patients and family members, to appreciate and discuss the impact or consequences of one course of action in comparison to another course of action, may not be clear. The importance of a consistent approach to patient care, especially from attending

physicians who have different preferences for treatments or therapies, was articulated in the following nurse participant responses:

> I think all of our doctors come from different backgrounds so they are always kind of bringing new theories and ideas to the table. I would have liked to see there be more consistency in what sources of knowledge we're using; just in general more consistency in the thought process (I11,May 21,2013,p.5).
> We use 25% albumin in our patients, not a lot of physicians believe that works…So we kind of approach the situation with different physicians differently (I11,May 21, 2013,p.2).

In summary, the qualitative data supported the quantitative research findings in how nurse participants perceived the importance of pluralistic knowledge sources in practice. Survey data demonstrated that the nurse participants valued and used various knowledge sources in clinical practice. The qualitative interview data also demonstrated the importance of fostering a best practice environment. A best practice environment was one where the patient was treated with dignity and respect and where patient values and beliefs were taken into consideration in their healthcare decisions. The use of pluralistic knowledge sources may be particularly important to clinical practice nurses in their ability to provide patient focused care.

The clinical situation and context was found to influence the types of knowledge sources used by the nurse participants in the qualitative interviews. Similar findings occurred in the quantitative analysis. Particularly, the importance of knowledge sources identified by the nurse participants varied (e.g. from hospital admission to discharge). The importance and use of various knowledge sources may differ depending on at what point patients are receiving care (i.e. immediately following hospital admission or discharge).

CHAPTER 5: DISCUSSION

Cardiac Sciences and Adult Critical Care nurses have a pivotal role in ensuring safe, evidence-informed care to patients. Nurses' decision-making contributions to patient safety do not occur in isolation; they are part of larger interdisciplinary teams. The research questions for this dissertation were derived from reading the research contributions on patterns of knowing described by Carper (1978), White (1995) and Munhall (1993). The following discussion is organized by the research questions, followed by study limitations and implications for policy, practice and research. Linkages with the conceptual framework are integrated throughout this discussion.

Research Question #1

What is nurses' perceived importance of six knowledge types as depicted in a clinical vignette?

Hypothesis: Nurses would perceive empirical knowledge to be the most important knowledge source.

Clinical Vignettes

The three clinical vignettes were an initial effort to develop an instrument to determine Adult ICU and Cardiac Sciences nurses' perceived importance of six knowledge sources in clinical practice. The vignettes were developed to provide context and meaning to the six knowledge sources using an example to depict each knowledge source.

The clinical vignettes provided a framework for the nurse participants to choose from, with examples that probed the same construct (the six knowledge sources). Although clinical vignettes have been used in other researcher studies (Peabody, Luck, Glassman, Jain, Hansen, Spell & Lee, 2004), to the researcher's knowledge this method has not been employed before to study clinical practice nurses' perceived importance of the use of pluralistic knowledge sources

in clinical practice. Therefore, an assumption was made that nurses would be more inclined to participate in this study if the clinical vignettes provided clinical contexts that were familiar to them. For example, the unstable angina vignette was assumed to be familiar to nurses who worked on the inpatient cardiology unit. This assumption was confirmed as the vast majority of the nurse participants chose to complete a vignette that was representative of their clinical practice.

The vignettes were an initial effort to develop a tool to realize more how clinical practice nurses perceived the importance of pluralistic knowledge in practice. Several factors lend to the conclusion that the vignettes were effective, even in their initial stage of development. The example of each knowledge source in the clinical vignettes appeared to be sufficient for the nurse participants to determine their perceived importance of each knowledge source.

The nurse participants were able to discriminate between a ‘most likely’ and a ‘most desirable’ scenario suggesting that the information and the sequencing of the information provided in the clinical vignettes was logical and clear. Three of the nurse participants who participated in the qualitative component of this study indicated to the researcher informally after their interviews were completed that they did participate in the quantitative component of the study and felt that the vignettes were useful tools to capture pluralistic knowledge sources. Only one participant (i.e. 1/141 nurse participants) remarked on the clinical vignette that she/he did not understand the intent of the clinical vignette and chose not to complete. The following except from a nurse participant during her qualitative interview remarked on the use of the clinical vignettes in this study:

> I think whenever you try to simulate a clinical experience there are always nuances that are going to be missed because it is so relationally based and kind of in the moment. I

> think it is as close as you really can get without actually being in it or observing it. I think it is as close to an actual situation as you could get (I1,May1,2013,p.6).

Although the use of clinical vignettes showed promise in its performance to determine clinical practice nurses' perceived importance of pluralistic knowledge sources in clinical practice there are limitations. The clinical vignettes may not have captured the dynamism of real life situations and may limit the vignette's wider applicability to real life. The example of each knowledge source may be too simplistic to capture the complexities involved in the use of pluralistic knowledge in clinical practice. Carper (1978) acknowledged that the knowledge sources (fundamental patterns of knowing) were inter-related and therefore not mutually exclusive. However, in order to explain each knowledge source in this study it was necessary to provide separate explanations of each knowledge source.

The importance of each knowledge source was measured at each point on a 5-point ordinal scale. Mean scores for each knowledge domain was obtained by summing and averaging the items. The scoring of the vignettes although simplistic was logical. Rubarth's (2005) dissertation study is noteworthy as it lends support to the scoring methods used for the clinical vignettes in this study. Rubath and her dissertation advisor (Reed) developed the nursing patterns of knowing (POK) scale. This scale was developed to explore neonatal intensive care nurses self rated perceptions of the extent they use referenced nursing patterns of knowing in the assessment of newborns with sepsis. The 16 item instrument used a 5-point Likert type scale to assess the use of pluralistic knowledge sources in the assessment of newborns. A total maximum sum score was used to determine the extent of use of pluralistic knowledge in practice.

Additional evaluation of aspects related to validity of the clinical vignettes is required. Gould (1995) describes a three pronged approach to establish internal validity. This approach

advocates for: (1) the development of clinical vignettes from the literature, (2) a review of the vignettes by a panel of clinical experts and (3) pre testing of the vignettes. A logical next step is to use the Delphi method to develop a set of reference statements for each knowledge source. The Delphi method has been used by researchers to build a high level of consensus in the evaluation of research constructs (Twomey, et al., 2014).

Response order effect may occur when the distribution of the results of a survey is influence by the order in which the responses options are offered (Holbrook, 2008). The impact of order effect in clinical vignette research may be different from traditional survey methods. According to Auspurg and Jäckle (2012) there are no straightforward methods to predict the impact of order effects on clinical vignette research. The risk of order effects is low if: (1) the complexity of the task is low, (2) participants have strong attitudes/knowledge of the construct under investigation and (3) when participants are asked two questions about each vignette. One strategy to control the impact of order effect is by presenting different groups of nurse participants with a clinical vignette with the response options in different orders and assessing the effects of order on the nurse participants responses.

In relation to reliability, further research is needed to measure participant burden, i.e. having the nurse participants complete a large set of vignette questions that can impact the reliability of their responses. With further study, the clinical vignettes could become a more validated tool to determine clinical practice nurses perceived importance of pluralistic knowledge sources in clinical practice.

Knowledge Sources

The results of this research study support previous nursing researchers' findings that nurses rely on pluralistic knowledge sources in clinical practice (Berragan, 1998; Estabrooks et

al., 2005; Estabrooks, 1999; Rubarth, 2005; Lee, 2002; Tarlier, 2005). The need for nurses to use pluralistic knowledge sources underpins the complexity of contextual issues in nursing practice. The sole reliance on empirical knowledge associated with contemporary science is fundamental but is not a sufficient base to address contemporary nursing praxis (Tarlier, 2005).

Data from the qualitative interviews revealed that the nurse participants' valued pluralistic knowledge sources in decision-making and the knowledge sources identified as important by the nurse participants was influenced by the clinical context. Clinical context was about the unique experiences of patients, their illnesses and their perceptions and responses to their illnesses. Factors were identified by the nurse participants that facilitated their approach to patien care decisions and what types of knowledge sources were most likely to be used based on these factors. The factors identified by the nurse participants were patient acuity, the urgency of the clinical situation, and whether the knowledge needed to engage in clinical decision-making was readily available.

The survey results demonstrated that in addition to context, the timing of the patient's illness trajectory as experienced in the hospital may have also influenced the types of knowledge sources important to nurses. The perceived importance of pluralistic knowledge sources by the nurse participants at the time of early hospital care, during the patient's hospital stay, and at time of discharge varied suggesting that the course of the illness trajectory may be an important factor in the types of knowledge sources perceived to be important in clinical decision making by clinical practice nurses.

Empirical and esthetic knowledge sources were consistently ranked as important knowledge sources by the nurse participants in all three sections of the clinical vignettes. From a clinical perspective the results intuitively make sense. For example, a clinical practice nurse

caring for a patient in the intensive care unit requires information derived from empirical knowledge sources to support hemodynamic function and help to sustain life. Esthetic knowledge sources are equally important as the clinical practice nurse is not only caring for the patient but also their loved ones who may be in a state of crisis.

Clinical experience provided the nurse participants with context-specific approaches to patient care and the use of pluralistic knowledge sources to guide clinical decision-making. Nurse participants particularly relied on nursing peers when faced with uncertainly in practice. The type of knowledge that the nurse participants sought from nursing peers was dependent on the clinical context. Often, mentors fulfilled an important role in being the 'second eye', listening to and validating the nurse participants' perceptions of their recommended course of action in patient care decisions. Clinical experience was not valued over other knowledge sources but rather reduced uncertainly in the nurse participants' approaches to patient care. In comparison, Scott et al. (2008) determined that nurses employed in a tertiary level pediatric critical care unit demonstrated that the nurse participants placed a high value on the knowledge they obtained from their clinical experiences.

Insight as to why pluralistic knowledge sources were important to the nurse participants was evident from the nurse participants' interviews. The nurse participants described the importance of patient-centred care. At an individual level, patient-centred care is about shared decision-making between the patient and the healthcare provider. The two elements of patient-centred care are: effective communication between the provider and the patient and a shared decision making process. For the care provider, effective communication is the understanding of the patient's life and values and how these factors contribute to his/her health and clear communication of the health issues to the patient. Patient respect is essential to effective

communication. The shared decision making process is about valuing and sharing relevant information relayed by the healthcare provider and patient (Ontario Medical Association, 2010; Wikipedia, 2014).

The use of appropriate pluralistic knowledge sources is important to support a patient-centred approach to patient care. For this approach to be successful healthcare professionals must be empowered to make appropriate care decisions that may or may not match evidence informed practice recommendations. Real shared decision making involves the finding out what is important to patients and why as well as making use of professional knowledge in ways that informs care conversations about what is best to do, how and why (Greenhalgh et al., 2014).

Patient-centred care was described by the nurse participants as meeting the holistic needs of the patient. Nursing care was viewed as a privilege, treating each patient with respect and dignity. The nurse participants in this study were able to provide examples of the six knowledge sources they used to achieve holistic nursing care. Esthetic and personal knowledge sources were particularly important in the development of nurse-patient relationships where nurses engaged in finding out about patients' experiences, values, and desires around his/her health.

Along with the more conventional biophysical aspects of patient care guided by empirical knowledge, the tacit knowledge sources (e.g. esthetic, personal and unknowing knowledge sources) may be particular important for nurses to understand the patient as a human being who responds uniquely to medical treatment or therapies. In this healthcare content, knowledge sources are best viewed as complementary rather the competitive or exclusionary (Tarlier, 2005).

The role of empirical knowledge

Empirical knowledge was perceived by the nurse participants as the most perceived important knowledge source by the nurse participants in the 'most likely' scenario in the hospital

stay and discharge sections. Overall, empirical knowledge obtained the highest mean ranked score in the ‘most likely’ and ‘most desirable scenario’.

The findings as described above are consistent with the tradition of the bio-medical paradigm where empirical epistemologies are highly valued over other types of knowledge sources but also reveal a more real evidence-based approach where healthcare professional providers carefully distinguish in collaboration with the patient and the healthcare team the most appropriate treatment plan. In a real evidence-based healthcare environment the locus of decision making is collaborative and involves the patient and his or her loved ones (Greenhalgh et al., 2014).

Nursing research utilization scholars have identified organizational context as a critical factor in the research utilization behaviours of nurses and suggest that the lack of understanding of the importance of organization context in research use is an important barrier to the use of research by clinical practice nurses (Cummings et al., 2010; Scott-Findlay, Snelgrove-Clarke, & Newton, 2007). Squires et al.’s (2011) systematic review update revealed that nursing specialty was one of several individual determinants of RU by nurses. Of the nine studies that addressed clinical specialty in Squires et al. (2011) review, three of the research studies demonstrated that critical care nurses, as compared to other practice areas, had higher RU behaviours.

Unknowing as a knowledge source

At present, the knowledge source unknowing has not been well articulated in the nursing literature. The statement used to represent unknowing in the clinical vignettes was defined as “knowledge gained from others that include new ideas and beliefs that you may not have thought of before”. The knowledge source unknowing may be particularly important when uncertainty exists in nursing clinical decision making (Cranley et al., 2012).

A review of the nursing literature on the construct uncertainty in nursing practice was undertaken by Cranley et al. (2008). The findings of this review were characterized by two primary themes (1) sources of uncertainty and coping strategies and (2) the degree of uncertainty in a decision task. To summarize, what is known about uncertainty is that it includes sources of uncertainty, primarily related to not having a good understanding of a clinical situation and strategies to reduce uncertainty such as pattern recognition and consulting with nursing peers. The authors of this review suggested that it is often difficult for nurses to recognize, acknowledge or express their perceptions of uncertainty in clinical practice (Cranley et al., 2008).

In this study, the nurse participants perceived unknowing as an important knowledge source. Survey data demonstrated that unknowing was important in the 'most desirable' scenario of the clinical vignettes as the nurse participants' perceived importance of unknowing increased from 'the most likely' and the 'most desirable' scenarios, especially for the early hospital stay section. Further information was obtained by the nurse participants from patients related to their beliefs, preferences and values to broaden their understanding and obtain additional information about patients that was not previously known by the nurse participants. The results suggest that the unknowing knowledge source may be particularly important when a certain amount of clinical uncertainty exists. The early phase of the patient's hospital admission may have a higher degree of clinical uncertainty as this may be a time frame where clinical information is being obtained from a variety of sources and by various healthcare providers.

Qualitative interview data supported that a degree of uncertainly in clinical decision making existed for the nurse participants. The nurse participants expressed that a degree of uncertainty did occur especially when confronted with a new clinical situation in which they did not have any previous cognitive frame to guide decision making. Nurses expressed uncertainty

when patients did not manifest a ‘typical trajectory’. This occurred when aspects of the patient’s care where unfamiliar to the nurse participants and resulted in clinical uncertainty for the nurse participants as to the most appropriate nursing actions. To cope with uncertainty the nurse participants relied primarily on their nursing peers for direction and information to support safe nursing care as demonstrated in the following except:

> The patient says oh, it’s down my arm, it is down by back and all that…I sat and talked with this person for a bit, blood pressure was up, we have had other patients before, they had a bit of a history. Wait it out, not super unstable? There is uncertainty with that type of stuff because the symptoms are not constant. It is talking to other nurses that helps (I11,May21,2013,p.1).

The use of pluralistic knowledge sources may reduce uncertainty in nursing clinical decision making. For example, clinical experiences and intuitive judgments of nurses can help them to sort through physiological measurements and esthetic knowledge. Further knowledge related to uncertainty in clinical nursing practice is required to address an important gap in the existing evidence informed literature. In particular, further understanding of the relationship of unknowing and uncertainty is warranted. Of particular interest to this investigator is a better understanding of not only the relationship between unknowing and uncertainty but also the use of pluralistic knowledge sources to reduce uncertainty in clinical practice. In addition, further exploration is required to understand and describe consequences for nurses when uncertainty occurs in clinical practice, including their physiological and emotional responses, and strategies to manage uncertainty.

In summary, from the onset of nursing discourse, empirical knowledge has been viewed as occupying a privileged position in relation to other knowledge sources (Porter, 2010; Tarlier, 2005). Social and cognitive boundaries help to explain how empirical knowledge remains a privileged knowledge source within healthcare organizations over time (Ferlie, 2006). However,

and most important is that the responses of nurse participants in the current study support Greenhalgh et al.'s (2014) call for a more real evidence informed healthcare environment where empirical knowledge sources remain important, but not a sufficient base to address all the complexities associated with nursing practice.

Knowledge gained through subjective expression such as the esthetic knowledge source is best understood through qualitative research (Cloutier, Duncan, & Bailey, 2007). Qualitative and well as quantitative research provide valuable contributions to address the complexity of contextual issues in nursing practice. The results of this study are important as there is a paucity of research that has explicitly demonstrated self- perceived importance of pluralistic knowledge sources by nurses in clinical practice.

The discourse related to the tenets of evidence-informed nursing practice has been vociferous. On one hand, EIP is viewed as validating the epistemology of empirics, where others see EIP as embracing pluralistic knowledge sources (Porter, 2010). Such dichotomous views of EIP are counterproductive, rather pluralistic knowledge sources are best viewed as complementary, rather the competitive or exclusionary (Tarlier, 2005).

Research Question #2

What is the relationship between the total empowerment scores obtained on the CWEQ-II and the knowledge sources perceived to be important by the participants?

Hypothesis: Lower structural empowerment scores are associated with larger differences between the perceived importance of knowledge sources in the most likely score and the most desirable scenarios

Organizational context is dynamic, socially perceived and enacted. Context is a syndrome of forces that interact in complex ways and help to explain the reproduction and transformation

of knowledge (Ferlie, 2006). The conceptual framework developed for this study was helpful in understanding how context shapes and influences human behaviours. According to Laschinger, Finegan, Shamian, and Wilk (2001) a workplace that is considered empowered facilitates staff access to four empowerment structures: information, resources, support and opportunities to learn and grow. Access to empowerment structures is enhanced by formal (specific job characteristics) and informal power (interpersonal relationships).

The CWEQ-II, a 19 item questionnaire is intended to measure the four scales and two sub-scales associated with structural empowerment (SE). The scales and sub-scales are summed to create a total empowerment score (range of 6 to 30 units). Higher scores represent higher perceptions of empowerment. Construct validity of the tool has been reported by Laschinger, Finegan, Shamian and Wilk in 2001.

Nurse participants in this study were employed in adult ICUs and Cardiac Sciences clinical units within the WRHA. The vision of the WRHA includes three key points: healthy people, vibrant communities and care for all (WRHA, 2014). WRHA strategic directions are related to improving: patient experiences, quality of care, public engagement, support for positive work environments, and advocacy for research and education (Winnipeg Regional Health Authority, 2014). The findings of this dissertation revealed that nurse participants perceived their work environments with the health region to be moderately empowering (total empowerment score of 20.34, SD3.15 on the CWEQ-II).

The nurse participants' perceptions of SE were not associated with their age, gender, years of clinical experience, education level or clinical practice area and suggested that the organization context of the WRHA was associated with their perceptions of workplace empowerment. The hypothesis was supported in that the nurse participants' total SE scores were

partially explained by their perceptions of the importance of the six knowledge sources measured in this study. Approximately twenty percent (20.3%) of the variance for the CWEQ-II total SE scores was explained by the grand mean differences between the 'most likely' and 'most desirable' scores and personal knowledge in the 'most likely' scenario within the clinical vignettes. Larger differences between the nurse participants' perceived importance of the six knowledge sources used in this study in the 'most likely' and 'most desirable' scenarios were associated with lower empowerment scores and higher perceived importance of personal knowledge sources in the 'most likely' scenario led to higher total empowerment scores.

Personal knowing in nursing "concerns the inner experience of becoming a whole, aware self" (Carr, 1999, p. 27). The personal knowledge source was an important factor in explaining part of the variance for the global empowerment score and the opportunity and support scales on the CWEQ-II. Importantly, qualitative interview data revealed a myriad of examples of how the nurse participants valued personal knowledge in clinical decision making as well as in informing the approach they take in patient care. Personal knowledge was particularly important to the nurse participants when there was a lack of practice guidelines or protocols to guide decision making. In these instances, the nurse participants drew from their personal knowledge to facilitate the interpretation of clinical events and to make sense of the real life clinical challenges.

Personal knowing facilitates the development of authentic nurse patient relationships as nurses must know themselves before they can know patients and help patients make meaning out of their experiences (Carr, 1999). Strategies to stimulate reflective nursing practice have been identified by nursing scholars and include allowing opportunities for nurses to describe how they felt in certain clinical situations and to identify what internal factors were influencing these

feelings (Johns, 1995). Reflection may be accomplished through journal writing, clinical summations of experiences and through

In summary, traditionally the onus to integrate research findings into practice was placed on individual practitioners (Scott-Findlay, Snelgrove-Clarke & Newton, 2007). More recently, researchers have advocated “for a more focused examination of the influence of context on research behaviours” (Cummings, Hutchinson, Scott, Norton, & Estabrooks, 2010, p. 1).

This study’s findings contribute towards a better understanding of the important role of context, where the nurse participants’ total empowerment scores were partially related to the congruence between their ‘most likely’ and ‘most desirable’ use of the six knowledge sources used in this study. This finding suggests that a perceived empowered work environment could afford greater opportunities for nurses in specialty practice areas to use knowledge sources that are important to them to provide patient care. For example, qualitative interview data revealed the importance of manageable nurse to patient ratios and the availability of resources such as computers to foster opportunities for nurses to seek out knowledge that informed the care of their patients.

An empowered healthcare organization allows the flow of pluralistic knowledge sources in clinical practice and shapes the ideas, beliefs and receptivity of pluralistic knowledge by interdisciplinary team members (Copnell, 2008; Ferlie, 2006). Barriers to the flow of knowledge identified in this study included the structure of nursing work (i.e. inadequate staffing, high nurse to patient ratios and inappropriate nursing staff mix) and lack of time to engage in finding appropriate literature to support patient care decisions. Factors that the nurse participants believed to support the flow of knowledge included opportunities for mentorship and the exchange of clinical information with interdisciplinary team members. Mentors and

interdisciplinary team members were relied on by the nurse participants to share their expertise related to a variety to clinical situations) for example, how to perform a certain skill or deal with a difficult family situation).

Research Question #3

What is the relationship between empowerment structures (opportunity, information, support, resources and formal and informal power) and nurse participants' perceived importance of knowledge sources as depicted in 'the most likely' or 'most desirable' scenarios contained within the clinical vignette?

Stepwise, multivariable logistic regression was undertaken to determine the relationship between the CWEQ-II SE scales and sub-scales (opportunity, information, support, resources, and formal and informal power) and the nurse participants' perceived importance of the six knowledge sources used in this study. The logistic regression models for the opportunity, information and support scales of the CWEQ-II demonstrated that the goodness of fit of the logistic regression models was reasonable with C-statistic values of 0.7 or higher (Manitoba Centre for Health Policy, 2014). The variables that contributed to low scores (defined as a score <4) were related to larger differences between 'most likely' and 'most desirable' scores for particular sections (admission, hospital stay and discharge) and knowledge sources and lower perceived importance of all knowledge sources in the 'most likely scenarios' within the clinical vignettes.

Informal and formal power

Formal power was measured in this study using the Job Activities sub-scale (JAS) of the CWEQ-II. JAS measures nurses' perceptions of work place innovation, flexibility and visibility of work related activities. Informal power was measured using the Organizational Relationship

Scale (ORS) subscale of the CWEQ-II and measures nurses' perceptions of collaboration with physicians, being sought ought by peers for help, being sought out by managers to help with problems and seeking out ideas from interdisciplinary team members (Laschinger, Finegan, Shamian, & Wilk, 2001).

Due to the cross sectional design of this study it was a challenge to determine the most appropriate directionality of the relationships under investigation. Several discussions related to directionality occurred with the researcher's thesis committee. It was logical that an empowered work environment afforded opportunities for nurses to use pluralistic knowledge sources appropriately in clinical practice. Situating SE as the outcome of interest was less clear when attempting to interpret the multivariable logistic regression models. Further research is required to determine why the findings in this study were associated with formal and informal power.

Tarlier (2005) believes that evidence only becomes evidence when it has been judged by persons as being true and it is only then that evidence is integrated within existing knowledge. From this perspective, 'what becomes evidence becomes subject to (and thus specific to) disciplinary knowledge, rather than the one-size fits all definitions of evidence such as the levels of evidence" (Centre for Evidence-Based Medicine as cited in Tarlier, 2005, p. 131). Nurse participants' perceptions of formal and informal power in this study were perhaps explained by their ability to successfully use and share knowledge with interdisciplinary team members. This may be particularly important as the valuing and legitimization of knowledge based on diverse epistemologies by other disciplines has been described as extremely challenging (Tarlier, 2005). Canam's (2008) study on clinical nurse specialists (CNSs) demonstrated that the power dynamics of a pediatric work setting influenced the ability of the participants to articulate their contributions to patient care. The persuasive discourse of the team in this study was one of a

technical discourse which did not fit with the realities of the CNSs practice. As a consequence, the perspectives and contributions of the CNSs were devalued and ignored by other members of the healthcare team.

In summary, the findings of the logistic regression models are difficult to interpret. Further research is needed to determine the why of the identified relationships in this study. A further understanding of nurse's use of pluralistic knowledge in a collaborative practice environment and their perceptions' of formal and informal power would help to explain the findings of this study.

Question #4

What are the lived experiences and potential tensions described by clinical practice nurses?

The qualitative interviews were conducted to obtain the experiences of nurses in order to describe and understand their perceptions of the importance and use of pluralistic knowledge sources in clinical practice as well as insight into how organizational context may influence the use of knowledge in clinical practice. The 'lived' experience of nurses referred to the nurse participants first hand accounts and impressions related to their clinical realities in their ability to use knowledge sources important to them. It was important to obtain the experiences of nurses to determine if consequences (tensions) existed when their actual use of knowledge sources was not consistent with their preferred use of knowledge sources in clinical practice.

Empirical Knowledge Source

Consistent with the findings from the clinical vignettes, the nurse participants described their use of pluralistic knowledge in clinical practice. Empirical knowledge sources were readily described as being important in providing nursing care. Clinical practice guidelines, local policies and procedures, and attending rounds were examples provided by the nurse participants

as important means to obtain empirical knowledge. Attending rounds was viewed by the nurse participants as particularly helpful in learning from physician colleagues about current research, interventions, and treatments that were relevant to their patient populations. One nurse participant employed at a tertiary level ICU remarked that the unit where she was employed fostered an environment where nursing staff were afforded opportunities to question practice. Nurses reviewed and discussed research literature to validate if their current practices were evidence-informed. Changes to current practices did occur based on their review.

Research utilization (RU) investigators have called for a focus on the influence of the organization environment on RU behaviours of nurses (Cummings, Hutchinson, Scott, Norton, & Estabrooks; 2010; Scott & Pollock, 2008; Scott-Findlay, Snelgrove-Clarke, & Newton, 2007). The PARIHS (Promoting action on research implementation in health services) is a framework that conceives the successful implementation of evidence-informed practice is explained by three key elements: evidence, context and facilitation. Context is understood as the setting where care takes place and has three dimensions: culture, leadership and evaluation. The framework is useful to understand critical elements related to EIP implementation and effective strategies to promote knowledge translation and sustainability of change (Kitson et al., 1998; Stetler et al., 2011). According to the PARIHS framework for RU behaviours to be successful “there must be clarity about the nature of the evidence (high evidence), the quality of the practice environment (high context) and how evidence is “assisted” into practice (high facilitation)” (Scott-Findlay, Snelgrove-Clarke, & Newton, 2007, p. 2).

Scott-Findlay, Snelgrove-Clarke, & Newton (2007) argue that the organizational culture (component of organization content) has an influence on RU behaviours of nurses. Three ways the workplace may influence research use include: the approach to work, the types of knowledge

perceived to be valued and legitimized, and the structure and organization of work. The nurse participants in this study perceived their practice environments as moderately empowering. The average overall total empowerment scores in this study was 20.34 units (score range six to 30 units) and remained consistent across practice settings (range 19.92- 21.08). The results suggested that overall the organization context of the WRHA was perceived by the nurse participants to be moderately empowering.

Esthetic and Personal Knowledge Sources

Esthetic and personal knowledge use was central to the nurse participant interviews. Esthetic knowledge facilitated a holistic approach to patient care, determining the meaning and understanding of the illness from the patient's perspective. Esthetic knowledge was grounded in clinical experience and intuitive judgments.

Esthetic knowledge was used by the nurse participants in this study to understand and empathize with family members of patients. Nurse participants recognized that family members were under significant stress and used esthetic knowledge to understand and validate family members' feelings as well as to negotiate potential resolutions to concerns and problems. Nurse participants described that they were privileged to care for patients during their time of illness and understood that patients had long term connections and roles with others.

Esthetic knowledge allowed for the integration of patient information and was described by one participant as a 'real art' taking into account the patient's perspective of their illness, the nursing assessment, and the research evidence. The process was perceived as complex and resulted in an individualized nursing plan of care.

Intuition and clinical judgment

Intuition was understood in this study as a catalyst leading to subsequent decisions and prioritization of patient care decisions and interventions. Intuition was articulated by the nurse participants as a knowledge source but it is perhaps best understood as a precursor to the use of appropriate, context specific knowledge that guides patient care. Clinical judgment was exercised by the nurse participants and helped in how they perceived and use pluralistic knowledge sources in making clinical decisions about patient care. Clinical judgments provided the nurse participants with an interpretation or conclusion about how to proceed with a patient's needs, concerns or health problems. Interestingly, one nurse participant indicated she believed that all nurses were intuitive, but clinical experience determined how a nurse responded to intuition.

The importance of personal knowledge in directing care was evident from the analysis of the qualitative interviews. The nurse participants described the importance of drawing on their own personal knowledge to determine the best approach to patient care decisions and the development of therapeutic nurse-patient relationships. The development of nurse-patient relationships allowed the nurse participants to get to know their patients as human beings, understanding their values, fears, anxieties and perceptions of illness. The ability of the nurse participants to get to know their patients facilitated: a holistic and caring approach to nursing care, patient advocacy, and the ability to intervene early when subtle changes in a patient's condition became evidence (example: change in tone of voice, body language).

The importance of subjective knowledge sources to nurses in this study confirmed the findings and descriptions of other nursing researchers (Berragan, 1998; Carr, 1999; Estabrooks, Rutakumwa, O'Leary, Profetto-McGrath, Milner, Levers, & Scott-Findlay, 2005; Lee, 2002; Tarlier, 2005). Although there is agreement that a broader knowledge base is required for nursing

practice, the challenge remains to further understand the best use, combination and weighting of pluralistic knowledge sources and in what particular context (Rycroft-Malone et al., 2004).

Clinical Realities vs. Ideal Perceptions of Nursing Practice

Understanding and describing the nurse participants' experiences was important to determine if tension existed when the nurse participants' preferred knowledge sources were not consistent with their actual use of knowledge sources in their practice environments. Tension, for the purposes of this study, was conceived as mental or emotional strain, either brief or prolonged, that had an affect on the nurse participant's emotional or physical well-being (adapted from the American Heritage® Stedman's Medical Dictionary, 2014).

Examples of tension were apparent in nurse participants' interviews. Tension was described by the nurse participants as feelings of frustration, of being overwhelmed, of being disconnected with their work, and being run off their feet. Tension occurred when there was a top down approach to patient care decisions with limited nurse involvement, from constant changes in clinical practice, rapid changes in policies and procedures, and a perceived uncaring work environment.

Tensions were evident when the nurse participants believed they could not obtain empirical knowledge when they felt this knowledge was important to provide quality patient care. Means of acquiring this knowledge were identified as clinical guidelines and policies and procedures. A lack of time was the primary reason provided by the nurse participants in their inability to seek out empirical knowledge. Factors that were identified that contributed to a lack of time included being short staffed, high nurse to patient ratios, and lack of technology (i.e. computers). In these situations the nurse participants relied on their nursing peers to seek out the information that was required to provide care.

The nurse participants described feelings of emotional distress when there was a lack of consensus or conflicting views about a patient's treatment plan, for example during end of life conversations. Decisions around end of life were complex and nurse participants wanted to do the right thing for patients. One nurse participant stated she questioned herself ethically if what was being proposed or done for the patient was the right decision. Nurse participants witnessed different responses from different patients, some patients responded positively and some did not. These variable patient responses caused the nurse participants to 'pause' and to consider if what was being proposed with ethically just.

The ability to develop meaningful nurse-patient relationships afforded the nurse participants opportunities to get to know their patients. The relationships were facilitated by consistency in patient assignments, time and manageable workloads. The ability to get to know patients, as well as clinical experience, contributed to the nurse participants ability to pick up a subtle signs that something was not quite right with their patients, for example a change in the patient's body language or tone of voice. At times, this knowledge about patients did not result in a specific intervention by physicians, but rather a 'watch and wait approach' occurred. A watch and wait approach was perceived by one nurse participant to result in a significant deterioration for a patient, leading to feelings of frustration and dissatisfied for the nurse participant as she felt she should have 'pushed harder' for early interventions.

In summary the results of the quantitative survey data and analysis of the qualitative interviews demonstrated that nurses perceived all six knowledge sources used in this study as important and wanted to use more of each knowledge source in practice. Tensions did arise for nurse participants when there was inconsistency between their preferred and actual use of pluralistic knowledge (empirical, moral/ethical, and esthetic) in clinical practice,

Strengths and Limitations

To the researcher's knowledge this study is novel in systematically capturing the tensions that developed when the nurse participants' preferred and actual use of knowledge sources was inconsistent (specifically for empirical, moral/ethical and esthetic knowledge sources). Contextual factors were identified that contributed to the tensions identified by the nurse participants. Context has often been cited as a significant factor in the reproduction and transformation of knowledge, yet scholars have been unable to provide detail as to how and why context is important (Scott, Allen, & Pollock, 2008). The results of this dissertation provide a unique lens in how context shapes, reproduces and legitimates knowledge used in clinical nursing practice.

The clinical vignettes were effective to capture the differences between the 'most likely' and 'most desirable' knowledge sources. This information, along with the qualitative interview data, was important to systematically examine whether tension indeed existed when inconsistencies between the nurse participants 'actual and preferred knowledge sources occurred in clinical practice.

The example of each knowledge source appeared to have meaning as well as significance for the nurse participants. At present, the knowledge source unknowing has not been well articulated or studied. The results of this study indicated that the example of unknowing as defined as "knowledge gained from others that include new ideas and beliefs that you may not have thought of before" was regarded as important to the nurse participants, particularly in the 'most desirable' scenario. The knowledge source unknowing appeared in this study to be particularly important when the nurse participants were faced with clinical uncertainty. To be open requires one to hear a colleague, a teacher, a patient, or a student (Munhall, 1993). Further

research is required to describe clinical practice nurses' perceptions and use of unknowing in clinical practice.

The results of this study demonstrated that the nurse participants' perceptions of structural empowerment (SE) were partially explained by the congruence of their perceived importance of knowledge sources in clinical practice. Specifically perceptions of SE increased when there was a narrower gap between 'the most likely' and 'most desirable' knowledge sources' and when personal knowledge mean scores were higher in the 'most likely' scenario contained within the clinical vignettes. The results may contribute to a further understanding of factors that are associated with SE as well as contribute to a further understanding of the components of the CWEQ-II, particularly the access to support scales (Laschinger, Finegan, Shamian, & Wilk, 2001). Moreover, the results of this study may contribute to the understanding of factors that facilitate the application of research findings in clinical practice. For example, the understanding of the element of content as described in the PARIHS (Promoting action on research implementation in health services) framework (Kitson et al., 1998; Stetler et al., 2011)

There are limitations associated with this study. Further efforts to address the psychometric properties of the clinical vignettes are required. Construct validity includes face and content validity (DeVon et al., 2007). Face validity has been addressed by piloting the clinical vignettes as well as from feedback obtained from the qualitative interviews. Further efforts related to content validity are required as previously described in this chapter.

Criterion related validity refers to the degree of how well a new tool compares to a known standard (DeVon et al., 2007). To the best of this researcher's knowledge there is no known 'standard' for statements that represent empirical, esthetic, moral/ethical, personal, sociopolitical and unknowing knowledge sources. There is currently no available tool that

measures these concepts of knowledge sources that is ‘fool proof’ other having to reference commonly used definitions arising from classic literature by Carper (1978), White (1995) and Munhall (1993).

The results of this study are generalizable to the clinical practice areas that were studied. It is possible due to the small sample size that the results are skewed (i.e. the nurse participants who did not participate may be somewhat different than those who chose to participate). The results of this study should be considered preliminary and require further replication with a larger and more representative sample and clinical practice settings. Further validation with different clinical practice settings is required to determine if the results of this dissertation are similar in other clinical practice areas within and outside of the WRHA. Previous researchers (Cummings, Hutchinson, Scott, Norton, & Estabrooks, 2010; Scott-Findlay, Snelgrove-Clarke, & Newton, 2007) have demonstrated that cultural nuisances exist across practice areas and therefore may hinder or support congruence in ‘most likely’ and ‘most desired’ knowledge sources in patient care/decision making by nurses.

The short time limit of the qualitative interview may be considered a limitation. The short time allotted for the interviews did not allow for sufficient time to probe and explore the phenomena under investigation in any significant detail. However, the researcher was successful in the recruitment of thirteen clinical practice nurses in this study. Evidence arising from nurse participants’ qualitative responses on the perceived importance of pluralistic knowledge sources in clinical decision-making and patient care were helpful and provided corroborating support for the quantitative survey results.

Implications and Recommendations for Healthcare Policy

Creating a collaborative practice environment that supports pluralistic knowledge sources within a large health region is a challenge as interdisciplinary team members may value and legitimize knowledge differently. Thus, existing knowledge of disciplines is based on diverse epistemologies and influence the uptake, reproduction and transformation of knowledge in practice (Tarlier, 2005). As part of the evidence-informed process, facilitating context appropriate pluralistic knowledge sources is a leadership responsibility. Organizational readiness, support from leadership and adequate resources have been cited as foundational strategic initiatives for a culture of nursing excellence (Hauck, Winsett, & Kuric, 2012). Creating opportunities to assist clinical practice nurses to have meaningful and successful conversations about pluralistic knowledge sources with interdisciplinary team members is an important step in achieving organization commitment to support such a clinical practice environment.

Based on nurse participants' qualitative responses it is recommended that:

1) A systematic understanding of the receptivity and readiness of collaborative teams to support an evidence-informed practice environment that values and legitimizes pluralistic knowledge sources. For example, Hauck, Winsett, and Kuric (2012) measured the healthcare organization readiness to support an evidence-based practice environment using a tool (Organization Culture and Readiness for System-Wide Integration of EBP Survey) developed by Melnyk et al. (2008)

2) Effective team and organizational facilitators to engage in effective collaborative practice are supported within the health region. For example, Pfaff et al. (2014) identified team facilitators to: be respectful, provide team support, and conduct face-to-face interprofessional

interactions. Organization facilitators included supportive leadership, participation of nurses in a mentorship experience, and time.

From a health system perspective, policy stakeholders have directed a significant amount of attention to the predicted shortage of Registered Nurses in Canada which may reach 60,000 full time equivalent Registered Nurses by 2022 (Neufeld, 2009). The Registered Nurse profile for Critical care Nurses in Canada is one that is on average 40.4 years of age, with approximately one quarter of these nurses eligible for retirement (Canadian Nurses Association, 2012). A landmark national study on the work and health of nurses demonstrated the challenges that Canadian nurses face are significant leading to high rates of illnesses and injuries, absenteeism and burnout (Neufeld, 2009). To address these issues of recruitment and retention it is important to understand clinical practice nurses' perceptions of structural empowerment. To this end, it is recommended that:

1) Partnerships are developed with key stakeholder to evaluate and understand how the use of knowledge sources among other practitioner disciplines and the positive negotiation of these knowledge sources among a collaborative team may contribute to effective implementation of concepts such as interdisciplinary education and care practices.

Implications and Recommendations for Nursing Practice

The results of this dissertation have implications for nursing practice and include:

1) Opportunities are supported for clinical practice nurses to participate in discussions related to best practice and decisions regarding patient care at the unit, local and national levels. Engagement at a unit level affords clinical practice nurses the ability to provide meaningful contributions to patient care decisions that are based on pluralistic knowledge sources. Local and

national forums allow nurses to participate in meaningful conversations with a variety of stakeholders and be exposed to potentially different views and knowledge about best practices.

2) Formal and informal opportunities are supported for clinical practice nurses to learn about and participate in education and clinical opportunities to become effective mentors (who use effective pluralistic knowledge sources across patient scenarios that can be role modeled in clinical education experiences). For example, Lasatr et al. (2014) identified effective mentorship communication strategies. Eller et al. (2014) identified specific mentorship behaviours that resulted in positive outcomes.

3) Nursing education programs identify evidence-informed methods for assessing student learning outcome achievements related to the use of pluralistic knowledge sources.

4) Nursing education programs identify effective teaching and learning strategies to to facilitate the awareness and use of pluralistic knowledge by nursing students.

Implications and Recommendations for Research

Models like the PARIHS framework broadly describe context for the uptake of research findings in clinical practice. Gaps still exists in identifying specific factors that underlie context that can vary across practice settings. This area of research is of particular importance to nurse leaders who are responsible for nursing recruitment and retention. To this end, it is recommended that:

1) Further longitudinal nursing research is required to explore the physical and/or emotional consequences for clinical practice nurses when their perceived ideal work environment related to the use of multiple knowledge sources is incongruent with their clinical realities.

2) Further research is required to address the psychometric properties of the clinical vignettes. In particular:

- Further validation of the reliability of the examples of each knowledge source described in the clinical vignettes
- Further research related to the most effective methods to determine clinical practice nurses' perceived importance of knowledge sources in practice

3) Further investigation is required to determine the sources of knowledge used and values by other health care professionals.

4) Further descriptive research, qualitative research to systematically capture examples of pluralistic knowledge use and awareness in clinical practice.

CONCLUSION

In conclusion, the development of clinical vignettes was novel in determining Cardiac Sciences and Adult Critical Care nurses' perceived importance of pluralistic knowledge sources in practice. The results revealed that the type of knowledge source perceived as important to the nurse participants varied depending on the point in time of the patient's care trajectory as an in-patient. Although empirical knowledge was an important knowledge source in the 'most likely' and 'most desirable' scenarious, nurse participants perceived all six knowledge sources as important and wanted to use more of each knowledge source in clinical practice.

The nurse participants in this study considered their work environments to be moderately empowering and perceived that they had the greatest access to opportunity and information. On the other hand, nurses expressed lower perceived structural empowerment when higher differences existed for the overall grand difference between the 'most likely' and 'most desirable' scores and the personal knowledge source in the 'most likely' scenario of a clinical vignette. As well, when nurse participants felt disconnected, overwhelmed, confused and helpless in their clinical decision-making and in uncaring practice environments, frustration and emotional

exhaustion resulted. End of life care decisions were noted by the nurse participants to be particularly stressful when the proposed treatment plan did not incorporate knowlede from a variety of sources and when the plan of care was not clear among the healthcare team. This created distress for nurse participants as they sometimes struggled with their role as a patient advocate and doing what they perceived to be morally just for a particular patient.

The results of this study support Greenhalgh and colleagues (2014) call for a different approach to evidence-based healthcare where the focus is on providing clinicians with useable evidence from pluralistic knowledge sources that are used in a safe, logical and coherent manner. This type of work environment acknowledges the importance of context, clinical expertise and patient values and preferences. Such a practice setting facilitates collaborative decision making by team members and the valuing of multiple knowledge epistemologies. This type of practice environment does not devalue empirical knowledge, but makes judicious use of professional knowledge and clinical expertise (Greenhalgh et al., 2014).

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APPENDIX A: COMMENT SHEET PILOT

Please return the completed vignette and the comment sheet.

1) Were the directions in the vignette clear?

☐Yes ☐No (please explain)

2) Was the overall flow of the vignette logical?

☐Yes ☐No (please explain)

3) Did the rating of the importance of knowledge sources make sense?

☐Yes ☐No (please explain)

4) Did the progression from the ‘most likely’ and ‘most desirable’ responses make sense?

☐Yes ☐No (please explain)

5) Did the directions explain the differences between the ‘most likely’ and ‘most desirable’ responses?

☐Yes ☐No (please explain and add any ideas for improvement)

6) Were you motivated to complete the survey?

☐Yes ☐No (please explain)

7) Please include any suggestions for improvement

APPENDIX B: TABULATED RESPONSES FROM COMMENT SHEET PILOT

Respondent #	Directions Clear (Yes/No)	Flow Logical (Yes/No)	Rating of importance make sense (Yes/No)	Progression most likely and most desirable make sense (Yes/No)	Directions explained the diff between most desirable and most likely	Motivated to complete	Suggestions for improvement
01	Yes	Yes	Yes	Yes –	Yes	Yes	-
02	Yes	Yes	Yes	No, explain better	No, start with a better explanation	Yes	-
03	Yes	Yes	Yes	Yes	Yes	Yes	-
04	Yes	Yes	Yes	No, explain better	No, explain better	Yes	-
05	Not always; sometimes vague	No, explain better the sections	Yes	Yes	Yes	Yes	Explain sections better
06	Yes	Yes	Yes	Yes	Explain differences	Yes	Not clear they chose one vignette
07	Could be explained better	Yes	Can't read the writing	Yes	Yes	"No, not sure what answers should be"	
08	Yes	Yes	Yes	Yes, include an example	Include an example	Yes	Only took 15 minutes
09	Yes	Yes	Yes	Yes	Yes	Yes	-
10	Yes	Yes	Yes	Yes	Yes	Yes	-
11	Yes	Yes	Yes	Yes	Yes	Yes	-
12	Yes	Yes	Yes	Yes	Yes	Yes	Add more during hospital stay section
13	Ethical/moral question difficult to answer	No	Yes	Yes	Yes	Yes	-
14	Did not complete						

APPENDIX C: RESULTS OF THE PILOT

Table: 1-6: Congruency of knowledge source responses by Parts 1-3 of the Vignettes n=14

Knowledge Source #1 Empirical

	Most Likely	Most Desirable	Abs. Difference	Kappa
Part 1	55	64	9	0.4017
Part 2	65	65	2	0.6923
Part 3	62	63	1	0.8495
Total	182	192	12	0.6478

Knowledge Source #3 Moral/ethical

	Most Likely	Most Desirable	Abs. Difference	Kappa
Part 1	55	61	8	0.3805
Part 2	59	60	3	0.5714
Part 3	64	68	4	0.4750
Total	178	189	15	0.4756

Knowledge Source #2 Esthetic

	Most Likely	Most Desirable	Abs. Difference	Kappa
Part 1	60	64	6	0.2500
Part 2	63	62	3	0.6147
Part 3	65	65	0	1.0000
Total	188	191	9	0.6216

Knowledge Source #4 Sociopolitical

	Most Likely	Most Desirable	Abs. Difference	Kappa
Part 1	52	55	9	0.2403
Part 2	52	60	10	0.2222
Part 3	57	60	5	0.4444
Total	161	175	24	0.3023

Knowledge Source #5 Unknowing

	Most Likely	Most Desirable	Abs. Difference	Kappa
Part 1	51	55	4	0.6056
Part 2	50	51	1	0.8542
Part 3	52	57	5	0.4891
Total	153	163	10	0.6496

Knowledge Source #6 Personal

	Most Likely	Most Desirable	Abs. Difference	Kappa
Part 1	61	62	1	0.8739
Part 2	63	63	2	0.7383
Part 3	65	67	2	0.6585
Total	189	192	5	0.7569

Total Scores: Most Likely and Most Desirable Knowledge Sources
N = 14

Knowledge Source	Most Likely Total	Most Desirable Total	Abs. Difference	Average Kappa
#1 Empirical	182	192	12	0.6478
#2 Esthetic	188	191	9	0.6216
#3 Moral/Ethical	178	189	15	0.4756
#4 Sociopolitical	161	175	24	0.3023
#5 Unknowing	153	163	10	0.6496
#6 Personal	189	192	5	0.7569

Most Likely and Most Desirable by Knowledge Sources Rank Order
N = 14

Most Likely Knowledge Sources (Rank Ordered)	Most Desirable Knowledge Sources (Rank Ordered)
#1 Esthetic	#1 Personal
#1 Personal	#1 Empirical
#2 Empirical	#2 Esthetic
#3 Moral/Ethical	#3 Moral/Ethical
#4 Sociopolitical	#4 Sociopolitical
#5 Unknowing	#5 Unknowing

Percentages of Most Likely Knowledge Sources Overall

(i.e. the total possible score for each knowledge score is 210 (15 x 14)
N = 14

Most Likely Knowledge Sources (Rank Ordered)	Percentage
Personal	90.0%
Esthetic	89.5%
Empirical	86.66%
Moral/Ethical	84.8%
Sociopolitical	76.7%
Unknowing	72.9%

Percentages of Most Desirable Knowledge Sources Overall

(i.e. the total possible score for each knowledge score is 210 (15 x 14)
N = 14

Knowledge Source	Most Desirable Total
Personal	91.4%
Empirical	91.4%
Esthetic	91%
Moral/Ethical	90%
Sociopolitical	83.3%
Unknowing	77.6%

-The perceived importance of sociopolitical & unknowing knowledge sources increases (from the most likely to the most desirable responses);
-The perceived importance of personal, empirical, esthetic and moral/ethical knowledge sources remains fairly similar from the most likely to the most desirable responses.

APPENDIX D: UNSTABLE ANGINA CLINICAL VIGNETTE

PLEASE READ THE CLINICAL VIGNETTE BELOW, ONCE YOU HAVE READ IT, ANSWER THPLEASE READ THE CLINICAL VIGNETTE BELOW, ONCE YOU HAVE READ IT, ANSWER THE QUESTIONS IMMEDIATELY FOLLOWING THE SECTION

Section 1: Early Hospital Care

Mrs. A is an 88 year old female who presents to your emergency department (ED) with a 2 hour history of feeling short of breath, nausea and chest discomfort while at rest.
Mrs. A informs the triage nurse that she has a history of osteoarthritis, active, untreated bowel cancer with associated anemia and a history of high blood pressure.

Medications at home: metoprolol 50 mg orally, every day; acetaminophen 500 mg every 6 hours as necessary.

Pertinent Laboratory Results: Negative HS TnT – all other laboratory values within normal limits.

Electrocardiogram: .5 mm of ST depression in aVF and lead II

On presentation to your unit, Mrs. A looks slightly dyspneic and she denies and further chest discomfort. Vital Signs: BP 162/88, pulse 89 and regular, respirations 24/minute and oxygen saturation of 92% on 3L nasal prongs.

Medical admission orders: Admission Orders: ASA 81 mg orally daily, Metoprolol 50 mg orally BID, Nitro 0.4 mg spray prn, Morphine 2.5 mg IV prn, oxygen 3 L nasal prongs prn (keep oxygen saturation >90%), routine admission orders for vital signs and cardiac monitoring, electrolytes, CBC, BUN, Creatinine in am, Troponin T q8h x3, CK q8h x3, intravenous normal saline at 30 ml/hour, and 12 lead ECG in am and with chest discomfort unrelieved by 2 Nitro sprays.

You are in the process of obtaining the initial nursing assessment and completing the admission nursing database. Joe, Mrs. A's son, is also at Mrs. A's bedside and asks you why his mother is not going immediately to have that test to see where the blockages in the heart arteries are and to have that balloon treatment. Joe states that the doctor told him his mother was not having the procedure but he is very concerned because he was told by a friend that having the heart test right away is the best treatment for his mother's condition.

Continue to page 5……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information in answering Joe’s question.

Knowledge obtained from clinical practice guidelines related to the care of patients with unstable angina (example Canadian Cardiovascular Society Guidelines);

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Joe’s perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how resources either financial or human are distributed, how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from others that include new ideas and beliefs that you may not have thought of before;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 7 ……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from clinical practice guidelines related to the care of patients with unstable angina (example Canadian Cardiovascular Society Guidelines);

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Joe's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how resources either financial or human are distributed, how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from others that include new ideas and beliefs that you may not have thought of before;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

End of Part I continue to page 9……..

Section II: Hospital Stay

During your routine assessment you ask Mrs. A how she is doing. She states that she feels not feel quite right and is tired. Her vital signs and nursing physical assessment are unremarkable. However, you feel that there is something just not quite right with Mrs. A. but you are not quite sure what is wrong.

Continue to page 10……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information in exploring Mrs. A’s health status.

Knowledge obtained from assessment parameters and normal values related to the nursing assessment of patients with unstable angina;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from reflecting on previous similar clinical situations and further exploring the meaning of Mrs. A not feeling quite right;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from asking a colleague for his/her advise regarding the best way to proceed in regards to Mrs. A’s care;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 12 ……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from assessment parameters and normal values related to the nursing assessment of patients with unstable angina;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from reflecting on previous similar clinical situations and further exploring the meaning of Mrs. A not feeling quite right;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how decisions regarding care are made).

1	2	3	4	5
Not Important				Very Important

Knowledge gained from asking a colleague for his/her advise regarding the best way to proceed in regards to Mrs. A's care.

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

End of Part II continue to page 14 ……..

Section III: Prior to Hospital Discharge

Mrs. A is to be discharged shortly; you find Mrs. A sitting at the side of her bed crying. You ask Mrs. A what is wrong. Mrs. A becomes very angry and tells you she will have difficulty coping with paying for all the expenses she has and she is having difficulty making ends meet already. Mrs. A further tells you that Joe is living with her and at this time has been unable to find any steady employment. While this is going on, the charge nurse informs you that there is an individual from another facility will require emergent admission and the only person to be discharged is Mrs. A.

Continue to page 15 ……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information.

Knowledge obtained from understanding the importance and benefits of Mrs. A following healthily lifestyle recommendation, taking the prescribed medications and attending cardiac rehabilitation;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mrs. A’s perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example: type of nursing support available);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from talking with another nurse to see how she/he would handle this particular issue;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 17……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from understanding the importance and benefits of Mrs. A following healthily lifestyle recommendation, taking the prescribed medications and attending cardiac rehabilitation;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mrs. A's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example: type of nursing support available);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from talking with another nurse to see how she/he would handle this particular issue;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

The end – thank you for taking the time to complete this survey……

APPENDIX D: SEPTIC PNEUMONIA CLINICAL VIGNETTE

PLEASE READ THE CLINICAL VIGNETTE BELOW, ONCE YOU HAVE READ IT, ANSWER THE QUESTIONS IMMEDIATELY FOLLOWING THE SECTION

Section 1: Early Hospital Care

Mr. X is a 68 year old man who presents from home to your emergency department (ED) with a 3 day history of fever, chills, confusion and shortness of breath. Vital signs at triage: blood pressure 86/50, respiratory rate 28/minute, pulse 116/minute, oxygen saturation on room air 80%. Mrs. X informs the triage nurse that her husband has a chronic lung condition, hypertension and diabetes.

Medications at home: metoprolol 50 mg orally, twice daily, ASA EC 81mg every day, acetaminophen 325-650 mg prn, metformin hydrocholoride 500 mg twice a day, advair (250/50) mcg one puff twice daily, salbutamol (Ventolin®) 2 puffs q4-6 hour as needed.

Mr. X. respiratory status deteriorated further in the ED and required intubation. An intravenous infusion of norepinephrine (Levophed™) is established at .01 mcg/kg/minute (to maintain a mean blood pressure ≥ 65 mmHg). Blood, urine and sputum cultures were obtained and the first doses of the antibiotics were administered.

Mr. X is transferred to your clinical area, the respiratory therapist attaches Mr. X to the ventilator and selects the appropriate initial ventilator settings. Initial vital signs: blood pressure 102/67 (norepinephrine .05 mcg/kg/minute), heart rate 125/minute, normal sinus rhythm with frequent premature ventricular contractions, oxygen saturation 91% (FiO_2 90%).

Medical admission orders: ciprofloxacin 400 mg IV q8 hour, piperacillin/tazobactam 4.5 grams/0.5grams IV every 8 hour, midazolam (Versed®) 1-5 mg/hour, fentanyl at 50 mcg/hour all other orders are in the process of being transcribed or entered into the computer.

You are in the process of setting up an insulin infusion when Anne, Mr. X's wife, asks you what her husband's blood sugar is. You respond that Mr. X's blood sugar is 16 mmol/L and you are starting an insulin sage. Anne states she is a retired pharmacist and in her opinion that is a normal blood sugar for her husband and he doesn't need any insulin.

Continue to page 5……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information in answering Mr. X’s wife.

Knowledge obtained from clinical practice guidelines related to the care of patients with sepsis (example surviving sepsis campaign bundle);

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mrs. X’s perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how resources either financial or human are distributed, how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from others that include new ideas and beliefs that you may not have thought of before;

1	2	3	4	5
Nott Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 7……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from clinical practice guidelines related to the care of patients with sepsis (example surviving sepsis campaign bundle);

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mrs. X's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how resources either financial or human are distributed, how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from others that include new ideas and beliefs that you may not have thought of before;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

End of Part I continue to page 9……..

Section II: Hospital Stay

During Mr. X's hospital stay his renal status has significantly deteriorated and the care team is considering dialysis. Mr. X remains in critical condition but is hemodynamically stable, sedated and unable to communicate with his family or care team.

Treatment options are explained to Mrs. X. Mrs. X has tears in her eyes and asked you, the nurse, what she should do?

Continue to page 10……..

Think about how you would 'most **likely'** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from '1 to 5' where 1 is not important to 5 being very important, please circle 'your most likely response' related to your perceived importance of the following information in answering Mrs. X.

Knowledge obtained from objective data (renal function tests, criteria for dialysis);

1	2	3	4	5
Not				Very
Important				Important

Knowledge obtained from reflecting on previous similar clinical situations and further exploring the meaning of Mrs. X's question;

1	2	3	4	5
Not				Very
Important				Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not				Very
Important				Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how decisions regarding care are made);

1	2	3	4	5
Not				Very
Important				Important

Knowledge gained from asking a colleague for his/her advise regarding the best way to proceed in regards to Mr. X's care;

1	2	3	4	5
Not				Very
Important				Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 12……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from objective data (renal function tests, criteria for dialysis);

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from reflecting on previous similar clinical situations and further exploring the meaning of Anne's question;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from asking a colleague for his/her advise regarding the best way to proceed in regards to Mr. X's care;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Section III: Prior to Hospital Discharge

Mr. X is on the transfer list to a medical unit for further care and a bed has been assigned. Mr. X's wife, Anne, is very upset and approaches the charge nurse. Anne is very concerned that her husband is being transferred and does not feel he is medically ready. Anne requested to speak immediately to the doctor in charge to discuss further.

Continue to page 14……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information.

Knowledge obtained from understanding the objective criteria for transfer of patients to the medical (example, stable vital signs);

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Anne’s perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example: type of nursing support available);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from talking with another nurse to see how she/he would handle this particular issue;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 16……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from understanding the objective criteria for transfer of patients to the medical (example, stable vital signs);

1	2	3	4	5
Not Important				Very Important

Note: Empirical domain

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Anne's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example: type of nursing support available);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from talking with another nurse to see how she/he would handle this particular issue;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

The end – thank you for taking the time to complete this survey……

APPENDIX D: CORONARY ARTERY BY PASS SURGERY CLINICAL VIGNETTE

PLEASE READ THE CLINICAL VIGNETTE BELOW, ONCE YOU HAVE READ IT, ANSWER THE QUESTIONS IMMEDIATELY FOLLOWING THE SECTION

Section 1: Early Hospital Care

Mrs. R is a 72 year old female who underwent elective coronary artery bypass grafting (left internal mammary to LAD and endoscopic left saphenous vein graft to 2nd obtuse marginal branch and the poster descending artery). She has been transferred between units from the intensive care unit.

Mrs. R has a past medical history of severe coronary artery disease, hypertension and severe arthritis limiting her ability to lie in one position for any prolonged length of time. Mrs. R. states she does have an occasional cigarette or two when she plays bridge every Tuesday and Friday.

Mrs. R. has one son living in town who is very supportive. Mrs. R's husband died four years ago.

Medications at home: metoprolol 50 mg orally twice a day, EC ASA 81 every day, altace 10 mg twice daily, atorvastatin 80 mg everyday, acetaminophen 500 mg every 6 hours as necessary.

Medical admission orders: The patient is on the cardiac surgery clinical pathway and additional orders are currently being processed.

You have just completed the transfer process for Mrs. R. The patient's son, Mike, tells you he is a family physician. Mike asks for an update on his mother's condition and asks you why a balloon procedure using those new stents (drug eluding stents) was not an option for his mother.

Continue to page 5……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information in answering Mike’s question.

Knowledge obtained from clinical practice guidelines related to the care of patients undergoing coronary artery bypass graft surgery;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mike’s perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how resources either financial or human are distributed, how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from others that include new ideas and beliefs that you may not have thought of before;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 7……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from clinical practice guidelines related to the care of patients undergoing coronary artery bypass graft surgery.

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mike's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how resources either financial or human are distributed, how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from others that include new ideas and beliefs that you may not have thought of before;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

End of Part I continue to page 9……..

Section II: Hospital Stay

You are engaged in a conversation with Mrs. R. about smoking. She admits to smoking 10 cigarettes a day. Mrs. R. states that she enjoys smoking but realizes that she must quit. Mrs. R. expresses concern that she will no longer be able to play bridge if she stops smoking and asks you if it is alright just to cut down on the number of cigarettes she is smoking per day.

Continue to page 10……..

Think about how you would ‘most **likely’** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from ‘1 to 5’ where 1 is not important to 5 being very important, please circle ‘your most likely response’ related to your perceived importance of the following information in answering Mrs. R’s question.

Knowledge obtained from clinical practice guidelines related to smoking cessation;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from reflecting on previous similar clinical situations and further exploring the meaning of Mrs. R’s question;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how decisions regarding care are made);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from asking a colleague for his/her advise regarding the best way to proceed in regards to Mrs. R’s question;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 12 ……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from clinical practice guidelines related to smoking cessation;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from reflecting on previous similar clinical situations and further exploring the meaning of Mrs. R's question;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example how decisions regarding care are made).

1	2	3	4	5
Not Important				Very Important

Knowledge gained from asking a colleague for his/her advise regarding the best way to proceed in regards to Mrs. R's question.

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

End of Part II continue to page 14……..

Section III: Prior to Hospital Discharge

The Clinical Resource Nurse (CRN) informs you that the only bed available on the unit is Mrs. R's bed. An admission is scheduled to go into Mrs. R's bed once she is discharged. The CRN tells you that an intensive care bed is required for a patient that is currently in the cardiac operating room and that staff have been asked to expedite the discharge to be ready for the new admission.

Mrs. R's hospital stay is uneventful. All arrangements have been made in regards to home care support during Mrs. R's recovery. Mrs. R's son, Mike will also be staying with his mother for the next couple of weeks. You find Mrs. R in her room crying. When you ask Mrs. R what is wrong she becomes very angry and tells you she is not ready to go home yet and demands to stay in hospital for another couple of days.

Continue to page 15……..

Think about how you would 'most **likely'** respond to the above clinical situation on a typical day working on your clinical practice setting. On a scale from '1 to 5' where 1 is not important to 5 being very important, please circle 'your most likely response' related to your perceived importance of the following information in answering Mrs. R's question.

Knowledge obtained from the team's assessments that Mrs. R is ready to be discharged;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mrs. R's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example: availability of beds);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from talking with another nurse to see how she/he would handle this particular issue;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

Continue to page 17……..

Now think about what your would consider your ideal or **'most desirable'** response to the scenario presented in Section 1; where there are no barriers to your practice and you are able to practice nursing in a context that you perceive as being 'ideal' in providing evidence informed care. This 'most desirable' response may or may not be similar to your 'most likely' response.

Knowledge obtained from the team's assessment that Mrs. R is ready to be discharged;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from your own previous clinical situations and in trying to understand the meaning and importance of the question from Mrs. R's perspective;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from an ethical/moral understanding of different options of what should be done, i.e. what you believe should be done in this particular clinical situation with the goal of optimal patient care;

1	2	3	4	5
Not Important				Very Important

Knowledge obtained from the understanding of how care is delivered within your particular health care facility (example: availability of beds);

1	2	3	4	5
Not Important				Very Important

Knowledge gained from talking with another nurse to see how she/he would handle this particular issue;

1	2	3	4	5
Not Important				Very Important

Knowledge gained from being part of a therapeutic nurse-client-family relationship (the ability to see beyond a diagnosis and respecting that each nurse-client relationship is unique).

1	2	3	4	5
Not Important				Very Important

The end – thank you for taking the time to complete this survey……

APPENDIX E: CWEQ II

CONDITIONS OF WORK EFFECTIVENESS QUESTIONNAIRE - II

HOW MUCH OF EACH KIND OF OPPORTUNITY DO YOU HAVE IN YOUR PRESENT JOB?

	None		Some		A Lot
1. Challenging work	1	2	3	4	5
2. The chance to gain new skills and knowledge on the job.	1	2	3	4	5
3. Tasks that use all of your own skills and knowledge.	1	2	3	4	5

HOW MUCH ACCESS TO INFORMATION DO YOU HAVE IN YOUR PRESENT JOB?

	No Knowledge		Some Knowledge		Know A Lot
1. The current state of the hospital.	1	2	3	4	5
2. The values of top management.	1	2	3	4	5
3. The goals of top management.	1	2	3	4	5

HOW MUCH ACCESS TO SUPPORT DO YOU HAVE IN YOUR PRESENT JOB?

	None		Some		A Lot
1. Specific information about things you do well.	1	2	3	4	5
2. Specific comments about things you could improve.	1	2	3	4	5
3. Helpful hints or problem solving advice.	1	2	3	4	5

HOW MUCH ACCESS TO RESOURCES DO YOU HAVE IN YOUR PRESENT JOB?

	None		Some		A Lot
1. Time available to do necessary paperwork.	1	2	3	4	5
2. Time available to accomplish job requirements.	1	2	3	4	5
3. Acquiring temporary help when needed.	1	2	3	4	5

IN MY WORK SETTING/JOB:	None				A Lot
1. The rewards for innovation on the job are	1	2	3	4	5
2. The amount of flexibility in my job is	1	2	3	4	5
3. The amount of visibility of my work-related activities within the institution is	1	2	3	4	5

HOW MUCH OPPORTUNITY DO YOU HAVE FOR THESE ACTIVITIES IN YOUR PRESENT JOB?

	None				A Lot
1. Collaborating on patient care with physicians.	1	2	3	4	5
2. Being sought out by peers for help with problems	1	2	3	4	5
3. Being sought out by managers for help with problems	1	2	3	4	5
4. Seeking out ideas from professionals other than physicians, e.g., Physiotherapists, Occupational Therapists, Dieticians.	1	2	3	4	5

	Strongly Disagree				Strongly Agree
1. Overall, my current work environment empowers me to accomplish my work in an effective manner.	1	2	3	4	5
2. Overall, I consider my workplace to be an empowering environment.	1	2	3	4	5

Laschinger/2001

APPENDIX F: CRNM EXECUTIVE POLICY

COLLEGE OF REGISTERED NURSES OF MANITOBA

EXECUTIVE DIRECTOR POLICY

Policy Type: Print and Communication Standards	**Number:** PC-8
Policy Name: Third Party Mailings	**Date Approved:** July 12, 2006 **Date Reviewed:** October 15, 2008
Approval:	**Date Revised:** October 15, 2008 **Next Review Date:** October 15, 2011

Third Party Mailings
This Administrative Standard applies to all external requests for bulk mailing services to College members. Typically these types of requests come from: researchers wishing to solicit information from registered nurses; commercial and non-commercial enterprises wishing to market to registered nurses and district chapters wishing to send printed material to their chapter members. Requests for mailings should be forwarded to the Director of Communications.

The College will endeavour to fulfill requests provided that:
1. the purpose of the mailing provides a benefit for either the member or the profession of nursing;
2. they are not inconsistent with the College's Vision, Mission and Strategic Directions;
3. the timing of the request can be accommodated within existing operational priorities;
4. a sample copy of all materials to be mailed is provided to CRNM for prior approval;
5. the privacy of CRNM members is protected at all times;
6. a cover memo is added to the material to be mailed indicating the College is mailing on behalf of an outside party;
7. the request is approved by the Director of Communications.

Requests from researchers for surveys must be accompanied by the approval of the ethical review of the sanctioning organization (ie: university).

Rates
Consistent with the College's policy on Revenue Generation, the rates charged (net of taxes) for providing this service will be as follows:

Non-profit and Educational Organizations
The initial database query will be billed at $50.00 for a routine or simple request and $100.00 for more complex requests. The Director of Communications will make that determination in consultation with the Director of Finance.

Stuffing envelopes, applying labels and affixing postage will be billed at $25.00 per person hour – in quarter hour increments. Postage is billed on a cost recovery basis.

Printed laser mailing labels (2 5/8" X 1") are billed at $2.00 per 100. Envelopes are $10.00 per 100 for #10 envelopes, $20.00 per 100 for 9" X 12" envelopes and $30.00 per 100 for 10" X 13". envelopes.

The College can also offer to send bulk emails to members as an alternative to postal mail. The price charged for this service reflects the cost of the email software, set-up charges and staff time. The cost is $10.00 per 100 addresses with a $10.00 minimum charge. Staff time is billed at $25.00 per person hour – in quarter hour increments.

COLLEGE OF REGISTERED NURSES OF MANITOBA

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APPENDIX G: INTRODUCTION LETTER

Date:

Dear Nursing Colleague,

As caregivers, we make important nursing decisions that influence patient care and outcomes. You are being asked to participate in a research study entitled "Registered Nurses perceived importance of knowledge sources in relation to structural empowerment."

As part of my doctoral studies I am interested in understanding nurses' knowledge sources used in daily clinical practice. This project is part of my doctoral studies at the University of Manitoba, Department of Community Health Sciences. My committee supervisor is Dr. Michael Moffatt.

There are no perceived risks to you if you choose to complete the survey. The benefit is that the information obtained from the study will help to better understand knowledge used by nurses in daily practice and how the healthcare organization may support such practice.

Your participation in this study is voluntary. Your willingness to complete the survey will serve as adequate evidence of informed consent for Part I of the study. Part II of the study involves an interview. You may choose to participate in any part of the study.

The results of this study maybe published or presented in a public forum but will contain no information that may personally identify you.

Part one of the research study: It is anticipated this will take about 15 minutes of your time.

Attached are three clinical vignettes. Please choose and complete

- ONE vignette of your choice. The vignette does not have to reflect your current clinical area of practice or specialty;
- Demographic profile;
- The Conditions of Work Effectiveness Questionnaire (the CWEQ II) questionnaire.

Part two of the research study: Involves interviewing nurses regarding their experiences as it relates to their receptivity in using various knowledge sources in daily practice. The data from the interviews will help to better understand the information obtained from the surveys. The interview will be digitally recorded and will take approximately 20 minutes. If you agree to participate you will be asked to sign an informed consent.
Are you interested in having a voice regarding your clinical practice? If yes, please consider being part of the study.

You are asked to:

1) Chose and complete ONE clinical vignette (the choice is totally up to you) along with the demographic profile;
2) Complete the Conditions of Work Effectiveness Questionnaire-II;
3) **If you are interested in Part 2 of the study (interview) return this page with your name and contact information or email me at lavery@sbgh.mb.ca with your name and contact information;**
4) Return the above in the box located on your unit

By indicating 'yes' you are agreeing to learn more about Part 2 of the study. Note, not all individuals who are interested in part 2 may be contacted.

□Yes you may contact me

Name: _____ email or telephone number: _____

Thank you for agreeing to take part in this research study.

If you would like more information you may contact me at 204-258-1286 or email me at lavery@sbgh.mb.ca.

Sincerely,

Lorraine Avery, RN

APPENDIX H: DEMOGRPAHIC SHEET

You have chosen a clinical vignette that takes approximately 10 to 15 minutes to complete. It is separated into parts: Admission and early clinical management, hospital stay and prior to hospital discharge.

As soon as you have completed a section, continue on with the next section of the vignette. ***Please do not go back and change any answers in previously completed sections.***

Before beginning please complete the following

Demographics – please circle what applies to you;

Age: □20-25 □26-30 □31-35 □36-40 □41-45 □46-50 □>50

Gender: □Male □Female

Education Level:

□Diploma RN

□Bachelor of nursing degree

□Bachelor degree outside of nursing

□Master of nursing degree

□Master degree outside of nursing

□Other

Years of clinical experience: _____(write in total number of years)

Current clinical practice area:

□Cardiology/CCU SBH
□ Intensive Care Cardiac Surgery SBH
□Intensive Care Unit SOGH
□Intermediate Intensive Care Unit HSC
□Intensive Care GGH
□Cardiac Surgery Inpatient Unit
□Other
□ Medical/Surgical Intensive Care Unit SBH
□ Intensive Care HSC
□Intensive Care Unit VGH
□Intensive Care Unit CGH
□Pediatric Intensive Care Unit
□Neonatal Intensive Care Unit

APPENDIX I: RECRUITEMENT POSTER

Research Study: "Registered Nurses perceived importance of knowledge sources in relation to structural empowerment"

Dear Nursing Colleagues



Thank you for considering participating in this study it is much appreciated

Lorraine Avery RN

As part of my doctoral studies I am interested in understanding Critical Care and Cardiac Sciences Nurses' perceived importance of various knowledge sources used in daily clinical practice.

The study involves two parts:

1) Choosing ONE of three clinical vignettes. The vignette does not have to reflect your current clinical area of practice or specialty. Also please complete the survey called of the Conditions of Work Effectiveness Questionnaire (the CWEQ-II). Place the completed surveys (one vignette and the CWEQ- II) in the envelope provided and deposit inside the box located on your unit. The survey will take about 10 minutes to complete.

2) Participation in a one on one interview. The purpose of the interview is to obtain your perceptions and lived experiences related to the use of various knowledge sources used in your practice. It will take approximately 20 minutes to complete at a time and location mutually agreeable. If you are interested in participating in the interview please email me at lavery@sbgh.mb.ca or telephone me at

APPENDIX J: QUALITATIVE INTERVIEW GUIDE

1)

Would you mind sharing with me some information about your nursing career?

Probes:

-Years in the profession;
-Types of experiences and locations.

2)

As nurses, we rely on knowledge that we have acquired (for example from clinical trials, intuition, personal experience, ethics etc) in daily clinical practice. Knowledge is important in all aspects of care, from helping us to make clinical decisions regarding our patients' care or how we respond to questions from family members or other health care providers.

I am interested in talking with you about the types of information or knowledge sources that you consider important in your daily clinical practice?

Probes:

-Does the importance of knowledge sources change: i.e. vary with each unique clinical encounter? Please explain?
-Any 'core' knowledge sources used?
-Why is this type of knowledge important to you? (Example: learned in nursing education program).

3)

Do you use and feel supported in incorporating and using the knowledge sources that you identified as important to you in your daily practice?

Probes:

- What are the main facilitators or barriers?
- What would need to change in your practice setting?

4)

Is there anything that I have not asked you that you would like to discuss?

APPENDIX K: CONSENT FORM



UNIVERSITY OF MANITOBA



Hôpital St-Boniface Hospital

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

Lorraine J. Avery RN, MN, CNCC (Canada)

Title of Study: "Registered Nurses' perceived importance of knowledge sources in relation to structural empowerment."

Principal Investigator: *Lorraine Avery, RN, CR145-369 Tache Avenue, Winnipeg, Manitoba, Canada 204-258-1286.*

Sponsor: There is no sponsor for this study.

You are being asked to participate in a research study. Please take your time to review this consent form and discuss any questions you may have with the study staff. You may take your time to make your decision about participating in this study and you may discuss it with your friends, family or (if applicable) your doctor before you make your decision. This consent form may contain words that you do not understand. Please ask the study staff (Lorraine Avery) to explain any words or information that you do not clearly understand.

Purpose of Study

The purpose of the study (face to face interview) is to describe and understand the clinical experiences of Clinical Practice Nurses as it relates to the use of different knowledge sources in practice. Specifically, the objectives are to 1) gain rich, real life experiences related to the use of various knowledge sources in clinical practice and 2) understand and describe the impact when inconsistencies exist between nurses' actual and preferred use of knowledge sources in daily clinical practice.

It is anticipated that a total of 10 to 20 Clinical Practice Nurses will participate in the interviews.

Study procedures

This research study has two parts. Part one involved the completion of a survey (Clinical Vignette) and part two is a face to face interview. You indicated on the survey that you were interested in learning more about the second part of the study.

If you take part in this part of the study, you will have the following procedures:

1) You will be contacted by email or telephone to arrange a mutually agreed on date, time and location to conduct the interview. The interview will last no longer than thirty minutes (ideally twenty minutes). The interview will be digitally recorded.

2) You will be asked to answer a series of questions related to the use of knowledge sources used in your clinical practice. For example, you will be asked what knowledge sources you typically rely on during the course of your daily work as a clinical practice nurse.

Participation in the study will be for one interview.

You can stop participating at any time by communicating to Lorraine Avery that you no longer wish to participate in the study. However, if you decide to not to participate in the study, you are encouraged to talk with Lorraine Avery first. There are no identified serious consequences that may arise if you choose to withdraw from the study.

If you indicate that you would like to receive a copy of the overall (aggregate) results of the study, the results will be mailed to your home by the principal investigator (Lorraine Avery) when the study is completed.

Risks and Discomforts

Every effort will be made to keep your personal identity confidential, however, absolute confidentially is not guaranteed.

Benefits

There may or may not be direct benefit to you from participating in this study. It is hoped that the information learned from this study will benefit other nurses in the future.

Costs

There is no cost to you for participating in the study. All the procedures, which will be performed as part of this study, are provided at no cost to you.

Payment for participation

You will receive no payment related to taking part in this study.

Confidentiality

Information gathered in this research study may be published or presented in public forums; however your name and other identifying information will not be used or revealed.

The digital file of your 'taped interview' will be downloaded electronically to a password protected computer that will be kept under double lock. Only the principal investigator (Lorraine Avery) will have access to the digital recording and the file will contain no information that may identify you.

The digital file of your interview will be transcribed electronically using a word processing program. The transcript will be saved on a password protected computer that will be kept under double lock. The file will contain no information that may identify you. A paper version of the typed transcript maybe reviewed by one or more members of the principal investigator's (Lorraine Avery) dissertation committee. Sharing the transcript may occur to validate the codes and themes identified from the study. The paper copy will contain no identifying information. The names and contact information of Lorraine Avery's committee members are located at the end of this consent form.

The digital file of your interview will be deleted from the digital recorder as well as from the computer once the accuracy of the typed transcript has been verified.

The electronic typed transcript of your interview will be kept for seven years. After this time the computer file will be deleted.

If a paper copy of your interview transcript was received by a committee member, the copy of the transcript will be shredded using a confidential shredder as soon as possible.

Despite efforts to keep your personal information confidential, absolute confidentiality cannot be guaranteed. Your personal information may be disclosed if required by law.

The University of Manitoba Health Research Ethics Board and St. Boniface Hospital may review records related to the study for quality assurance purposes.

All records will be kept in a locked secure area as described above and only those persons identified will have access to these records. No information revealing any personal information such as your name, address or telephone number will leave the office of Lorraine Avery.

Voluntary Participation/Withdrawal from the Study

Your decision to take part in this study is voluntary. You may refuse to participate or you may withdraw from the study at any time. Your decision not to participate or to withdraw from the study will not affect your performance evaluation.
Lorraine Avery will tell you about any new information that may affect your willingness to stay in this study.

Questions

You are free to ask any questions that you may have about this study and your rights as a research participant. If any questions come up during or after the study or if you have a research-related injury, contact:

Lorraine Avery, RN at:
(204) 258-1286 or email
lavery@sbgh.mb.ca

For questions about your rights as a research participant, you may contact The University of Manitoba, Bannatyne Campus Research Ethics Board Office at (204)789-3389

Lorraine Avery's dissertation committee members are:

1) Supervisor: Dr. Michael Moffatt BSc, MD, MSc, FRCPC, Professor, Department of Community Health Sciences, University of Manitoba. mmoffatt@wrha.mb.ca

2) Internal Member: Dr. Les Carrothers, Ph.D, Faculty of Arts Political Studies and Department of Community Health Sciences, University of Manitoba

3) External Member: Dr. Caroline Park, RN, Ph.D, Associate Professor Centre for Nursing and Health Studies, Athabasca University, clpark@athabascau

4) External Member: Dr. Michelle Lobchuk, RN, Ph.D, Associate Professor, Faculty of Nursing University of Manitoba, Michelle.Lobchuk@ad.umanitoba.ca

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent

I have read this consent form. I have had the opportunity to discuss this research study with Lorraine Avery or members of her dissertation committee. I have had my questions answered by them in a language I understand. The risks and benefits have been explained to me. I believe that I have not been unduly influenced by any study team member to participate in the research study by any statements or implied statements. Any relationship (such as employer, supervisor or family member) I may have with the study team has not affected my decision to participate. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. I authorize the inspection of any of my records that relate to this study by The University of Manitoba Research Ethics Board and St. Boniface Hospital for quality assurance purposes.

By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

Participant signature_____ Date _____
(day/month/year)
Participant printed name: _____

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given their consent

Printed Name: _____ Date _____
(day/month/year)
Signature: _____

“Role in the study: _____

Relationship (if any) to study team members:_____

Would you like to receive a summary of the overall results of the study?

□Yes □ No

If yes, complete information below

Name: _____

Mailing Address: _____

_____

Appendix L: Multiple Knowledge Source Comparisons

Analysis of Variance (ANOVA) Multiple Comparison Results - Comparing Knowledge Sources

	Early Hospital Care		Hospital Stay		Discharge		Total	
Comparison	**Most Likely**	**Most Desirable**	**Most Likely**	**Most Desirable**	**Most Likely**	**Most Desirable**	**Most Likely**	**Most Desirable**
Empirical - Esthetic	1.0000	0.9887	0.9077	0.9201	1.0000	0.9351	0.9983	0.8519
Empirical - Moral/Ethical	<.0001	0.0023	0.0024	0.0011	0.0005	0.0890	<.0001	<.0001
Empirical - Personal	0.9760	0.1067	0.6903	0.6418	0.5963	0.6686	0.4343	0.0871
Empirical - Sociopolitical	<.0001	<.0001	<.0001	<.0001	0.0175	0.0012	<.0001	<.0001
Empirical - Unknowing	<.0001	0.0005	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Esthetic - Moral/Ethical	<.0001	0.0206	0.0676	0.0353	0.0005	0.5338	<.0001	0.0048
Esthetic - Personal	0.9434	0.3799	0.9981	0.9944	0.5963	0.9939	0.7090	0.6765
Esthetic - Sociopolitical	<.0001	<.0001	<.0001	<.0001	0.0175	0.0315	<.0001	<.0001
Esthetic - Unknowing	<.0001	0.0062	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Moral/Ethical - Personal	0.0011	0.8314	0.1881	0.1448	0.1026	0.8638	0.0002	0.2848
Moral/Ethical - Sociopolitical	0.2599	0.0001	0.0845	0.0204	0.9242	0.7737	0.3330	0.0006
Moral/Ethical - Unknowing	0.8551	0.9992	0.0004	0.0011	0.0097	<.0001	0.0004	<.0001
Personal - Sociopolitical	<.0001	<.0001	<.0001	<.0001	0.5963	0.1379	<.0001	<.0001
Personal - Unknowing	<.0001	0.6178	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Sociopolitical - Unknowing	0.9195	0.0005	0.6349	0.9652	0.0002	0.0001	0.2261	0.9975

*All comparisons are expressed as p-value using Tukey's Multiple Comparison Correction

Appendix M: Univariable Total Empowerment Score Analysis

Table 1. Early Hospital Care Univariable Predictors of Total Empowerment Score

–Empirical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.909	0.315	0.0046
Most Desirable	-0.108	0.414	0.7951
Difference	-0.890	0.357	0.0139
–Esthetic Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.000	0.364	0.0069
Most Desirable	0.304	0.428	0.4789
Difference	-1.194	0.489	0.0159
Moral / Ethical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.525	0.285	0.0672
Most Desirable	-0.155	0.324	0.6327
Difference	-1.291	0.384	0.0010
–Sociopolitical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.590	0.239	0.0148
Most Desirable	0.139	0.236	0.5581
Difference	-0.862	0.304	0.0053
–Unknowing Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.975	0.310	0.0021
Most Desirable	0.394	0.342	0.2524
Difference	-1.503	0.386	0.0002
–Personal Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.297	0.324	0.0001
Most Desirable	0.465	0.343	0.1780
Difference	-1.051	0.460	0.0239
Early Hospital Care Average	**Beta**	**Std Err**	**P-Value**
Most Likely	1.792	0.426	0.0000
Most Desirable	0.349	0.475	0.4640
Difference	-2.687	0.572	0.0000

Table 2. Hospital Stay Univariable Predictors of Total Empowerment Score

–Empirical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.838	0.371	0.0257
Most Desirable	1.043	0.459	0.0246
Difference	-0.860	0.480	0.0756
–Esthetic Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.900	0.344	0.0099
Most Desirable	0.011	0.406	0.9780
Difference	-0.890	0.435	0.0427
Moral / Ethical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.628	0.306	0.0421
Most Desirable	0.310	0.315	0.3269
Difference	-1.367	0.403	0.0009
– Sociopolitical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.778	0.258	0.0031
Most Desirable	0.342	0.245	0.1650
Difference	-1.298	0.334	0.0002
–Unknowing Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.358	0.263	0.1751
Most Desirable	0.322	0.254	0.2073
Difference	-1.129	0.394	0.0049
–Personal Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.294	0.339	0.0002
Most Desirable	0.450	0.369	0.2259
Difference	-1.181	0.469	0.0131
Hospital Stay Average	**Beta**	**Std Err**	**P-Value**
Most Likely	1.491	0.422	0.0006
Most Desirable	0.697	0.434	0.1109
Difference	-2.227	0.557	0.0001

Table 3. Prior to Hospital Discharge Univariable Predictors of Total Empowerment Score

–Empirical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.842	0.376	0.0269
Most Desirable	0.375	0.490	0.4453
Difference	-0.823	0.480	0.0893

–Esthetic Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.455	0.376	0.2279
Most Desirable	-0.082	0.413	0.8425
Difference	-0.774	0.420	0.0674

Moral / Ethical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.022	0.310	0.0013
Most Desirable	0.565	0.339	0.0979
Difference	-1.079	0.349	0.0024

–Sociopolitical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.809	0.372	0.0318
Most Desirable	0.299	0.322	0.3548
Difference	-0.733	0.377	0.0544

–Unknowing Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.560	0.261	0.0337
Most Desirable	0.379	0.247	0.1271
Difference	-1.073	0.396	0.0077

–Personal Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.002	0.353	0.0052
Most Desirable	0.126	0.383	0.7434
Difference	-1.684	0.466	0.0004

Prior to Hospital Discharge Average	**Beta**	**Std Err**	**P-Value**
Most Likely	1.761	0.491	0.0005
Most Desirable	0.643	0.488	0.1900
Difference	-2.142	0.580	0.0003

Table 4. Average of Early Hospital, Hospital Stay, and Prior to Discharge Univariable Predictors of Total Empowerment Score

–Empirical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.841	0.497	0.0003
Most Desirable	0.786	0.650	0.2288
Difference	-1.814	0.611	0.0036

–Esthetic Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.155	0.436	0.0091
Most Desirable	0.099	0.542	0.8558
Difference	-1.488	0.561	0.0090

Moral / Ethical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.068	0.368	0.0043
Most Desirable	0.356	0.416	0.3931
Difference	-2.192	0.488	0.0000

–Sociopolitical Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.180	0.350	0.0010
Most Desirable	0.342	0.310	0.2717
Difference	-1.748	0.437	0.0001

–Unknowing Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	0.890	0.340	0.0099
Most Desirable	0.479	0.319	0.1351
Difference	-2.368	0.527	0.0000

–Personal Knowledge	**Beta**	**Std Err**	**P-Value**
Most Likely	1.805	0.407	0.0000
Most Desirable	0.528	0.438	0.2296
Difference	-2.406	0.619	0.0002

All Sections Combined (Average)	**Beta**	**Std Err**	**P-Value**
Most Likely	2.069	0.490	0.0000
Most Desirable	0.689	0.520	0.1870
Difference	-3.192	0.651	0.0000

Appendix N: Test of Normality: The Kolmogorov Smirow Test

Variable	P-Value (K-S)
Total Empowerment	0.15
Activities	<0.01
Work	<0.01
Resources	<0.01
Support	<0.01
Access	<0.01
Opportunity	<0.01

Source: Mr. B. Hiebert, Statistician

Appendix O: Multivariable Logistic Regression CWEQ-II Scales and Sub-scales

Outcome: Opportunity Score < 4			
Variable	**Odds Ratio**	**95% CI**	**P-Value**
Hospital stay, Q4 Most Desirable	2.190	1.37 - 3.49	0.0010
Prior to hospital discharge Q6 Difference	3.150	1.43 - 6.91	0.0042
Empirical Knowledge Source Most Likely	0.200	0.08 - 0.47	0.0003
C-Statistic: 0.821 (area under the curve)			

Outcome: Information Score < 4			
Variable	**Odds Ratio**	**95% CI**	**P-Value**
Early hospital care Most Likely	0.220	0.09 - 0.54	0.0010
C-Statistic:	0.716		

Outcome: Support Score < 4			
Variable	**Odds Ratio**	**95% CI**	**P-Value**
Early hospital care Difference	7.110	1.79 - 28.25	0.0054
Personal Most Likely	0.380	0.16 - 0.91	0.0298
C-Statistic: 0.765 (area under the curve)			

Appendix 0: Multivariable Logistic Regression CWEQ-II Scales and Sub-scales

Outcome:	**Resources Score < 4**		
Variable	**Odds Ratio**	**95% CI**	**P-Value**
Hospital stay Q4 Most Likely	0.540	0.35 - 0.81	0.0033
C-Statistic: 0.660 (area under the curve)			
Outcome:	**Formal Power Score < 4**		
Variable	**Odds Ratio**	**95% CI**	**P-Value**
Hospital stay Most Likely	0.350	0.16 - 0.76	0.0082
C-Statistic:	0.676		
Outcome:	**Informal Power Score < 4**		
Variable	**Odds Ratio**	**95% CI**	**P-Value**
All Sections Combined Difference	4.010	1.49 - 10.77	0.0059
C-Statistic: 0.631 (area under the curve)			

Appendix P: Ethical Approval

UNIVERSITY OF MANITOBA | BANNATYNE CAMPUS Research Ethics Boards

P126 - 770 Bannatyne Avenue
Winnipeg, Manitoba
Canada R3E 0W3
Telephone 204-789-3255
Fax 204-789-3414

HEALTH RESEARCH ETHICS BOARD (HREB)

CERTIFICATE OF ANNUAL APPROVAL

PRINCIPAL INVESTIGATOR:	INSTITUTION/DEPARTMENT:	ETHICS #:
Ms. L. Avery	SBGH/Cardiac Sciences Program	HS15748 (H2012:305)
HREB MEETING DATE (if applicable):	**APPROVAL DATE:** September 10, 2013	**EXPIRY DATE:** September 24, 2014
STUDENT PRINCIPAL INVESTIGATOR SUPERVISOR (If applicable): Dr. M. Moffatt		

PROTOCOL NUMBER:	PROJECT OR PROTOCOL TITLE:
NA	Registered Nurses' perceived importance of knowledge sources in relation to structural empowerment
SPONSORING AGENCIES AND/OR COORDINATING GROUPS: NA	

Submission Date of Investigator Documents:	HREB Receipt Date of Documents:
June 28, 2013	Jul 2, 2013

REVIEW CATEGORY OF ANNUAL REVIEW: **Full Board Review** ☐ **Delegated Review** ☒

THE FOLLOWING AMENDMENT(S) and DOCUMENTS ARE APPROVED FOR USE:

Document Name(if applicable)	Version(if applicable)	Date

Annual approval

*Annual approval implies that the most recent **HREB approved** versions of the protocol, Investigator Brochures, advertisements, letters of initial contact or questionnaires, and recruitment methods, etc. are approved.*

Consent and Assent Form(s):

Research Participant Information and Consent Form V. 2 November 2012

CERTIFICATION

The University of Manitoba (UM) Health Research Board (HREB) has reviewed the annual study status report for the research study/project named on this ***Certificate of Annual Approval*** as per the category of review listed above and was found to be acceptable on ethical grounds for research involving human participants. Annual approval was granted by the Chair or Acting Chair, UM HREB, per the response to the conditions of approval outlined during the initial review (full board or delegated) of the annual study status report.

HREB ATTESTATION

The University of Manitoba (UM) Health Research Board (HREB) is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement 2, and the applicable laws and regulations of Manitoba. In respect to clinical trials, the HREB complies with the membership requirements for Research Ethics Boards defined in Division 5 of the Food and Drug Regulations of Canada and carries out its functions in a manner consistent with Good Clinical Practices.

QUALITY ASSURANCE

The University of Manitoba Research Quality Management Office may request to review research documentation from this research study/project to demonstrate compliance with this approved protocol and the University of Manitoba Policy on the Ethics of Research Involving Humans.

CONDITIONS OF APPROVAL:

1. The study is acceptable on scientific and ethical grounds for the ethics of human use only. ***For logistics of performing the study, approval must be sought from the relevant institution(s).***
2. This research study/project is to be conducted by the local principal investigator listed on this certificate of approval.
3. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to the research study/project, and for ensuring that the authorized research is carried out according to governing law.
4. **This approval is valid until the expiry date noted on this certificate of annual approval. A Bannatyne Campus Annual Study Status Report** must be submitted to the REB within 15-30 days of this expiry date.
5. Any changes of the protocol (including recruitment procedures, etc.), informed consent form(s) or documents must be reported to the HREB for consideration in advance of implementation of such changes on the **Bannatyne Campus Research Amendment Form.**
6. Adverse events and unanticipated problems must be reported to the REB as per Bannatyne Campus Research Boards Standard Operating procedures.
7. The UM HREB must be notified regarding discontinuation or study/project closure on the **Bannatyne Campus Final Study Status Report.**

Sincerely,

John Arnett, PhD., C. Pysch.
Chair, Health Research Ethics Board
Bannatyne Campus

Please quote the above Human Ethics Number on all correspondence.
Inquiries should be directed to the REB Secretary **Telephone:** (204) 789-3255/ **Fax:** (204) 789-3414

Appendix Q: Permission Letter to use CWEQ-II



NURSING WORK EMPOWERMENT SCALE
Request Form

I request permission to copy the Nursing Work Empowerment Scale as developed by Dr. G. Chandler and Dr. Heather K. Spence Laschinger. Upon completion of the research, I will provide Dr. Laschinger with a brief summary of the results, including information related to the use of the Nursing Work Empowerment Scale used in my study.

Questionnaires Requested:
Conditions of Work Effectiveness-I (includes JAS and ORS):
Conditions of Work Effectiveness-II (includes JAS-II and ORS-II): Yes
Job Activity Scale (JAS) only:
Organizational Relationship Scale (ORS) only:
Organizational Development Opinionnaire or Manager Activity Scale:
Other Instruments:

Please complete the following information:
Date: August 29, 2011
Name: Lorraine Avery RN
Title: The impact of organizational structure on Nurses' perceptions of preferred and most desirable knowledge sources in clinical decision making
University/Organization: University of Manitoba
Address: St. Boniface General Hospital; Y3005-409 Tache Avenue; Winnipeg, MB R2H 2A6
Phone: 204-258-1286
E-mail: lavery@sbgh.mb.ca

Description of Study: A mixed methods approach will be used including the development of clinical vignettes. The impact of the structural organization elements as described by Kanter will be explored to determine the impact of organizational structure of clinical decision making. Total sample size is 500 - qualitative piece approximately 10.

Permission is hereby granted to copy and use the Nursing Work Empowerment Scale.
Date: August 31, 2011 Signature:

Dr. Heather K. Spence Laschinger, Professor
School of Nursing, University of Western Ontario
London, Ontario, Canada N6A 5C1