

University of Southern Queensland

BEHAVIOURAL INTENTION AND USER ACCEPTANCE OF RESEARCH EVIDENCE FOR QUEENSLAND NURSES: PROVISION OF SOLUTIONS FROM THE CLINICIAN

A Dissertation submitted by

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Abstract

Numerous researchers have cited a multitude of barriers for the utilisation of research in the nurse clinical context. Common factors have included the ability of nurses to read, interpret and clarify reported research. Due to mainly a knowledge deficit Nurses have been recorded in the literature as devaluing research, particularly its applicability to clinical practice. As well as a lack of knowledge, researchers have documented lack of time, limited authority to implement evidence-based practices, lack of support and an unwillingness to change as significant contributing factors to poor research utilization practices. Nurses have reported access to evidence-based materials as meager, which has been linked to a lack of organizational support and investment in research as core business (NICS, 2005; McCloskey, 2008; Closs & Cheater, 1994; Estabrooks et al. 2003; Funk et al. 1991; Funk, Tornquist & Champagne, 1995).

This research considered the behavioural intention and user acceptance of research evidence for nurses working within the Queensland context. To date, no comparison had been made to determine whether those influential barriers documented by the extant literature would have the same weight within the unique demography of Queensland. The focus of this study was to discover a set of user friendly research utilisation solutions for nurses using determinants generated from the literature, and those already identified in the application of Rogers's (2003) innovation diffusion theory. This theory proposes five characteristics of an innovation, namely, relative advantage, compatibility, complexity, trialability, and observability.

The intent of this mixed method research design was to gather relevant data to assist confirmation of identified determinants highlighted in the constructed provisional model (figure 1) , and the potential identification of undiscovered influential factors within the target demography of Queensland. In addition, confirmed factors from the literature were used in the generation of a survey for distribution which led to a confirmation of research utilisation for nurses in a larger demographic. The research design encompassed, firstly, a comprehensive exploration of the literature to determine known barriers to research utilisation. Determinants from the literature were used in exploratory semi- structured homogenous focus groups. Focus groups

were chosen as the major method for collecting data in this research study as they were deemed a qualitative research method for eliciting descriptive data from nursing subgroups. Concepts discovered during thematic analysis were then merged with findings from the literature to generate a survey tool. Data analysis included a thematic analysis of transcribed focus group discussions using Leximancer software, and a quantitative analysis of survey data including reliability analysis, descriptive statistics, correlation analysis, and factor analysis using SPSS.

Factors identified in the literature indicated several different contexts as potential barriers to successful utilisation. These include the consumer/patient, the social setting of nursing, the organisational effects, financial barriers, communication breakdown, and the idea or concept itself. Within each context appears several noteworthy factors, mainly knowledge (both nurse and patient), nursing skill, time, access to new evidence, speed of adoption, and evidence-based practice leadership (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003). These findings, which were put forward as propositions in this research, were confirmed through qualitative findings—with the exception of Queensland nurses being laggards when it comes to adopting new evidence. Based on a combination of findings from qualitative data, the literature, and quantitative data it is clear that, in the majority of circumstances, nurses are not laggards when it comes to research utilisation but, rather, there are barriers that can significantly delay attempts to raise standards of practice.

Outside of the complementary findings that this research has offered in supporting known barriers to research utilisation in nursing, this study also highlights two distinct variables that require further consideration in future endeavors to understand research utilisation practices by nurses, namely, family interference of patient care and the cultural/ethnic background of nurses, with a particular emphasis on the impact of overseas trained nurses.

A combination of both qualitative and quantitative findings in this research depicted that as nurses' trust towards new evidence for skill development increased (particularly when nurses are supported and shown how to succeed with research implementation), the overload of information needed to be controlled so that nurses

could see a project through to fruition. Realistic approaches need to be adopted by nurse leaders and other associates so that nurses can achieve successful and rewarding outcomes based on evidence-based practice change management strategies and, hence, develop increased confidence in themselves as research clinicians. As a major outcome, this research found that controlling the large number of sources dictating what new evidence should be a priority for nurses would enable them to remain focused on common goals and, thus, continue down a path of research. Nurses will only grow in confidence by engaging with research—and then their subsequent success can be shared with others in the profession, thus, promoting a more positive culture towards research utilisation practices.

CERTIFICATION OF DISSERTATION

I certify that the ideas, experimental work, results, analyses, software and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

Signature of Candidate

Date

ENDORSEMENT

Signature of Supervisor/s

Date

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I am very lucky to have had the support and understanding of my family and friends who have endured with me through some very stressful times when I did not think I could keep going. They have been more understanding than I could have possibly have asked for and I cannot begin to thank them enough.

My family, especially my wife and children, have endured a husband and father who has been focused on extracurricular activities outside of family commitment and responsibility and, in doing so, I may have at times not prioritised them with equal importance. Much of our family time has been sacrificed in order to achieve this outcome and I do intend to make up for lost family time.

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Behavioural Intention and User Acceptance of Research Evidence for Queensland Nurses: Provision of solutions from the clinician

Chapter 1: Establishing the context of the problem

1.1 Introduction

This study focuses on the behavioural intention and user acceptance of evidence based research in the clinical setting. The intention was firstly to confirm research utilisation factors found in the Queensland nursing context with those found in the literature and secondly to arrive at some new concepts where possible. The facilitative model of change generated from this research is helpful in further understanding the patterns of evidence-based practice changes emerging in nursing, which can be anticipated, opportunistic or emergent in nature. More importantly, the experiences gained from this research suggest that, when introducing new research evidence, nursing must take into account the sporadic, evolutionary nature of such changes, and devote sufficient resources to effectively manage the process on an ongoing basis (Brenner, 2005).

Research utilisation throughout the history of nursing has never been a strong component of any nursing curriculum and, traditionally, nurses during their training have focused very little attention to research or its linkages with patient care. Post training, this aspect has continued as a trend and nurses quickly adopt a culture that typically places research in the pile that someone else is responsible for. Due to this perception, healthcare research has not been recognised as core business but, rather, as a task that occurs if time allows—if at all (McCloskey, 2008; Brenner, 2005).

As registered nurses often assume the role of experts in their given field and have the potential to exert great influence over patients and clinical colleagues, it is important that nurses possess and have the ability to utilise research-based knowledge related to their areas of practice to ensure that influence maintains patient safety (Wilkes & Navickis, 2001).

Despite the presence of at least one specialist nurse in every hospital, there appears to be a scarcity of evidenced-based literature on specialist nurses overall, and even less is available to highlight how nurses gain access and utilise research information. Lacking in the available literature is their research utilisation preferences such as what model should be utilised, which has the greatest impact, or the level of research skills and views regarding research (Hajjar & Kotchen, 2003).

Evidence-based research utilization in its purist form provides nursing with choices about the most effective and appropriate care. Patients in today's society expect the highest standards of care and, with increased access to information on treatment, patients know when they are not receiving that standard. However, even with the best standards being available, they are often poorly implemented. It would also appear that nurse researchers have devoted less attention to bridging the evidence-based practice implementation gap, and more to the generation of research outcomes which, in themselves, will sit on the 'to be adopted' pile (Davis et al., 2003).

Averis and Pearson (2003) raise a significant question in asking what role evidence-based nursing research has in narrowing the research-practice gap. Surveys of nurses suggest barriers to using current research evidence include the time, effort and skills needed to access evidence-based information which is hidden in massive volumes of newly-produced research outcomes (Cabana et al, 1999). Even the ultimate nurse who maintains his/her skill through evidence-based knowledge has the problem of maintaining currency (Haynes et al., 1997). Each year, Medline attracts 560 000 new articles, and the Cochrane Library enlists 20 000 new randomised control trials. This amounts to 1500 new articles and 55 new trials per day. Nurses then need clear strategies to sort through, absorb, and follow through on new research likely to benefit patients (Clarke, Alderson & Chalmers, 2002).

Many research utilisation models are available that can guide nurses in the processes required for successful adoption of evidence-based practice recommendations, however, these can be complicated and many assume they will only work in the context for which they were originally derived. The implied conjecture is that once

the context is changed, these models may not serve well in the new context because external and internal variables will differ (Hyde et al., 2003). In addition to this assumption there is also the level of understanding nurses may have on the use of such models. Fear of use, confusion and even information overload have been put forward in the literature as contributing factors to the lack of research utilisation practices within nursing (Shaw et al., 2005).

While previous evidence-based literature shows that research utilisation practices have been trialed in various formats, Rogers's (2003) Diffusion of Innovation theory appears to provide significant advantages. Diffusion of Innovation appears to get to the true root cause as to why a new initiative is either adopted or not adopted, and closely mimics the nursing change strategy known as Normative-Reeducative. Shaw et al. (2005) conclude that a science of health-care innovation implementation is not yet available. In order to address this gap, Rogers's (2003) model is offered as a candidate for a theory of innovation implementation. Rogers's (2003) innovation diffusion theory originates from dynamic systems theory and offers an excellent platform when considering the level at which nurses engage in research utilisation practice. Later in this chapter, core principles of diffusion innovation theory are described, and a case is made for framing the findings of past research and the design of future research on implementation in terms of this foundational theory. Much of this theory hinges on the premise of resistance to change, as is the case with Lewin's (1951) theory (cited in Schein, 2006) which outlines that individuals will strive for equilibrium. Thus, in a change situation there must be a balance between calls for change and those that oppose change. This is the case with Rogers's (2003) theory which aims to understand driving and restraining forces for the adoption of a new initiative. Understanding these forces in greater detail will be the basis for this study.

A key theme generated from the above theory of innovation is that of leadership. Literature advises that without effective leadership innovation diffusion—as in this instance—evidence-based practice adoption is rarely successful. With a leader comes an effective change manager or champion (Shaw et al, 2005). In any process of evidence adoption, a key success factor is the ability of a select group of people to

adopt and champion the new innovation to others. To take new evidence forward, an important strategy is to identify and invest in people who are willing to test and adopt change early so that others in the organisation will follow (Shaw et al., 2005).

Investment in identifying and spreading effective evidence based practice is vital. There is a need to create a system that identifies programmes having an impact, understand why they are having an impact, and share this learning with other organisations across the nursing sector. The aim should be to increase the uptake of evidence-based practice to become a core competency of nursing, whereby receptiveness for change and improvement becomes a built-in feature of practice, supported by national and district-level structures and process (Rogers, 2003).

A key problem with the spread of effective research utilisation practices in nursing is its sheer complexity. Health is not merely complicated—rather, the health system is complex, as its operation is based on a web of structures, and processes and patterns where the association between cause and effect is regularly in doubt. The level of complexity means that health systems are often very resilient to pressure, even when that pressure is for positive change (Davis, et al. 2003). The structures of nursing in health care, either at a national level or within organisations such as nursing boards or primary health providers, are common targets for change in attempts to improve overall functioning and foster innovative evidence-based practice change. However, without accompanying changes in processes that are based on an understanding of issues for frontline nursing services, the delivery of nursing care may not be altered significantly. Further, without consideration of the patterns of interaction between nursing in a healthcare system, the effectiveness of process improvements may be blunted (Davis, et al. 2003).

In recent years, there has been a growing movement in nursing to embrace the principles of evidence-based decision making to enhance clinical practice (e.g. Pearson et al., 2005). In essence, evidence-based decision making involves a procedure of twisting identified nursing problems into research questions and then systematically finding, appraising and using relevant research findings as the basis for clinical reasoning (Rosenberg & Donald, 1995). Evidence-based practice or EBP, then, is the adherence to such principles by nurses in their every day practice,

guaranteeing the shrewd use of research evidence that is compelling, significant and, most of all, safe to patient care (Pearson et al., 2005).

The use of nursing literature as evidence to influence clinical practice has been well documented over the years (Pearson et al, 2005; Strauss et al, 2005). However, this approach has become increasingly difficult with the massive volume of literature generated each year, and the lack of adequate access, training, time and tools for clinicians in applying the literature to change practice (Strauss et al., 2005). According to Pearson et al. (2005), there needs to be better bridges to transfer research evidence to clinical practice and that much of nursing's research utilisation practices should be based on the transfer of evidence and not the further generation of new evidence. Strauss et al. (2005) suggest the use of health informatics to improve the retrieval, synthesis, organisation, dissemination and application of patient testimony, and nurse-observed and evidence-derived information. While such systems and tools have been reported in earlier literature (e.g. Balas et al., 1996; Barnes & Barnett, 1995; Liem et al., 1995), even today it is difficult to tell if they can achieve the ultimate goal of changing nursing research utilisation practice behaviors (Philipson & Roberts, 2007).

Numerous implementation and evaluation studies of information systems in healthcare have been reported over the years (e.g. Butler & Murphy, 2007). Most have advocated the need for detailed systems planning, thorough requirements analysis, rigorous project management, and direct involvement of the users in the process. Some have focused on key barriers and enablers in the successful implementation of these systems (Butler & Murphy, 2007). While a few researchers have pleaded for the use of controlled trials in medical informatics research, others have argued the need to consider the behavioral, organisational and social dimensions when implementing and evaluating these systems (Butler & Murphy, 2007). Gururajan, Moloney and Kerr (2005) found that such systems in nursing (particularly in a wireless framework) are complementary to the nursing profession for the utilisation of new evidence. Devices such as hand held computers have been found to significantly reduce the time taken to access evidence (Gururajan et al. 2005).

1.2 Evidence-based practice

The term evidence-based practice (EBP) refers to the standard use of research-related health care governance for which organised practical research has produced valid rigorous evidence for patient care. Alternate terms with the same meaning are evidence-based treatment (EBT) and evidence based medicine (EBM) (Pearson et al., 2005). Recently, evidence-based nursing has been stressed by the nursing profession, which has also strongly encouraged nurses to carry out investigations providing evidence that supports or rejects the use of specific nursing interventions (Pearson et al., 2005). Mounting pressure to utilise current EBP has also come from healthcare insurance providers and healthcare consumers (Sakala, 2004).

Many areas of nursing practice, such as aged care, acute medical-surgical, and mental health nursing, have been confronted with occasions where practice was based on low levels of evidence. Some of this evidence was simply drawn from expert opinion, and larger segments had no true systematic evidence by which to justify a range of practices (Sakala 2004).

Historically, this has left nurses exposed to dangerous practices perpetrated by individuals who had clear evidence for their practice, but who desired to convey the feeling that their methods were superior (Sakala, 2004). As scientific nursing research methods became increasingly popular as an approach to afford firm validation for such rituals, it became apparent there was a need to exclude historical practices that had no scientific basis and no integrity in the field. This also became of way of protecting patients from the dangers of non-verified nursing practice (Sakala, 2004). Furthermore, even in the absence of non-verified nursing practice, value was acknowledged when identifying what actually does work so it can be enhanced and disseminated (Pearson et al., 2005).

Evidence-based practice (EBP) utilisation is a method which aims to specify the way in which nurses make decisions by identifying key recommendations from the literature that can direct and evaluate a high standard of practice based on scientific merit. Its goal is to eliminate low standard or high risk practices in favour of those that are more likely to produce positive patient outcomes (Pearson et al., 2005).

EBP stems from various research methods and is utilised in a multitude of ways (e.g. cautiously summarizing outcomes from research, producing accessible research summaries, increasing nursing knowledge and applying findings from research) to encourage and, in some instances, to coerce, nurses and associated decision-makers to be more aware of evidence that can inform their decision-making. In the setting it is applied, it encourages nurses to use the best available evidence, i.e. the highest standard of information available (Pearson et al. 2005).

Pearson et al. (2005, p. 1) state, ‘the ongoing debate on the nature of evidence for practice across all of the health professions is influenced by the experience of clinicians in everyday practice who, in using the evidence, assert that there are diverse sources of research-based and non-research-based evidence and that the process of evidence-based practice should be placed within a broader context that is grounded in practice; recognises different evidentiary bases; and is directed towards improving global health across vastly different practice contexts’.

1.3 Scientific nursing inquiry

Scientific inquiry in health care has increased, as evidenced by the growing number of research studies reported at professional conferences and in professional journals (Duffy, 2007). In spite of this increase, a gap still exists between the generation of new information and the use of this knowledge in clinical practice (Pearson et al., 2005).

In other words, scientific knowledge is not being applied in clinical settings by nurses, even though the application of research findings can have a direct impact on optimal client outcomes (Alsop, 1997). Averis and Pearson (2005) are able to confirm the gap between knowledge generation and its use. It has become evident that even with the increased production of evidence-based information, knowledge, and improved procedures for the transfer and dissemination of this information, the frequency of use and impact of knowledge has not increased substantively. Simply because relevant information which is timely, objective and in the hands of the right people becomes available does not guarantee it will be utilised. Research utilization, therefore, cannot be taken for granted (Averis & Pearson, 2005). It is imperative that

the end user understands the utilisation process and remains a key stakeholder throughout the process—if not a change agent themselves (Rogers, 2003).

White et al. (1995) stated: ‘the gap must be bridged between research and research utilization’ (p. 418). In order to bridge this gap, it is crucial to understand the nature and extent of the suggested change and to heighten the value of using research to guide nursing practice which, in turn, will define strategies that facilitate research utilisation.

1.4 The need for nursing research

Nursing domains are characterised by cost minimisation, technology enhancement, increasingly knowledgeable patients, increasing use of outcomes and restructuring of nursing systems. This encourages nurses to provide efficient and effective care (Yorke, 2008). Research that explores evidence-based care, therefore, must be appropriately disseminated, understood, integrated and assessed as an ongoing process. Research must categorise and appraise existing knowledge, answer questions, and determine new knowledge through the systematic inquiry of an identified problem. Nurses have an individual responsibility to ensure that research is used in their practice. Failure to meet this obligation blocks the research utilisation process (Yorke, 2008)

An important reason for using research in nursing practice is that it generates significant benefits. Research can advance the nursing profession, improve patient care and enhance professional image (National Institute of Clinical Studies, 2005). Research outcomes may also result in a description of newly-identified scope for nursing practice, classification of specific phenomena of interest to the profession or the generation of new nursing theories (AHRQ, 2007).

1.5 Research utilisation

Although many enhancements have been produced in the dissemination of nursing research, a gap still remains between the growth of useful research outcomes and their accessibility to nurses who will most benefit from them. Regularly, knowledge and recommended intervention shaped in the course of evidence-based practice research stays largely untouched due to researchers' restricted resources and a deficit

of recognized utilisation purposes and objectives (Averis & Pearson, 2005). Recent efforts by the Joanna Briggs Institute have focused on expanding the scope of work in utilisation and increased evidence-based utilisation strategies through integrating the needs of both international health consumers and health professional championed research into its blueprint—a tactic intended to boost the effectiveness of strategies progressing research to practice (Averis & Pearson, 2005).

The historical nature of nursing research exists so as to alter current practice, or to verify it. Yet the task of embedding new understandings and new products from research into practice can expand over decades or generations (McCloskey, 2008; Brenner 2005). It is worth noting caution is necessary when moving new research into practice as it needs to be evaluated, replicated, and refined for individual clinical settings based on a multitude of variables. It should not be pursued by a meticulous process of refinement and review but, rather, by the gap between the research target group and the world of practice that surrounds it (McCloskey, 2008).

Research addressing evidence-based practice utilization—or research utilisation as it is sometimes labeled—has produced a rich source of information on what does and does not work. However, as the gap does pre-exist, information flow for those that need the answers has not progressed from the research pool of knowledge where potential solutions exist (Brenner, 2005). Modern-day thinking has led to key terms such as embedding the evidence being utilized so that it is applicable to the language of the target audience. The overall intent is to ensure a standard of care is raised to address patient care deficits. However, herein lies the problem: not having pre-existing nurse skill and knowledge that will enable such recognition (McCloskey, 2008).

What is evident from the literature is that there is no common process used by institutions; and due to the lack of common processes, nurses are confronted with a barrage of evidenced-based information at their doorsteps. Presently in the majority of nursing circles, effective and continuous research utilisation is an unrealistic concept. The ever-expanding body of research evidence further adds to the escalating dilemma that is facing the nursing profession (McCloskey, 2008).

1.6 Advancements in technology

In the last decade, the connection between research utilisation endeavours and the desire for information technology experts to understand technology adoption within the nursing domain has grown. What is clear from the literature is that computer and software technologies play a vital role in enhancing the rates of research utilisation by nurses (Athey & Stern, 2002). A fundamental concept stemming from available literature is the lack of access to clinical reasoning information for the nurse clinician. Present findings in the literature would suggest that this issue is a generic international issue (Baxter & Boblin 2008). Baxter and Boblin (2008) found through their research with baccalaureate nurses that continued education was a prerequisite to ensuring nurses developed sustained decision making skills, however, access to education is always limited by factors such as time and nursing workload. In Baxter and Boblin's (2008) extensive literature review it was evident that many clinicians who have delved into nurse decision making have deduced that decision making is a learnt skill that must be encouraged by nurse educators. Yet there is a dearth of research that explores nursing decision making. Baxter and Boblin's (2008) findings suggest that if nurse educators are to teach this skill, it is necessary to have a better understanding of the kinds of decisions nurses are making in the clinical setting, and how they are sourcing the evidenced-based information to make such decisions.

Standing (2007) supports the notion that decision making is a learnt behaviour and tools to assist this learnt behaviour need to be adopted. Standing's (2007) research suggests that nurse educators alone cannot assist newly-registered nurses to refine and develop this skill. Specific strategies and support mechanisms need to be created to enhance and complement this learnt skill. Knowing the kinds of decisions nurses are making (and sometimes not making) in the clinical setting should prompt nurse educators to reevaluate whether curricula provides the necessary tools to facilitate the development of decision making and whether nurses are sufficiently encouraged to engage in making decisions based on research utilisation (Standing 2007). Recognising that nurses make decisions related to assessment in their early careers, but focus less on these decisions in later years, reinforces the need for nurse educators to continue to emphasise the importance role assessment plays in decision

making and providing effective and safe patient care. Decision making will only improve if decision makers are taught to systematically assess, gather information, plan, implement, and evaluate nursing care (Standing 2007). Currently, nursing tools do exist that help achieve this, however, access to such systems by nurses is very limited. Contributing factors to this include PC numbers, time, and patient acuity (Gururajan, Moloney & Soar, 2005). Athey and Stern (2008), through their research efforts, found that technology is a key solution to aid decision making in nursing and may also aid in research utilisation. Research also suggests that if technology is to be adopted as a solution, then principles of innovation diffusion should be considered (Davies, Bagozzi & Warshaw, 1989; Gururajan, Hafeez-Bag & Moloney, 2005; Gururajan, Moloney & Soar, 2005). Stephenson (2001) and Torisco (2000) suggest that mobile computing is the realtime solution to providing healthcare professions with information that can inform decisions. Their research has suggested that further exploration is required to not only understand how health professionals such as nurses will accept this technology, but also to determine the type of information that can be either sent or received into devices such as handheld computers. Based on previous research conducted by Gururajan, Hafeez-Bag and Moloney (2005) and Gururajan, Moloney and Soar (2005) it is evident that research utilisation can be assisted by wireless technologies, and further exploration of this concept is required.

1.7 Relevance to information systems

By providing new ways for nurses and their patients to readily access and use health information, information technology has promise in enhancing the quality, safety and competence of health care. However, relatively few health care providers have fully adopted IT. Low diffusion is due partly to the complexity of IT investment, which goes beyond acquiring technology to changing work processes and cultures, and ensuring that physicians, nurses and other staff use it. However, it is also due largely to the lack of evidence and ineffective information flow to the clinician and policy maker to encourage adoption (Davis, et al. 2003). What is clear is that academics working outside of the nursing profession in disciplines such as business and information systems can play a role in paving the path for change by assisting

with innovation diffusion (Gururajan, Hafeez-Bag & Moloney 2005; Gururajan, Moloney & Soar 2005).

In addition, certain aspects of the market such as payment policies that reward volume rather than quality and the fragmentation of care delivery do not promote IT investment and may, in fact, hinder it. Because of its potential, policymakers need to better understand how information technology is diffused across providers, whether action to spur further adoption is needed and, if so, what steps might be taken. In order for this to occur, policy makers need to better understand the evidence behind these innovative ideas to justify their implementation. In order to receive the flow-on of evidence, the barriers that slow the flow of this evidence need to be better understood. Any policy to stimulate further investment must be carefully considered because of possible unintended consequences—such as implementation failures due to organizations' inability to make the necessary cultural changes (Davis, et al. 2003). Information systems are the future to improving the retrieval, synthesis, organization, dissemination and application of patient-reported, clinician-observed and research-derived information. Further research is required to streamline and automate these processes for healthcare clinicians.

1.8 Intention of this research

Based on the introductory overview, the intention of this research is to ascertain directly from the profession itself some of the true or hidden reasons averting nurses from utilising research evidence in practice. As outlined in the introduction, many academics, nurses and researchers (McCloskey, 2008; Baxter & Boblin, 2008; Brenner, 2005) have explored this phenomenon and have offered varied opinion on the most appropriate course of action. However, based on much of the research conducted by Rogers (2003) and the principles of innovation diffusion, this study has been conducted on the premise that to truly provide real solutions one must identify and target identified inhibitors and facilitators that exist in the unique context of individual nursing settings.

To achieve this, a mixed method of research was chosen that would firstly explore identified themes from the literature. Using the identified themes from the literature,

a set of open-ended questions were derived that would assist in exploring this phenomenon in a selected cohort of the nursing profession. Semi-structured homogenous focus groups were chosen as the major method for collecting data in this stage of the research study with the intention being to ascertain whether those factors identified in the literature were truly generic to a selected nursing setting. To obtain a good representative sample of the profession, six focus groups were conducted with a minimum of six representatives per group. This quantity of focus groups was chosen to determine whether an element of saturation of nursing opinion and perceptions would sift through in the discussion. Each focus group discussion was conducted over a period of one hour and each group were asked an identical set of open-ended questions and the answers recorded. Ethics approval was obtained for this study from Queensland Health and the University of Southern Queensland prior to any participant involvement. Informed consent was obtained from individual participants prior to any line of questioning.

Once recordings were transcribed the raw text was entered into the software application Leximancer. 'Leximancer is a software platform that enables users to find meaning from text-based documents. It automatically identifies key themes, concepts and ideas from unstructured text with little or no guidance. The innovative concept map allows users to interact with the analysis—navigating the true meaning of the text' (*UQ News*, 2008). Themes and concept maps derived from this software were then used to:

1. compare against those identified in the literature review
2. to ascertain those inhibitors and facilitators that exist in the unique context of individual nursing settings
3. to develop:
 - a view from the nursing group being researched on current nursing research utilisation practices in Queensland.
 - a perceived nursing research utilisation model/individual nursing context within their own clinical environment.
 - an ideal nursing research utilisation model that would assist all nursing

4. to develop a survey tool for further comparative and confirmatory analysis of themes identified in both the literature and qualitative analysis.

To ensure validity of the survey tool it was decided to not only base the survey on those factors identified from focus groups, but to also structure the questionnaire on a well-tested tool in the literature. Identified from several sources in the literature (Crane, 1985a; CURN Project, 1981, Closs, Bryar, 2001; Funk et al. 1991a) was the Conduct and Utilisation of Research in Nursing questionnaire. The survey tool for this research was then based on a combination of those factors found in this questionnaire and those identified through qualitative analysis.

To confirm those themes identified from nursing, four basic steps to factor analysis were utilised to generate some comparative quantitative statistics:

- generation of the correlation matrix and data collection
- initial factor solution extraction
- interpretation and rotation
- building of scales or factor scores to employ in additional analyses.

Descriptive statistics and those construct scales were then used to confirm those themes and concepts used to generate the recommended utilisation model and further define some solutions for the individual nursing context.

Having established the context of the research problem, the following chapter (Chapter 2) provides an overview of the current literature.

Chapter 2: An overview of current literature

2.0 Literature review

An extensive literature review was conducted to identify an initial list of inhibitors and enablers for research utilisation which helped to formulate an early conceptual model. A three-step search strategy was utilised in each component of this review. An initial limited search of MEDLINE and CINAHL was undertaken, followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe articles. A second search using all identified keywords and index terms was then undertaken across all included databases. Thirdly, the reference list of all identified reports and articles was searched for additional studies.

2.1 A summary

After substantial efforts at both a national and international level to produce more nurse-friendly evidence-based practice adoption tools and to instil confidence and knowledge in the process of research utilisation, the practice is still considered to be very poor (Closs & Cheater, 1994; Estabrooks et al. 2003; Funk et al. 1991; Funk, Tornquist, & Champagne, 1995). Factors identified in the literature indicate several different contexts as potential barriers to successful utilisation. These include the consumer/patient, the social setting of nursing, the organisational effects, financial and political interference, communication breakdown, and the idea or concept itself. Within each context appears to be several noteworthy factors, mainly knowledge (both nurse and patient), nursing skill, time, access to new evidence, and evidence-based practice leadership (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003; Brenner, 2005). Based on this review, further detail is provided on the current knowledge available that can assist in understanding this recognised phenomenon.

2.2 Previous research

The essential goal of nursing research is to raise the standards of patient care by increasing nursing knowledge and skill for practice by embedding substantiated and relevant research into practice. However, the present understanding of the extent to

which nurses utilise research in their practice and, for that matter, the factors that either promote or discourage it, are limited (Armitage 1990). Previous research has focused on individual nurses rather than the external forces that may be at play which affect a nurse's capacity to use research; and the majority have failed to consider negative or positive influential characteristics from research findings or innovations themselves (Champion & Leach 1989). It cannot be assumed that dissemination of results from research equals utilisation. Many research attempts have not taken into account the complex nursing workloads that exist. Research has also assumed that nurses are able to make free choices in the delivery of patient care, and has neglected the multi-disciplinary nature of healthcare and its organizational complexities (Brenner, 2005).

Champion & Leach (1989) conducted a survey on a sample of 59 nurses from the south-west of the United States. The nurses were asked to rate their agreement with 10 statements about research use, such as 'I apply research results to my own practice'. The mean for this 10-item 5-point Likert scale was 3.48 indicating, on average, a slight agreement with statements concerning use of research in practice. Champion and Leach (1989) interpret this as a moderate commitment to using research in practice and found that considerable research and solutions are required in order to bridge the existing research utilising gap that exists in nursing. They were also able to predict that this gap would continue to increase due to the escalating volume of research being produced.

Brett (1987) surveyed 279 nurses on their level of adopting different nursing practices. Alarming, in this research, well over 50% of nurses were not utilising research and of those that were the adoption of nurse research evidence was on an ad hoc manner with less than frequent intervals. Coyle and Sokop (1990) surveyed 200 nurses in North Carolina using the same instrument as Brett (1987)—producing similar results with well over 70% of nurses surveyed not participating in research utilisation exercises.

The continuing use of the nursing process has been identified as a fundamental quality within the nursing profession (Mallory et al. 2003). However, Mallory et al. (2003) also highlight the profession's failure to acknowledge the value of using

nursing research to inform and improve clinical practice, including the use of evidence summaries and therapeutic guidelines. Hence, the gap from research-to-practice exists in all levels of the nursing profession, highlighting a failure to recognize the link between research and practice for many years as demonstrated by researchers such as Cole (1995) and Kenty (2001).

Numerous nurse researchers (Closs & Cheater, 1994; Estabrooks et al. 2003; Funk et al. 1991; Funk, Tornquist & Champagne, 1995) have cited a multitude of barriers for the utilisation of research or evidence-based practice in the clinical setting. Common factors have included:

1. Understandability in terms of readability and clarity.
2. Lack of value of research, as applied to clinical practice.
3. Lack of time.
4. Limited authority to implement evidence-based practices.
5. Unwillingness to change.
6. Lack of support.
7. Access.
8. Lack of organisational support.
9. Incomprehensible results from research to the average staff nurse.

Evidence-based nursing has been described as the delivery of nursing that gives emphasis to dependence on information produced from the results of scientific research (Stevens & Pugh 1999). Jennings and Loan (2001), McKenna, Cutcliffe and McKenna (2000), and Evans (2003) clearly demonstrate support for the pecking order of best practice evidence in nursing. A hierarchy of evidence based upon the NHMRC development, evaluation and implementation of clinical practice guidelines published in 1999 has been adopted by many evidence based institutions, i.e. The Joanna Briggs Institute, and The Cochrane Collaboration (Averis & Pearson, 2003). These levels assess the validity of research advice stemming from research that is determined to be of an appropriate quality. Hence, when published, these recommendations of best practice evidence are usually found in a hierarchy format. New research evidence is of the utmost importance in nursing as it ensures the standard of care delivery has a good chance of improving. Without a screening

process for quality such as those used by the Joanna Briggs Institute it leaves open the possibility that poor levels of research advice are used to guide practice. This is one reason why research utilisation within the nursing profession is of the utmost importance as, without it, patient care standards are likely to diminish. Hence, to maintain the gold standard, research evidence needs to be synthesised using meta-analysis of randomised clinical trials or, where randomised clinical trials of sound quality have not been undertaken in the field, the use of one high standard research should be used to guide nursing practice (Averis & Pearson, 2003).

According to Averis and Pearson (2003), lower levels of evidence, which must be scrutinised closely, include poorly controlled or uncontrolled studies; conflicting evidence; poor research design and data collection practices; and poorly analysed data sets. Within nursing, however, the use of levels of evidence stemming from quantitative research alone was considered by many to be problematic. What became apparent in the nursing profession was that nurses needed to explore a process of systematic review which delivered more content-specific evidence in a qualitative format. This is because nurses do not operate from a sole medical model but, rather, have a holistic approach to patient care. Hence, nursing has a duty to produce evidence which is more holistic in nature and aligned with patient and social needs (Evans & Pearson, 2001). Evans and Pearson (2001) believe the production of systematic reviews relevant to the nursing profession to be a valuable contribution in moving the profession to a higher place of recognition. Through research and the synthesis of relevant findings, nursing can make a valuable contribution to patient care standards. In today's society, with increasing technological development accompanied by a rapid expansion of nursing literature and an annual rate of publication as large as 47 000 in multiple formats, nursing is witnessing an evidence-based information explosion. As a consequence of this information explosion, nursing no longer has the capacity to keep absorbing new knowledge on a steady basis. Embedding this evidence is becoming increasingly difficult and is destined to become more challenging (Evans, Pearson, 2001). Evans and Pearson (2001) also stress that another consequence that has and will continue to result from this information overload is the ability to find the right source of evidence to guide nursing practice amongst the expanding volumes of published materials.

The problems of escalating volumes of research and locating the correct source of evidence further exacerbate other barriers to research utilisation, such as the ability for nurses to learn. Numerous authors have detailed teaching strategies, innovative in nature, which educate nurses about research and its place in providing quality standards of care (Ludemann, 2003; Poston, 2002). Mandleco and Schwartz (2002) highlight strategies such as proposal development and research poster presentation as tools that may bridge the gap between research evidence production and nursing practice, whereas Angel, Duffey and Belyea (2000) suggest using an evidence-based practice implementation project as a method to improve knowledge transfer, enhancing nursing skill base and decision making capacity. Suggestions such as those presented by Angel, Duffey and Belyea (2000) have been tried and tested and, although successful outcomes can be demonstrated as outlined by research conducted by Fallon et al. (2006), elements of time, heavy workload patterns in nursing and limited access to evidence-based information still prevail as key barriers to research utilisation (McKenna et al. 2004).

Stemming from the work of Fallon et al. (2006) is clear evidence that implementation projects will only work where nursing participants in the exercise feel included and possess ownership. Further to this, it would appear nurses need to utilise research implementation processes they are already familiar with.

Another fundamental concept stemming from the literature (Grbich et al. 2008; Parse, 2007) which has added fuel to the increasing issue of poor research utilisation in the nursing profession is undergraduate training. Although this concept has been applied to undergraduate nursing courses, its approach in a traditional research course has been neglected (Parse, 2007). Undergraduate nurses tend to focus on developing core clinical skills, rather than enhancing research knowledge and skill and, therefore, research becomes an afterthought. Adding to this issue is the fact that research is not viewed as core business in the majority of healthcare settings. Thus, graduating nurses entering the profession are not research savvy and tend to approach clinical care with a set of blinkers, particularly in the first few years of postgraduate placement. Hence, they are unable to think laterally and explore other options that may assist with their patient care. As the culture of healthcare already

devalues research, these nurses are absorbed into the existing cultural norms (Grbich et al. 2008).

Research is often seen in nursing as having insignificant useful applicability to nursing settings. By demonstrating the relevance and value of good evidence that stems from research, a structured research course would enable nursing students to visualise changes that relate to previous clinical experience and eventually lead to an embedding of good evidence into their clinical practice after graduation (Tavares et al. 2007). Presently, however, university systems have not placed enough emphasis on research knowledge and skill within their set curriculum (James et al. 2006). Tavares et al. (2007) discuss the need for undergraduate research courses to be redesigned and taught using the hierarchies of evidence as a building platform. The concept here is to start with a seed and allow it to germinate. If new nurses possessed prior knowledge on levels of evidence, they should hypothetically be able to distinguish between poor and high level practice guidelines when using them.

2.3 Change management

Research utilisation models that include attitudes have been proposed to explain and improve the dissemination process. Rogers (2003), the most recognized of these theorists, notes that studies of diffusion process have a valuable place in introducing change to healthcare. By considering nursing perceptions, attitudes, values and ideas, and including staff in the change process, Rogers (2003) diffusion of innovation model has become a popular medium for introducing change (Hilz, 2000; Lee, 2004).

Investigations of the intricacy of the inhibitors that influence change management practices reveal that the transfer of new evidence into nursing settings remains one of the most taxing areas of research-based practice (McDonnell 1998). Positive nursing attitudes towards the application of new evidence in practice, whatever the nursing setting, appears a pungent indicator of research utilisation (Parahoo et al. 2000); however, attitude alone is not a sufficient measure as issues such as skill, knowledge and time must also be factored in (Rogers 2003). One key contribution to the challenges of transference into practice may well be that research utilisation in

nursing is considered an organisational issue rather than an individual nursing issue (Pallen & Timmins, 2002). A review by Pallen and Timmins (2002) attests that to truly achieve the perfect evidence-based nursing practice setting, each practising nurse—including senior nursing leaders—needs to take on responsibility and accountability to improve practice.

Research within healthcare (Lee, 2004; Rye & Kimberly, 2005; Rogers et al. 2005) using diffusion of innovations as an element of research design has resulted in a body of evidence consisting of a plethora of publications. The innovation diffusion process is perhaps one of the most commonly-researched and well-documented social phenomenon. To date, research on the diffusion process has been reported in nearly two dozen distinct academic disciplines, including geography, sociology, economics, education, and healthcare and is now becoming increasingly popular within the research world of nursing (Hilz, 2000; Lee, 2004).

Despite the extant literature on diffusion of innovation research within healthcare, there still exists a major deficit when implementing findings into nursing practice. When health researchers do complement their study with diffusion principles there appears to be a limited selection of principles that are addressed, and what is evident is that basics in change management principles are not being incorporated into planning (Buller et al, 2005). What is also evident from the many studies that have utilized Rogers's (2003) theory is that it is well-liked and understood by many nurses. This is likely to be linked with the fact that it is complementary to pre-existing quality assurance processes that are used within the healthcare sector. Also contributing to this is the fact it does consider staff opinion, as opposed to some traditional change management strategies such as the power-coercive strategy which ignores staff opinion and makes the change for the welfare of the organization (Sanson-Fisher, 2004).

2.4 Research utilisation models

Several structures for nursing research utilisation have been developed over the last four decades (Table 1). These numerous models emerged from the profession's ongoing efforts to employ or broadcast nursing research and, eventually, advance patient outcomes. The models vary in their structure and procedural format in terms

of processes, structures, target populations, and specific outcomes. As an example, the target population may be an educator, researcher, academic, registered nurse, or even a carer. Structures can sometimes be established within an organisation's corporate governance. The exact processes and outcomes of any research utilisation project could be manipulated by obtainable resources and support schemes (Closs & Bryar, 2001).

Table 1: Outline of research utilisation models

Research utilisation models		
Source	Discussion Domain	Process
(Crane, 1985a; CURN Project, 1981, Closs, Bryar, 2001; Funk et al. 1991a)	Conduct and Utilisation of Research in Nursing Project (CURN)	<ul style="list-style-type: none"> a) Problem identification b) Assess knowledge base c) Design practice change/innovation d) Conduct clinical trial e) Adopt, alter or reject change f) Diffuse innovation g) Institutional change and maintain innovation over time h) Outcome: change in client outcome
(Stetler 2001)	The Stetler-Marram Model	<ul style="list-style-type: none"> a) Preparation phase b) Validation phase c) Comparative evaluation phase d) Decision-making phase e) Translation/application phase f) Evaluation phase g) Outcome: use of findings in practice
(Rogers 2003)	Rogers Innovation Diffusion Model 1.	<p>Some of the characteristics of each category of adopter include:</p> <ul style="list-style-type: none"> a) innovators - venturesome, educated, multiple info sources, greater propensity to take risk b) early adopters - social leaders, popular, educated c) early majority - deliberate, many informal social contacts d) late majority - skeptical, traditional, lower socio-economic status e) laggards - neighbours and friends are main info sources, fear of debt

Research utilisation models		
Source	Discussion Domain	Process
		<p>Rogers also proposed a five stage model for the diffusion of innovation:</p> <ul style="list-style-type: none"> a) Knowledge - learning about the existence and function of the innovation b) Persuasion - becoming convinced of the value of the innovation c) Decision - committing to the adoption of the innovation d) Implementation - putting it to use e) Confirmation - the ultimate acceptance (or rejection) of the innovation
(Kleiber, Titler, 1998).	The Iowa Model of Research In Practice	<ul style="list-style-type: none"> a) Expected outcomes documented. b) Practice interventions designed. c) Practice changes implemented. d) Process and outcomes evaluated. e) Intervention modified if required. f) Outcome: improving clinical practice through research.
(Jones, 2000)	The Linkage Model	<ul style="list-style-type: none"> a) User system b) Resource/knowledge-generating system c) Transmission mechanism d) Feedback mechanism e) Outcome: transmission of research innovations
(Graham and Logan, 2004)	The Ottawa Model of Research Use (OMRU)	<ul style="list-style-type: none"> a) Evidence-based innovation b) Potential adopters c) The practice environment d) Implementation of interventions e) Adoption of the innovation f) Outcomes resulting from implementation of the innovation
(Rycroft-Malone, 2004)	The Promoting Action on Research Implementation in Health Services (PARIHS)	<ul style="list-style-type: none"> a) The level and nature of the evidence to be used b) The context or environment in which the research is to be placed, c) The method by which the research implementation process is to be facilitated.

2.4.1 Research utilisation models: a comparative analysis

Although more and more quality research articles continue to be published within nursing academia, there is concern that the use of research findings in practice is not proceeding at a satisfactory pace (Ottenbacher, 1987; Eakin, 1997). Research findings are of little use to the profession if they stay on the printed page (Brown, 1997; Taylor, 1997). The gap between research and practice must, therefore, be closed if nursing is to develop and refine a sound body of knowledge (Lloyd-Smith, 1997). Subsequently, as research evidence is used more frequently as a basis for shaping nursing practice, documenting client outcomes and illustrating how nursing services do make a difference in health care, the value of research will be evident and will be reflected with an enhanced professional and public image (Gilfoyle & Christiansen, 1987; Llorens & Gillette, 1985; Smith, 1989).

The intent of research utilisation models is to provide a solid platform for collaboration and the necessary structure for research utilisation activities to be successful. Examination of the research utilisation models demonstrates more similarities than differences (Kleiber & Titler, 1998). The purpose of all the models is to bridge the gap between research and practice. It is the nurse's responsibility to make choices about which model will be utilised to stimulate evidence adoption. After implementation, models must be reassessed to house the necessary data to provide evidence of their effectiveness in terms of research use, process, cost and utility (Titler et al., 1994).

The CURN model represented one of the first major efforts in research utilisation. It was a complex multistage endeavour intent on improving patient care in the acute care environment. It used a team approach for reviewing research on selected patient care problems, as well as for changing and evaluating practice (Closs & Bryar, 2001). In contrast, the Stetler Model was developed with individual practitioners in mind, but is equally appropriate for groups. Approaches for individual decision making about how to use knowledge were outlined by Stetler (2001). Similar to the CURN model, the Iowa Model (Kleiber & Titler, 1998) focused on research utilisation at the organizational level. This model proposed that problem-focused

and knowledge-focused triggers both provide stimuli for the review and utilisation of appropriate and relevant research findings—with a change in practice ultimately resulting.

Many models (Stetler, 2001; Closs, Bryar, 2001; Funk et al. 1991a; Jones, 2000; Kleiber & Titler, 1998) focused on the dissemination of researching findings at the organisational level, whereas the Innovation Diffusion Process Model (Rogers, 2003) focused on the individual, and how information flows from one individual to another. According to the model, a nurse who adopts a research innovation proceeds through five stages in order to integrate the new knowledge into daily clinical practice. With many models (Stetler, 2001; Closs & Bryar, 2001; Jones, 2000), the individual clinician was viewed as the organizational change agent who would provide the link between research and practice. In the Linkage Model, there were four component parts: (1) a user system; (2) a knowledge-generating part; (3) a transmission mechanism; and (4) a feedback mechanism for research innovations (Jones, 2000).

The CURN model and the Iowa Model identified change in practice as the main goal of research utilisation if a change was justified, whereas the Stetler Model suggested application of research findings as its primary goal (Closs & Bryar, 2001; Kleiber & Titler, 1998; Stetler, 2001). In many instances, these goals were one and the same. Applying research findings to practice often resulted in validation, modification or change in clinical practices. In other words, ‘through clinical innovations, individual professionals and the organizations in which they work are presented with new avenues for answering clinical questions or solving practice problems’ (White et al., 1995, p. 416).

In the Linkage Model, the user is required to have a reciprocal relationship with the research system. All the models are mainly problem-focused in nature. In other words, problem recognition initiates the research utilisation process. The CURN model and Iowa Model were developed with organizations in mind, whereas the Stetler Model was introduced for use by individual clinicians. However, any of the models could be used by either individuals or organizations. Individual clinicians must take responsibility for identification of problems that may be applicable to practice; however, reducing the research utilisation process to the individual level

may inhibit the change process of adopting innovations (Closs & Bryar, 2001; Kleiber & Titler, 1998; Stetler, 2001). As White et al. (1995, p. 416) observed: 'it may be presumptuous to expect individuals to implement change without organizational support'. Most of the models propose that the final application of the innovations should occur at the skill-practitioner level. 'The readiness of the practitioner to use (or not to use) research findings presupposes an existing knowledge base of concepts of basic research, inferential statistics, measurement, and the research utilisation process' (White et al., 1995, p. 417).

The Iowa Model identified triggers as powerful agents for improving clinical practice through research (Kleiber & Titler, 1998). In Rogers's (2003) model, front-line nurses were considered to be organizational change agents. Additionally, some of the models identified the benefits of linking front-line nurses, administrators, students and researchers in the research utilisation process. The literature outlined four levels that individual practitioners move through in research utilisation activities (Jones, 2000).

Perhaps of all available models the one which has the closest resemblance to Rogers (2003) Innovation Diffusion model is the Ottawa model depends on the process of assessing, monitoring, and evaluating each factor before, during, and at the completion of decisions to implement a new innovation. Inhibitor assessments must be conducted on the innovation, the potential drivers, and the practice environment to outline factors that could hamper or sustain the adoption of the innovation. The implementation plan is then chosen and modified to overcome the barriers and enhance the supports identified. Introduction of the implementation plan is monitored to ensure that the likely adopters discover about the innovation and what is expected of them. The monitoring is ongoing to help ascertain whether any change in the present implementation or a new implementation plan is required. Finally, the implementation outcomes are evaluated to determine whether the innovation is producing the intended effect or any unintended consequences (Logan and Graham, 2004).

The PARIHS framework in comparison to others is distinctive in that it ascertains facilitation as one of the key elements in the research utilization process and affords much detail in discovering the potential of success based on the forecast structure of

the model. However, parallel to most models reviewed so far, the prominence is on the implementation element within the knowledge translation process. PARIHS fails to discuss factors related to the knowledge creation process, where other models view creation is also an integral part of knowledge translation (Rycroft-Malone, 2004).

All the models stress the importance of an environment that is supportive and committed to the utilisation of research findings. Similarly, it is imperative that appropriate resources be put in place to ensure success. Both the CURN model and the Stetler-Marram Model require a supportive employment setting, as well as the resources to conduct research utilisation activities in order to be successful (White et al. 1995). Although semantically different, the noted research utilisation processes have a similar intent. The Stetler-Marram model includes a feedback loop; White et al. (1995) suggested multiple feedback loops would be helpful mechanisms for the user to revert back to a previous step when findings indicate this is necessary. The goal of some research utilisation models in practice is to assist with nurse decision-making about evidence-based practice changes, and to fill practice gaps where required. It must be noted though that not all research utilisation models result in nurse practice changes.

Several different approaches, operational definitions and models for research utilisation have been reported in the nursing literature. These models have direct relevance to nursing since they outline a means for closing the research–practice gap. In turn, this promotes evidence-based nursing practice (McCloskey, 2008). Some models focus on applying findings, whereas others are more concerned about the validity of the studies reviewed. Some of the models focus on the organization, whereas others focus on the clinician. Some consider planned change the primary focus, others prioritize educational preparation, and yet others claim critical and problem solving are paramount (McCloskey, 2008). Despite these differences, all have similarities in that: (1) they are prescriptive models; (2) they indicate the nature of research utilisation activities; and (3) they promote evaluation of research findings (White et al., 1995).

Moreover, insufficient data exist for evaluating the effectiveness of any one of the research utilisation models described above in terms of research use, process, cost

and utility at the present time and, to date, no research has been conducted that would indicate whether the end user believes them to be user friendly (Brenner, 2005).

Each of the models emphasize a systematic process of analysis to facilitate the incorporation of research findings into clinical practice. The models suggest that, for research utilisation to occur, certain system mechanisms and components need to exist. The readiness of the practitioner to use (or not to use) a particular model presupposes an existing knowledge base of the research process, critique and utilisation (Alsop, 1997).

2.5 Major themes identified in the literature

Findings from the extant literature offer further support to the theories set out by the National Institute of Clinical Studies (2005) on barriers to evidence uptake. Factors identified in the literature indicate several different concepts as potential barriers to successful utilisation. These include the consumer/patient, the social setting of nursing, the organisational effects, financial and political interference, communication breakdown, and the idea or concept itself. Within each concept appears to be several noteworthy factors, mainly knowledge (both nurse and patient), nursing skill, time, access to new evidence, and evidence-based practice leadership (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003; Brenner, 2005).

2.5.1 Research utilisation in nursing settings

Several studies of research utilisation have been reported in clinical settings using different methodologies compared to the studies above. Hunt (1987) employed an action research approach to study a process involving nurse teachers, charge nurses (head nurses) and nurse managers in attempting to translate research findings into practice. She found that nurse teachers found it difficult to develop the level of critical ability required to evaluate the research reports found in the literature search and that the process was highly time consuming. One of the nursing practices reviewed was mouth care. In attempting to introduce research-based practice, the involvement of other agencies within the hospital besides nursing was found to be just one of the organizational barriers to change. The existing processes for

negotiating these changes were found to be cumbersome and time consuming (Hunt 1987).

Moreover, not all charge nurses adhered to the agreed changes in practice despite being involved in the policy decision and change in supplies. Hunt (1987) found no concrete reasoning for such behaviours and simply attributed this barrier primarily to personality, confrontation, control, and potentially elements of horizontal violence. In Hunt's conclusion, the traditionalist impulse of nursing leaders was profound and was not overcome by awareness of research-based reasons for practice. Hunt discussed how nurses viewed themselves as victims of change, rather than opportunistic change managers and strategists; and that nursing also generally lacked confidence in making individualized evidence-based practice decisions about patient care (Hunt 1987).

Dependence on established routines appears to be a means of maintaining control and ensuring constancy in unpredictable and increasingly changing conditions (Hunt 1987). Armitage (1990) utilised a small working party of nurse managers and staff nurses to examine the degree of evidence utilisation in practice and discover inhibitors affecting research utilisation in practice. The author found very few evidenced-based practice recommendations were being used in nursing practice, and where they were used it was with limited understanding. Armitage (1990) also found that nurses appeared to be hampered by poor journal reading skills; and the literature they offered to colleagues was not seen as useful. Armitage (1990) concluded nurses needed to identify their own problems and find solutions themselves, rather than be provided with potential solutions to problems that were not perceived to exist or of important.

There has been extensive debate on who/what is responsible for an apparent failure to utilise research in nursing (Hunt 1987; McCloskey, 2008; Thompson, Chau & Lopez, 2006). Examples include the perception that it is the nurses' fault for failing to be able or willing to read, believe in and utilise findings. Or is it the researchers' fault for failing to single out relevant areas of research and failing to publish findings to nurses in a readable and understandable form? Or perhaps it is the drivers of healthcare and nursing or the 'system' for failing to reward, encourage and support

nurses in innovative research-based practice. Most of these arguments appear to have been established on a simplistic understanding of evidenced-based practice utilization, suggesting that if researchers conduct and publish research, practising nurses will read it and use it. Clearly this is not the case, nor does it advance one's understanding of the complexities of research utilisation in the nursing profession (Hunt 1987).

Nursing utilisation of research findings seems to be highly complicated, integrating issues such as autonomy and empowerment of practising nurses, executive issues, opportunities for staff development, motivation and job satisfaction, the reporting of research, multi-disciplinary relationships, and the role of the nurse manager, to name but a few (McCloskey, 2008). Limited information exists about the exact extent of research utilisation in the literature. Whether research utilisation is a problem or not is difficult to judge since there is no evidence as to the extent to which nurses base their practice on research. What little research exists is predominantly focused on one unique nursing setting and any application to other countries must be made with caution. It seems clear that there is a need to look not only at the extent of research utilisation for clinicians, but also at the factors that promote and act as barriers to research utilisation. It may be tempting to look at discrete factors influencing utilisation, but it seems that the interaction of multiple factors in influencing research utilisation may be of overriding importance (McCloskey, 2008).

There is much speculation about strategies to improve research utilisation (Bircumshaw 1990, Wright & Dolan 1991, Wilson Barnett et al. 1990), but until nurses are certain whether this is a real issue for the profession, and until it is established what factors may influence research utilisation, nurses can only address a hypothetical problem with hypothetical solutions. Results from previous research have indicated some potential influencing factors that may be worth exploring with a larger, more representative group of nurses. From the evidence found in the literature there would appear to be a need for nurses to self-report the extent of research-based practice and the presence of identified influencing factors. This self-reporting could be used as a part of a framework which aims to demonstrate the status of nursing research utilisation which as yet, is unknown. If positively and negatively influencing factors can be identified, then sound and valid strategies to

promote positive factors and reduce negative ones can be employed to facilitate research-based practice by nurses. The potential impact of research-based nursing practice on standards and quality of patient care should not be underestimated (Bircumshaw 1990, Wright & Dolan 1991, Wilson Barnett et al. 1990).

2.5.2 Lessons from research

Existing tools used to examine research utilisation have focused on research utilisation as a single entity, in particular nurses' ability to access and appraise research reports and implement research findings in practice. The Barriers to Research Utilisation Questionnaire developed by Funk et al. (1991a) has been tested extensively over the past 15 years in a number of countries including the United Kingdom (UK) (Dunn et al. 1998, Nolan et al. 1998, Closs & Bryar 2001), Finland (Oranta et al. 2002), Sweden (Kajermo et al. 1998), Australia (Retsas & Nolan 1999; Kuuppelomäki & Tuomi 2005), and Ireland (Glacken & Chaney 2004). It has also been applied to investigate research utilisation in unique groups of nurses, for example, community nurses (Bryar et al. 2003), and specialist care nurses such as midwives and forensic mental health nurses (Kirshbaum et al. 2004; Carrion et al. 2004). The questionnaire attempts to understand 29 items considered to be barriers to research utilisation. Participants are invited to rank on a 5-point Likert scale the level at which they perceive each item to be a barrier. Factor analysis has typically grouped the items around four factors: the quality of the research; the nurse's research skills, awareness, and values; the characteristics of the organization; and the way in which research is communicated (Funk et al. 1991b). Comparisons of evidence-based findings at an international level indicate that nurses experience similar barriers at a broader level, however, there is still a need for a micro-level of understanding (Shaw et al. 2005).

Studies similar to that of Kuuppelomäki & Tuomi (2005) have attempted to reproduce a similar factor analysis. They were able to confirm these factors, whereas other studies have identified different groupings of items. Retsas and Nolan (1999), Kirshbaum et al. (2004) and Marsh et al. (2001) identified three similar factors to those identified by Funk et al. (1991b), namely, organisation communication, nursing skill and awareness, and research quality. Closs and Bryar (2001) and Marsh et al. (2001) conducted broad testing of the questionnaire and, as a result, raised

significant questions about the content and construct validity of the tool when applied in the UK. It is evident that the application of such a tool cannot be generic to just any nursing culture. Moreover, what is clear from the literature is that this tool must be refined to reflect the social, demographical, cultural, and independent characteristics of the nursing body being studied without compromising the true intent of the questionnaire (Shaw et al. 2005).

Several other questionnaires have been constructed that have examined research utilisation, however, they have not been used as widely as the Barriers questionnaire and, hence, the validity and reliability of the instruments are yet to be fully tested in multiple settings (for example, Lacey 1994; Rodgers 1994; Hicks 1995; Estabrooks et al. 2003; McKenna et al. 2004). In addition, within the context of evidence-based nursing, they centre on the use of research findings rather than a much wider definition of evidence identified as important in the literature and referred to above. However, Estabrook et al's (2003) research did consider broader ranges of information that nurses might draw upon, including multi-disciplinary and patient expertise. This was performed in order to explore the level to which sources of research evidence were utilised, rather than to acknowledge the contribution of a wide range of evidence sources.

From a review of the literature and existing instruments, there would appear to be a need for an evaluation tool which could examine factors influencing evidence-based practice outside of the traditional forms of evidence-based practice in nursing, i.e. a multi-disciplinary approach. A common definition of evidence-based practice which has informed the development of the questionnaire in many studies has been adapted from Sackett et al's. (2000) definition—which emphasizes the interplay of research evidence, clinical expertise and patient preferences. However, the definition of evidence in many studies was extended to include research products such as national guidelines, and local information such as protocols and audit reports (Lacey 1994, Rodgers 1994, Hicks 1995, Estabrooks, et al. 2003, McKenna et al. 2004).

2.5.2.1 Implications for nursing practice

One of the many questions stemming from the literature is how results from research utilisation studies can be translated within nursing organizations. Implications for nurses can be catastrophic as previous research findings disseminated to nurses at administrative levels and practice levels of nursing have often never been deciphered or filtered. Differences in the perceptions of nurses would appear apparent in their attitudes, use of research, and availability of time to research, and support to conduct research (McCloskey, 2008). McCloskey's (2008) research found that at an administrative level, nurse leaders need to understand the different educational levels and needs of those nurses under their management and advocate modelling, mentoring, and the provision of time, skill, and knowledge necessary to become involved in research utilisation.

Although McCloskey's (2008) research found small differences such as education preparation and academic experience, the practical application of her findings supports many popular research utilisation models where nurses are not educationally prepared to critique or understand research. McCloskey (2008, p. 43) states, 'Nurses need to be able to practice within their educational preparation. Staff nurses with a baccalaureate degree are able to critique and evaluate research and therefore able to work toward translating evidence into practice. Nurses with diplomas or associate degrees are not traditionally as well prepared to do these activities; they should be supported if attempting to do so. Staff nurses with a master's degree and advanced practice nurses are in a position to assist evidence-based practice initiatives and translate the findings into practice. They are also better prepared to assist in developing and promoting questions for future research. Managers need to embrace these differences and evaluate and promote nurses according to their educational levels'."

McCloskey (2008) further emphasises that practising nurses should translate research more proactively into practice through effective time management, increased peer support and journal clubs. McCloskey (2008, p. 43) states, 'nurses at the practice level need to acknowledge the differences in the educational capacities of their peers'. Overall, McCloskey outlines that nurses with a degree or higher

education should support each other and become advocates for evidence-based practice activities within the profession. She also purports that the profession should identify nurses with appropriate postgraduate qualifications, and enlist their managers and partner with quality and research nursing expertise to work together in embedding new evidence.

McCloskey (2008) is adamant that future research should continue to identify and address barriers to research utilisation in nursing, with a key emphasis on nursing perceptions that affect the conduct and utilisation of research. She is also insistent in her findings that a key focus should be on addressing these perceived or actual barriers in a variety of nursing organizational systems. Prior research has concentrated on the entire state of nursing research and any inhibiting factors that affect research usage within nursing practice groups or nursing organizations (Funk, Champion, Tornquist & Wiese, 1995; Funk et al., 1991b; Glacken & Chaney, 2004; McCleary & Brown, 2003b).

McCloskey (2008, p. 44) states, 'Future research needs to be conducted and replicated at the organizational level because organizations are different and the systems of support are different'. McCloskey (2008) also asserts that ongoing use of validated research barriers questionnaires is required, allowing for refinement and capability to benchmark results across a large number of nursing disciplines.

2.5.2.2 Patient influence

What is evident from the literature is that patients do have a clear role in evidence utilisation. What is unclear is when and in what circumstances that role either facilitates or inhibits the utilisation of new evidence and, hence, nurses' ability to effectively utilise an implementation model (Stacey, et al. 2008). According to the National Institute of Clinical Studies (NICS) (2006) a patient's knowledge, skill, attitude, and compliance must be taken into consideration when implementing new evidence that directly affects that individual. Research on the role a patient can have in influencing the adoption of evidence is quite scarce. Authors such as Watt-Watson, et al. (2001), Stacey, et al. (2008) and Pipe, et al. (2005) focused on the role patients have in evidence-based decision making, and depict several emerging themes. Coaching the patient would appear to be advantageous as long as

the methods do not cross the boundaries of coercion. The skills of the nurse utilising education methods to engage the client in such practices appear to require a very high standard, otherwise negative perceptions in the client may develop.

Watt-Watson et al. (2001) insist that prior to approaching a patient to coach them on upcoming changes to the care and treatment they are receiving, the nurse should consider the current values that the patient holds. This may include their culture, spiritual belief and, in essence, the faith they have in current regimes. In addition, it would appear fundamental that the nurse considers any conflict that exists, whether internal or external for the patient that may compromise implementation. Researchers (Stacey, et al. 2008; Pipe, et al. 2005) have presented findings indicating that quality of life following diagnosis of a serious illness is enhanced when patients perceive they have had a voice in selecting treatment options. Understanding and then meeting a patient's preferred level of engagement in the decision-making process may be associated with higher levels of decision satisfaction for patients. A promising goal within the nursing profession is increasing patient satisfaction with specific treatment decisions. Although shared decision-making between nurses and patients may empower patients and potentially enhance satisfaction with the clinical encounter, generally there is limited evidence available that documents the more specific relationship between patients' perceived participation and satisfaction with the decision-making process itself.

A clear emerging theme from the literature is the role culminating from the dissatisfaction a patient may have regarding the success of an implementation strategy. Certainly those nurses who choose not to engage a patient in evidence-based practice changes do appear to be taking a significant risk. The engagement of a patient in change management practices does appear, in the majority of cases, to have a more positive outcome:

Watt-Watson et al. (2001, p. 4) state that 'conceptually, patient perceived involvement in decision-making may have a positive impact on satisfaction with healthcare decision-making. When patients are more satisfied with decision-making, they may be more likely to adhere to

health promotion behaviors and treatment regimens. Subsequently, adherence may lead to more positive health outcomes.’

Emerging from recommendations put forward by NICS (2006) is the issue of patient health. A patient’s health status, according to NICS, does appear to directly influence whether implementation strategies are successful. A patient’s health status can alter even during the trial of an intervention. Collated findings from Watt-Watson et al. (2001), Stacey et al. (2008) and Pipe et al. (2005) indicate factors such as patient knowledge and pain are foremost influential in prompting changes to care. A patient’s knowledge base would appear to shape whether or not they are compliant with suggested alterations to care. Furthermore, if suffering from pain the patient may not be prepared to engage in alterations to current practice. Evidence from these researchers indicates that only when a holistic approach is taken with the patient and all facets of that individual’s needs are considered are they more likely to participate in change.

2.5.2.3 The social concept of nursing

Nurses come in many different forms and whether they are a student nurse, new graduate nurse, or experienced nurse each possess role behaviours, norms, sanctions, and status dimensions that are unique to their specific designation. The literature advises that when a nurse changes roles, the process of learning the new role is called socialisation. One could construe from this that if a nurse is to take on a research- or evidenced-based role they too are going through a process of socialisation (Hardy & Conway, 1988).

The literature also refers to professional socialisation, which has been used to describe the social processes that occur between the time a student enters a nursing program and graduates. The professional socialisation that goes on during education in a professional nursing program is designed to shape attitudes, values, self identity, role skills, role knowledge, and role behaviour (Hardy & Conway, 1988). What is evident from the literature then is that if nurses’ attitudes, values, self identity, role skills, role knowledge, and role behaviour are not shaped positively towards a

research culture—and, hence, evidence-based practice awareness—then current cultures in nursing may absorb and influence them in a negative fashion (McCloskey 2008).

Social nursing cultures can breed negativity if a task such as research utilisation is deemed by a group as non-essential to daily practice and this can, in turn, have a long lasting impact on the potential successes for evidence-based practice implementation that many enthusiasts strive for (Randle, 2002).

Randle's (2002) findings from a three-year study exploring the self-esteem of students undertaking a diploma in nursing course imply that when students commence their training they have a moral awareness which they perceive will guide their nursing actions. By the end of the course this moral awareness had been superseded by their willingness to conform to the nursing norms evident in the clinical area. Randle believes that this has real implications for nursing practice.

Further, Randle (2002) believes that inherent in the concepts behind nursing care is the moral honour of the practising nurse, i.e., society in general expects the nurse to have a conscience and to act appropriately. Randle (2002, p. 225) states "Historically, we can witness the emphasis upon this characteristic of the nurse and terms such as 'good woman', 'virtuous', 'pure', and 'motherly' are used commonly to describe nurses. However, findings from this study imply this is not always the case."

A hypothesis that nurses will take 'care' of patients and act in a moral way towards them is challenged from evidence presented by Randle (2002) and it is suggested that more powerful and complex processes shape moral action. Research suggests that many of the barriers to research utilisation within nursing stem from conforming norms within the profession; and even when well-educated on the importance of evidence-based practice in nursing, newer nurses can still lose sight of the importance of research over time as social norms begin to take a strong hold (McCloskey, 2008). Most evident from previous research (NICS, 2005; McCloskey, 2008; Brenner, 2005) is a key theme outlining that the opinions of other nursing colleagues greatly influence a nurse's own opinions, and these opinions can act in either a positive or negative manner. Nurses tend to value and are influenced by the

opinions of those colleagues they work with and respect. If the majority of opinion in a nursing setting is of a negative tone towards research utilisation, then it would appear that many nurses choose to conform to those opinions so they are not perceived as different.

These opinions from nursing colleagues appear to be greatly influenced by the culture within a nursing setting and the lengthy exposure a nurse may have within that culture (NICS, 2005; McCloskey, 2008; Brenner, 2005). Nurses may commence in a clinical setting with good intentions and have a clear and positive direction they wish to pursue with research and evidence-based practice utilisation, but are often forced to conform to the norm of a nursing culture. This conformity can greatly alter those original good intentions to remain an evidence-based clinician (NICS, 2005). Researchers such as Estabrooks (2003) and NICS (2005) believe nurses can become absorbed into the cultural concept that is the profession of nursing and begin to overlook the need for maintaining change as they begin to work within a comfort zone.

Integral to a positive social concept is ongoing collaboration, not only amongst nurses but also the alliance with other professions to work cohesively (McCloskey, 2008). What is clear from the literature is that when nurses do not work collaboratively either between themselves or with other professions it can greatly inhibit the successful implementation of new evidence into practice. Knowledge utilisation practices are generally deemed by many as poor in nurses, mainly due to the lack of collaboration that exists across the profession (Asselin, 2001). This is mainly attributed to the lack of communication that exists between nursing settings—either in the same nursing organisation or across several. Asselin (2001; p. 115) states, ‘There were no variations in utilisation processes as nurses floated across units. Sources of new knowledge were primarily informal and unit based’.

Mutually facilitative and regulatory activities appear fundamental for nursing administrators to influence the use of research (Gifford et al. 2007). Findings put forward by Gifford et al. (2007) have critical implications for sprouting theoretical models describing elements that influence the process of research utilisation. In the facet of what becomes the social concept of nursing, moving the science forward

and testing the link between leadership and outcomes becomes necessary. Gifford et al. (2007, p. 126) state that ‘Qualitative methods are essential for understanding the process of leadership for research transfer.’

The social concept within the nursing profession would appear to have some influence on research utilisation practices. The majority of authors appear to paint much of this influence in a negative light, advising that the profession as a whole needs to revise its own social climate from the ground roots up. Longitudinally, the profession needs to embrace a more positive research culture in every facet of the profession to positively promote research (McCloskey, 2008; Asselin, 2001; Gifford et al. 2007).

2.5.2.4 The organisational concept

Estabrooks et al. (2003) describes that within the nursing profession it is extremely important to understand the organisational concept as this facilitates or inhibits research utilisation. What is clear is that most nurses do not invest the time required to fully understand the healthcare environment they are working in. The organisational concept appears to encompass the way a healthcare system is structured and how it functions, inclusive of nurse managers’ operative knowledge and the extent that knowledge has on relevant domains of action (Estabrooks et al. 2003). What is evident in nursing is that organisational concept is continually changing—which can further cloud a nurse’s understanding of his or her organization and the way it should operate. Corporate and clinical governance continually changes and if knowledge utilisation practices are poor within that organization nurses are often the last know of any proposed change both pre- and post-implementation (Estabrooks et al. 2003).

A notable factor affecting research utilisation by nurses appears to be poorly developed standards for the development of care processes. Care processes are those processes or procedures an organization has chosen that govern a standard of patient care (NICS 2005). These processes can be simplistic or very complicated—depending on the given circumstance. Examples given in the literature indicate that many of these care processes are poorly written, or fail to be evidence-based.

Another interesting factor found in the literature is the low skill mix that nurses actually possess when asked to engage in the development of a new procedure (McCloskey, 2008). Care processes can be greatly affected by this low level engagement as the person closest to knowing what is truly required to improve patient care is often never part of development.

In any organization the staff working in that environment becomes integral to any successes or failures, particularly when considering successful change management practices. Nursing makes up a significant proportion of the staff mix in a healthcare organization. As a group, the decisions that nurses make become fundamental when considering the standards that an organization is trying to maintain. If the nursing majority disagrees with a proposed change then this can make the transition for change very difficult (NICS, 2005). Outside of nursing there are many other senior staff in organizations that might be considered barriers to successful change. The literature (Carrion, Woods, Norman, 2004) has identified hierarchical leaders such as executive personnel in healthcare, doctors, and even allied health professionals as potential barriers to change. Where nurses require permission from more senior personnel to make such changes, and maintenance of effective communication is required to instill change, it would appear implementation problems are escalated (NICS, 2005).

Staff capability would appear to be a significant issue when considering evidence-based practice adoption a success or failure (Rogers, 2003). The capability of nurses to engage in research practices would appear to be an issue if the literature is anything to go by. McCloskey (2008) outlines the deficit that exists in nurse training, particularly at a pre-graduate level. If research utilisation is to be successful then nurses need to have the confidence in themselves to engage in research utilisation activity for the benefit of the patient. The literature also refers to staff capacity as the level of staff, the skill mix, and the individual's capacity to engage in research (both as users of research or initiators) based on time and workload as real barriers and/or enablers (Closs & Cheater, 1994).

Some organizations are better equipped to deal with research and encourage their staff to engage in it. Evident in the nursing literature is the lack of investment in

qualified research nurses by many nursing organizations, and the low prioritization that is actually given to research. Although all organizations will operate under quality assurance guidelines, the processes and resources used to meet national and international standards are not necessarily research driven and can often just be paper-based exercises (Brenner, 2005). In general, the individual nurse is expected to engage in research activity on top of already busy workloads and, hence, research stays at the bottom of the 'to do' pile. With growing populations, aging populations and a restricting economy the ratio of nurses to patients continues to create risk within care environments, and less time to devote to research utilisation activity (Baxter & Boblin, 2008). Existing nursing structures appear to be under pressure due to changes in skill mix and nurse-patient ratios. Different nursing levels and qualifications are being considered as a means to address gaps in clinical needs (Duffield et al. 2007):

Duffield (2007, p. 2) outlines that 'the impact of restructuring on staff is not necessarily accounted for in the process of change, which is unfortunate, as the pressures of cost containment usually lead to an emphasis on work redesign to deliver care in more efficient and cost effective ways. However as hospitals undergo restructuring there is little evidence that efficiency or outcomes actually improve. Despite this, restructuring can have significant implications for patients and the nursing workforce.'

NICS (2005) has clearly identified structures, particularly those that evolve within nurses, as barriers to research utilisation. If restructuring disrupts workloads and time management patterns within nursing, then evidence based-practice implementation can become a low priority as nurses try and readjust to new working conditions.

2.5.2.5 Economic and political concept

O'Byrne and Holmes (2009) surmise that nurses are political agents both as imposers through pastoral power and as recipients of the social contract that positions them as trustworthy, honest, and caring individuals. O'Byrne and Holmes

(2009, p. 9) state that ‘indeed, an analysis of stigma, deviance, and hard/soft power explicitly shows how nursing practice is ultimately political’.

Nurses continue to work with patients to help them optimize their health by providing education and strategies for survival. Alongside this continued holism are the nurse’s attempts to mitigate the potential for ill health. External factors such as increasing economic influence and healthcare remaining a political football by which politicians will attempt to influence voters impact directly on the individual and political concept in which nurses already operate (NICS, 2005). Policy decisions made at either a state or federal healthcare level appear to directly correlate with decreasing standards of care and, hence, can inhibit nursing’s attempts to maintain or improve standards (O’Brien & Holmes, 2009).

Estabrooks (2003) further supports the notion that external political and financial factors can greatly influence the likelihood of nurses utilising evidence. Barriers can present in the form of insufficient funding or political decisions that directly affect nursing numbers, structures, qualifications, and pay scales. External influences such as these are often not as apparent as more obvious nurse-related or patient barriers—and can be overlooked as a contributing factor. NICS (2005) specifies financial arrangements, regulations and corporate governance or policy as major factors that influence research utilisation within an economic and political concept. Much of the issue surrounding regulation and corporate governance appears to be related to research not being recognized as core business and/or funding being diverted into specific hotspots in healthcare to gain political ‘brownie points’. Hence, funding diverted into research, particularly nursing, is rather poor. The combination of these factors greatly reduces the likelihood of nurses engaging with good research practices (NICS, 2005; Estabrooks, 2008)

2.5.2.6 The innovation itself

The concept of innovation in nursing is necessary if the profession is to move forward as a lateral thinking body. However, with innovative ideas comes the complexity of understanding something new and foreign. One relevant example in nursing is the introduction of new technologies to support patient care,

documentation and communication, and decision making. When the innovation appears complicated, it requires extensive education and training for utilisation which may impact upon nursing time and, thus, concerns and doubt can set in. The difficulty with introducing new innovations is that it is not easy to engage and sell a new idea to all of the nursing body. There may also be a percentage of individuals who do not agree with the change or the newer way of doing things (Bircumshaw, 1990; Armitage, 1990; Hughes, 2006)

Feasibility appears to be a real issue as it is one thing to have an idea, but it is another to actually implement it. Some nursing settings simply may not be ready or perhaps it is just not cost effective. In many instances in healthcare where initiatives are instigated, appropriate cost analysis or cost predictions have not been conducted or adequate consultation and communication has not occurred. Due to these factors, unforeseen barriers to research utilisation come to the surface and prevent the completion of the implementation (Estabrooks, etal, 2003).

Outside of something being feasible is the question of credibility. According to Rogers (2003), credibility typically has two major components: trustworthiness and expertise, which both have objective and subjective components. Trustworthiness appears to be established more on subjective features, but can contain objective dimensions such as recognized reliability. Expertise appears equally subjectively apparent, but also comprises somewhat objective characteristics of the basis or message (e.g., credentials, information quality or certification). Within the nursing profession, trustworthiness and expertise are essential to a positive and industrious nursing team and a quality patient relationship. Where nurses feel suspicion towards a new innovation and have no confidence in the expertise of the individual driving the change there is a low probability the change will be successful Rogers (2003). Rogers viewed credibility of innovation as fundamental to successful implementation of new ideas. At times, to demonstrate credibility, a research team may need to work slowly and build up trust within a nursing sector; alternatively, the innovator may be well-known and will need to maintain credibility and a trusting working relationship.

One issue that appears to be conceptualised in much of the literature (National Institute of Clinical Studies, 2005; Rogers 2003; Hilz, 2000; Lee, 2004) is the theme of accessibility. If an innovative idea or new piece of evidence has not been widely disseminated or information is not forthcoming to aid in decision making then the likelihood of adoption is also low. Information to guide decision making needs to be freely available to allow nurses to understand and accept a new innovation prior to implementation (Rogers, 2003). Rogers (2003) also outlines that a new innovation needs to be attractive to the intended target population. Nurses would need to see real benefit in the research innovation and, through its attractiveness, want to engage in change management practices they find appealing.

2.5.2.7 Individual professional knowledge

Evident in the literature is the need for nurses to possess knowledge on research, its processes and, particularly, the importance of research in healthcare. If more nurses understand that with more research comes knowledge, and with good research comes higher standards of evidence-based practice, then evidence-based practice implementation projects are more likely to be successful. With this knowledge, the literature attests that more nurses are likely to want to engage in research utilisation practices (Estabrooks, 2003; Rogers, 2003).

With expanded knowledge comes the issue of persuasion. If the profession is unable to persuade all nurses of the value that research utilisation has in clinical practice and the improvements it can have in clinical care, barriers may become apparent. Each unique initiative will require persuasion—which has strong links to the credibility of a researcher and the initiative (Evans & Pearson, 2001). Baxter and Boblin (2008) suggest that understanding what is best for a patient may interfere with a quality implementation project if nurses have any doubts and are unable to draw a conclusion. They advise that nurses' decision making capacity may act as a barrier if the tools that usually aid decision making are not made available.

Rogers (2003) expands on the concept of implementation, suggesting that if the process of implementation chosen by the individual is not nurse friendly and therefore removes participant choice or decision making capacity, then successful research implementation is unlikely. For example, if those driving the initiative

adopt an authoritarian style other nurses are less likely to comply as they are not truly able to be part of the change process.

Rogers (2003) details the concept of confirmation and emphasizes the importance of this stage in an innovative change process. In this phase of the implementation process the nurse would finalize his or her choice to maintain using the innovation and employ the innovation to its greatest potential. Alternatively, if they have not been a party to that change they may choose to reject it.

Time appears to be a genuine issue when considering research utilisation. It is highlighted by many authors (Baxter & Boblin, 2008; Evans & Pearson, 2001; Estabrooks, 2003) as a barrier to change and has been connected to the issue of workloads in nursing and the overall tasks nurses need to perform. It would appear real solutions are required by the profession to enhance the time available to nurses so they can invest it in research activity. Patient care is a priority for all nurses and nurses will always put this ahead of any other activities. The literature (Baxter & Boblin, 2008) advises that until nurses are provided with off-line time, research utilisation practices are unlikely to improve.

Access to new information would also appear to be a real issue. With an ever-increasing volume of publications occurring, particularly in electronic format, nurses would appear to find it difficult to keep up with the volume of information (Baxter & Boblin, 2008). In addition, nurses do not appear to have the electronic access required to even sort through the volumes of information that do exist (McCloskey, 2008).

According to Estabrooks (2003), understanding research and the need to utilize the latest evidence stemming from research is not something that comes naturally to nurses. The knowledge required to achieve effective evidence utilisation practices in the past has not been instilled into nurse training programs; and nursing organisations have not recognized this as core business. In the majority of instances, nurses do not appear to have the knowledge required to engage in research, or perceive the activity as too hard because of that lack of understanding (McCloskey2008).

2.5.2.8 Communication

Throughout the research utilisation process there is evidence that not all nurses exert an equal amount of influence over other nurses (Rogers, 2003). According to Rogers (2003), Opinion Leaders exist—people in charge who are prominent in dispersing either negative or positive information regarding a new piece of research evidence. Rogers relied on the two-step flow theory in mounting his concepts on the impact of Opinion Leaders during the diffusion process. Nurse leaders would have the most influence throughout the assessment stage of any implementation process and, hence, how they communicate and convey ideas will greatly influence how other nurses perceive the proposed change. In addition, nurse leaders should possess traits that distinguish them from their nurse followers. Nurse leaders typically have increasing contact with mass media, more multinational exposure, greater connections with change agents, added social practice and exposure, elevated socioeconomic status, and ought to be more innovative (Rogers, 2003).

Fundamentally, factors that appear to either enable or inhibit successful research utilisation—according to Rogers (2003)—are the basics of verbal communication, written communication and, in a society more reliant on technology, electronic communication. If these facets of communication are not strong in the profession of nursing, particularly with nurse leaders, then research utilisation practices are destined to fail (Rogers, 2003).

2.6 Assessing nursing utilisation of evidence-based recommendations

2.6.1 The BARRIERS to research utilisation questionnaire

Funk et al. (1991a) suggested that one of the factors inhibiting the development of change strategies might be the lack of an effective tool for undertaking ‘diagnostic analysis’ and developed the BARRIERS to research utilisation questionnaire as a response to this need. The questionnaire has as its theoretical base the model of diffusion of innovation developed by Rogers (1983). This model identified four concepts, or factors, which are important to the adoption of change: the characteristics of the adopter (the nurse), the characteristics of the organisation (the

setting), the characteristics of the innovation (the research); and the characteristics of the communication (the presentation and accessibility of the research). The BARRIERS questionnaire was developed from the literature based on the CURN project questionnaire (Horsley et al., 1983) and from informal data collection. The questionnaire consists of 29 items (Table 2) and respondents are asked to rate each item in relation to the extent to which they perceive the item to be a barrier to research utilisation on a scale from 1 (no extent) to 4 (a great extent). There is a no option (5). The developers undertook a study to test the validity of the scale and the strength of the relationship of the 29 items to the four factors. Another smaller study examined the reliability of the scale over time. This study involved 17 students in a masters' program who completed the questionnaire on two occasions, one week apart. It was found that there was adequate reliability of the tool over this short period of time (Funk et al., 1991a).

The major results from the questionnaire showed that the nurse did not feel he/she has enough authority to change patient care and there was insufficient time on the job to implement new ideas. The third ranked barrier concerned a characteristic of the nurse, demonstrating they were unaware of the research (Funk et al., 1991b). Subsequently, the BARRIERS tool has been used in a number of reported studies (Retsas & Nolan 1999; Kirshbaum et al. 2004; Marsh et al. 2001) both in nursing and allied therapies. This tool is included as Appendix 1.

2.6.2 Limitations of tool

Although the Barriers Scale itself has been proven useful in identifying barriers, Parahoo (2000, p. 96) found that 'the high proportion of "no-opinion" answers, related to "research", could have affected the overall ranking of barriers'. For example, Parahoo outlines the following point: 'The conclusions drawn from the research are not justified' as a question which requires a respondent to possess research skills and knowledge. If the respondent does not have this knowledge or skill, then 'no opinion' is likely to be given. A high percentage score for this question is, therefore, unlikely to truly reflect the barriers' potential impact (Parahoo, 2000). Parahoo (2000, p. 97) advises, "it would be useful to find out why a number of items, all related to 'research', attracted a high percentage of 'no

opinion’.” This could be indicative of lack of research skills and knowledge for nurses to outline more accurately whether this deficit is blanket across the discipline.

Parahoo (2000) also outlines another limitation with the use of this tool: the use of a convenience sample which he believes inhibits the capacity for generalization of findings to other populations. Also in Parahoo’s research 47.4% people failed to respond, which lead him to the issue of motivation as a major factor. Unfortunately, no research to date has collected this data on nursing profile for non-responders (Parahoo, 2000). Finally, Parahoo (2000) emphasizes that little importance should be placed on the ranking of these barriers as the differences in scores between them can often be small.

2.7 Theoretical Underpinnings

2.7.1 Diffusion of innovations theory

Diffusion of innovations theory was initially recognized by Everett Rogers in his 1962 book called *Diffusion of Innovations*. Diffusion in the context of adopting a new innovation has been defined as a process by which a new initiative can be communicated between certain paths over time among the associates of a social network. An innovation (i.e. new technology) is a concept, exercise, or entity that is sensed to be new by a person. Communication becomes fundamental in this theory as it is the basics in communication between the innovator and the recipients that can alter diffusion in either a positive or negative fashion (Rogers, 2003). In Rogers’s work he categorized innovators as early adopters, early majority, late majority and laggards and, in doing so, suggests there are many reasons as to why an individual or a societal network may fit into either category, i.e. facilitators or barriers to adoption. Each person’s ability and desire to adopt an innovation would hinge on their familiarity, appeal, assessment, trial, and adoption. Some of the characteristics of each category of adopter as per Rogers (2003) include:

- Innovators—venturesome, educated, multiple info sources, greater propensity to take risk
- early adopters—social leaders, popular, educated
- early majority—deliberate, many informal social contacts

- late majority—skeptical, traditional, lower socio-economic status
- laggards—neighbours and friends are main info sources, fear of debt.

Rogers also proposed a five stage model for the diffusion of innovation:

1. *Knowledge*—learning about the existence and function of the innovation
2. *Persuasion*—becoming convinced of the value of the innovation
3. *Decision*—committing to the adoption of the innovation
4. *Implementation*—putting it to use
5. *Confirmation*—the ultimate acceptance (or rejection) of the innovation.

2.7.2 The S-Curve and technology adoption

According to Rogers (2003), the adoption curve becomes an s-curve when collective adoption is used. Rogers conceived that new innovations would broaden through the social order in an S curve, as the early adopters choose the technology first, trailed by the majority, until an innovation becomes common.

The rate of technology adoption appears determined by two characteristics- p , which is the pace at which adoption procures, and- q , the rate at which subsequent growth transpires. A more cost effective innovation may have a higher- p , for example, procuring more quickly; while an innovation that has network effects (like email, where the worth of the entity improves as others get it) may have a higher- q .

Technology adoption in healthcare coincides with available evidence. Without a clear understanding of the evidence, clinicians are less likely to adopt a new innovation. Rogers Innovation Diffusion Model is therefore very relevant to this study as a theoretical model.

For this research, diffusion is defined as the process by which evidence-based practice (EBP) is imparted through specific means over time among the nurses of a clinical area. Given that decisions are not authoritative or collective, each nurse of the clinical area faces his/her own innovation-decision that follows Rogers's five stage model for the diffusion of innovation.

The most relevant feature of diffusion theory to this research is that, for most members of a social system, i.e. nurses, the innovation-decision depends heavily on the innovation-decisions of the other nurses within the system. In fact, empirically the successful spread of an innovation follows an S-shaped curve.

Critics of Rogers's theory have implied that the theory has been made so simple that it tends to overlook many of life's complexities. These critics would attest that many other phenomena can manipulate innovation adoption rates. One such claim is that consumers regularly adapt technology to their own needs, so the innovation itself may alter in characteristics from the early adopters to the later user. A second is that diffusion patterns may radically alter due to technology interruptions and hence established technology may start an alternate competing S-curve. Finally, path dependence could lodge specific technologies in place, as was the case with the QWERTY keyboard which is the most used modern-day keyboard layout on English-language computer and typewriter keyboards (Rogers 2003).

2.7.3 National Institute of Clinical Studies

The principles behind this theoretical model enforce that it is important to be able to ascertain the barriers to evidence uptake. The theory details that in nursing and healthcare as a whole exists evidence-based practice gaps that can decrease the standards of care offered to patients. By identify barriers, the first principle suggests nurses will better understand how to avoid or minimise these barriers and, hence, encourage a more successful utilisation of validated evidence. The theory also advises that the gap between current practice and best available evidence often is determined and influenced by these barriers. It suggests that nurses and other health professionals should utilise known tools such as brainstorming and focus group discussions to try and discover hidden barriers within their work environments. The theory operates on the same principles as root cause analysis found in integrated risk management processes (NICS, 2005).

Outline of key findings from the literature

Factors identified from this extensive literature indicate several different contexts as potential barriers to successful utilisation. Noteworthy themes were consumer/patient barriers, the social setting of nursing, the organisational effects, financial and political interference, communication breakdown, and the idea or concept itself. Lessons learned from this review when considering the context of this research endeavour were that every nursing setting will possess its own unique barriers and, to fully address the problems faced with research utilisation, nurse leaders must address this uniqueness through root cause analysis (McCloskey 2008). Within each theme appears to be several noteworthy factors, mainly knowledge (both nurse and patient), nursing skill, time, access to new evidence, and evidence based practice leadership (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003; Brenner, 2005). Theoretical underpinnings, particularly Rogers's (2003) Innovation Diffusion Theory, and NICS (2005) barriers to evidence uptake theory were found to be ideal in the context of a research paradigm. Rogers's theory is mentioned widely throughout the literature (McCloskey 2008; Coyle & Sokop 1990) and although NICS (2005) is not cited the principles stemming from this framework are well supported.

Chapter 3: Research Design and Underlying intentions

3.0 Overview of research design

To best answer the proposed question (section 3.1) a mixed methods research paradigm was chosen as it was felt this would offer a broader, more holistic look at the target population. Mixed methods research as a methodology was chosen for its direct connection in the intricacy met by researchers in culturally diverse networks when work is focused on a social justice agenda (Creswell & Plano-Clark 2007; Mertens 2005a). It was also selected because it embraces three underlying factors which were important to this study. These were: a focal point on research outcomes through emphasis on the importance of the questions asked rather than the methods of data collection; a need to collect different opinions from those living the experiences with an intention for advocacy.

As a research design, mixed methods research was chosen for its ability to encompass both quantitative and qualitative data collection techniques. Thus six sets of focus group schedules were used for data collection and analysis with smaller samples. These were set up for refinement, extension and explanation of specific quantitative findings such as statistical relationships and differences among groups, or unexpected results in the participants' own words (Creswell 2002; Krueger 2000; Silverman 2006). In addition a highly structured numerical survey questionnaire for data collection and analysis was used with a larger sample (de Vaus 1995; Johnson & Christensen 2004). Additionally,

An epistemological and methodological pluralism was promoted so that future researchers are informed about epistemological and methodological possibilities and, ultimately, so that nurses are able to conduct more effective research. Hence, the method was chosen as it was deemed to make this research more effective. An extensive literature review was conducted to ascertain themes and concepts that would then constitute as propositions worth exploring during the conduct of this research. These concepts were then generated into open-ended questions and participants were asked to respond to these questions in the form of focus groups.

Emerging concepts from the focus group data were then combined with existing questions asked by the literature and a survey tool was generated. This survey was distributed to a small sample and tested for reliability. A larger sample was then targeted. Findings from both qualitative and quantitative paradigms were then merged and compared against the literature to determine the factors that influence the employment of research utilisation by nurses in Queensland.

Focus of the study

The focus of this study was to confirm and discover user-friendly research utilisation processes for Queensland nurses. Rogers (2003) innovation diffusion theory was chosen as a grounding for a theoretical model in combination with other attributes found in the literature because diffusion in nursing is a process of social change in which an innovation (Research evidence) is communicated over time through certain channels (mass media or interpersonal) among members of a nursing social system. Therefore a nurse's decision to adopt or reject an innovation (Research evidence) would be conceptualized in several stages like those found in the framework proposed by Rogers. Rogers (2003) suggests five attributes of an innovation which would apply well to nursing, namely, relative advantage, compatibility, complexity, trialability, and observability. This research sought to identify variation of factors facilitating and/or inhibiting research utilisation practices amongst Queensland nurses by applying these attributes.

'Despite an extensive diffusion literature, there still appears to be a 'lack of diffusion' of research findings into clinical practice' (Mahajan & Peterson, 1985, p. 11). Thus, when health researchers do link the diffusion principles to their study, a limited selection of the many principles are addressed (Buller, Andersen & Walkosz, 2005). Recent studies have incorporated diffusion theory more fully into their design. Identifying barriers to evidence uptake and changing practice can be difficult (Tzou & Lu, 2009; Lee & Shih, 2009; Tung & Chang, 2008; Lee, 2004). There are a number of barriers to change, which differ in different settings and times and require further investigation. Identifying the barriers to change is an important step in planning to close evidence-based practice gaps. Strategies specifically chosen to address identified barriers are more likely to effect change (Shaw et al., 2005).

Further, this research included the goal of gap breakdown in identifying the gap between current Queensland nursing practice research utilisation and idealistic research utilisation, as well as the current level of adoption. It was anticipated this would help with the provision of insight into areas of research utilisation which could be improved for Queensland nurses. The gap analysis process involved determining, documenting and approving the variance between current nursing practice research utilisation and idealistic research utilisation. Gap analysis naturally flowed from benchmarking and survey assessments. Once the general expectation of research utilisation in the nursing profession was understood, it was possible to compare that expectation with the research samples current level of research utilisation practice. This comparison became the gap analysis. It is worth noting that this research was not able to perform the analysis at the strategic or operational level of the organisation/s.

This has resulted in the following research question:

3.1 Research question

Research Question: What are the factors that influence the employment of research utilisation by Queensland nurses?

This research sought to better understand the methods and processes that assist nurses in adjusting constructively to new evidence-based systems, procedures, processes, workflow, organizational relationships and other differences as they occur—as well as highlighting known inhibitory factors to proposed innovations.

The table (Table 2) below is a summation of those factors resultant from the literature where evidence has suggested a potential influence on research utilisation by nurses. Provisional themes have been constructed based on determinants found in the literature and major factors influencing provisional themes have been identified.

To determine the extent to which these factors influence each provisional theme, a proposition was constructed that would allow exploration of the population of choice, namely Queensland nurses.

Table 2: Provisional questions based on the literature

Dependent measures	Provisional Theme	Measurable Factors	Propositions	How will these be measured	Reference
Behavioural Intention towards research utilisation by nurses	1 Consumer	<ul style="list-style-type: none"> • Knowledge • Skills • Attitude • Compliance 	P 1: Patient context will affect the acceptance of research utilisation by nurses.	<p>Nursing perception pre and post implementation of these measurable factors.</p> <p>Note: These measures were only be subjective measures. This research did not attempt to measure changes to determinants of adoption from an objective perspective due to workplace implication.</p>	<ul style="list-style-type: none"> • National Institute of Clinical Studies (2005)
	2 Social Concept	<ul style="list-style-type: none"> • Opinions of colleagues • Culture of work • Collaboration • Leadership 	P 2: Social context will affect the acceptance of research utilisation by nurses.		<ul style="list-style-type: none"> • Institute of Clinical Studies (2005) • McCloskey 2008 • Brenner 2005 • Estabrooks (2003) • Gifford et al. (2007) • (Asselin, 2001)
	3 Organisational concept	<ul style="list-style-type: none"> • Care processes • Staff • Capacities • Resources • Structures 	P 3: Organisational context will affect the acceptance of research utilisation by nurses.		<ul style="list-style-type: none"> • McCloskey 2008 • National Institute of Clinical Studies (2005) • Estabrooks (2003) • Baxter and Boblin (2008) • Brenner 2005
	4 Economic and political concept	<ul style="list-style-type: none"> • Financial arrangements • Regulations • Policies 	P 4: Economic and political context will affect the acceptance of research utilisation by nurses.		<ul style="list-style-type: none"> • Institute of Clinical Studies (2005) • Estabrooks (2003)
	5 The innovation itself	<ul style="list-style-type: none"> • Feasibility • Credibility • Accessibility • Attractiveness 	P 5 The innovation itself will affect the acceptance of research utilisation by nurses.		<ul style="list-style-type: none"> • National Institute of Clinical Studies (2005) • Rogers (2003) • Hilz (2000) • Lee (2004)
	6 Individual professional	<ul style="list-style-type: none"> • Knowledge • Persuasion • Decision • Implementation • Confirmation • Time • Access • Knowledge 	P 6: The individual professional will affect the acceptance of research utilisation by nurses.		<ul style="list-style-type: none"> • Rogers (2003) • Evans and Pearson (2001) • Estabrooks (2003) • Baxter and Boblin (2008)
	7. Communication	<ul style="list-style-type: none"> • Verbal • Written • electronic 	P 7: Communication will affect the acceptance of research utilisation by nurses.		<ul style="list-style-type: none"> • Rogers (2003)
Dependant Variable The S-Curve	8. Laggards	<ul style="list-style-type: none"> • Time 	P 8: Nurses are currently laggards when utilising research.		<ul style="list-style-type: none"> • Rogers (2003) • Hilz (2000) • Lee (2004)

3.1.2 Propositions:

The provisional lists of propositions which will be tested are as follows:

Proposition 1: Patient concept will affect the acceptance of Research Utilisation by Queensland nurses.

e.g. Patients may expect certain services or standards of care based on experience and knowledge. This may result in refusal to receive changes in treatment (National Institute of Clinical Studies, 2005)

What is clear from the literature is that the patient in certain circumstances may have the capacity to directly or indirectly influence an attempt to make changes to clinical practice. It would appear that nurses should remain aware of patient perceptions and embrace the patient as a change agent (NICS, 2005). Patients enter into healthcare with their own interpretations of what constitutes good care. Where new evidence conflicts with those standards they have anticipated barriers to change may develop (NICS, 2005)

Proposition 2: Social concept will affect the acceptance of Research Utilisation by Queensland nurses.

e.g. Local opinion leaders may encourage the use of forms of care that have not been shown to be effective simply to maintain public support (National Institute of Clinical Studies, 2005)

Much of the literature (McCloskey 2008; Estabrooks 2003; Brenner 2005) details nursing as a unique society. Nursing remains a distinctive culture and, as with any culture or society, possesses both positive and negative attributes (Gifford et. al., 2007; Asselin, 2001). Societal norms within the profession have been suggested as potential barriers to research utilisation (NICS, 2005).

Proposition 3: Organisational concept will affect the acceptance of Research Utilisation by Queensland nurses.

e.g. Burdensome paperwork or poor communication may inhibit provision of effective care (National Institute of Clinical Studies, 2005)

NICS (2005) emphasises that when considering the adoption of new evidence into a nursing setting those conducting the implementation should consider barriers that stem from within an organization. Much of the literature (McCloskey, 2008; Baxter & Boblin, 2008; Brenner, 2005) outlines issues such as poor corporate governance and leadership frameworks as inherent problems which may obstruct attempts to change nursing practice. Organisational barriers to research utilisation appear to vary between different nursing settings and different nursing organisations which makes it fundamental to establish known and hidden barriers to change in each unique setting (Estabrooks, 2003).

Proposition 4: Economic concept will affect the acceptance of Research Utilisation by Queensland nurses.

e.g. Reimbursement systems may promote unnecessary services or discourage best practice (Garland, et al, 2003).

Finance and resources stand out in the literature as potential drivers or inhibitors to evidence-based practice change (NICS, 2005). What is clear from the literature is that without appropriate funding nurses can find it difficult to engage in research practices (Estabrooks, 2003).

Proposition 5: The innovation itself will affect the acceptance of Research Utilisation by Queensland nurses.

e.g. Clinical practice guidelines may be perceived as difficult or inconvenient to use, i.e. removing an established practice such as screening for lung cancer with a chest x-ray (National Institute of Clinical Studies, 2005).

Much of the literature (Rogers 2003) addresses changes to practice based on new evidence as innovative change. If not implemented in the correct way, or with the

right change management processes, the literature advises that many issues may arise which can impede the progress of implementation (Hilz, 2000; Lee, 2004; Rogers, 2003). NICS (2005) encourages the consideration of the innovation itself as the practice change may alone create a barrier. Understanding the likely impact of each new innovation may alleviate such barriers.

Proposition 6: The individual professional will affect the acceptance of Research Utilisation by Queensland nurses.

e.g. Clinicians may not agree with a certain guideline or the concept of guidelines in general. Clinicians may not have the motivation or confidence to change (Garland, et al, 2003).

Wide sources of literature refer to the impact an individual nurse can have on research utilization practices within a clinical setting (Estabrooks, 2003; Baxter & Boblin, 2008). Issues such as skill and knowledge are widely discussed, along with the nurses' busy work schedules—all of which have been detailed as directly affecting a nurse's desire to participate in research activity (Evans & Pearson, 2001). Rogers (2003) refers to the perceptions of an individual as having a major bearing on innovation diffusion and recommends careful consideration of these perceptions prior to implementation.

Proposition 7: Communication will affect the acceptance of Research Utilisation by Queensland nurses.

A large part of Rogers (2003) innovation diffusion model is the use of effective communication throughout all phases of innovative change. He advises that good communication is central to the success or failure of an innovative change and, without it, health professions are highly likely to resist change.

Proposition 8: Queensland nurses are currently laggards when adopting research.

Recent research by McCloskey (2008) and Lee (2004) support the notion that in healthcare settings nursing can operate on the spectrum of early adopters or laggards

when adopting evidence. Early preparation should determine at what end of the spectrum nurses sit (Rogers, 2003; Hilz, 2000).

Table 3 shows the provisional research framework which guided this study.

Table 3: Provisional research model for this study

Provisional Theme		Measurable Factors	Provisional questions	Reference	What are the factors that influence the employment of research utilisation by nurses?
1 Consumer Concept	→	<ul style="list-style-type: none"> • Knowledge • Skills • Attitude • Compliance 	P 1: Patient's will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • National Institute of Clinical Studies (2005) 	
2 Social Concept	→	<ul style="list-style-type: none"> • Opinions of colleagues • Culture of work • Collaboration • Leadership 	P 2: Social elements will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • Institute of Clinical Studies (2005) • McCloskey 2008 • Estabrooks (2003) • Gifford et al. (2007) • (Asselin, 2001) • Brenner 2005 	
3 Organisational Concept	→	<ul style="list-style-type: none"> • Care processes • Staff • Capacities • Resources • Structures 	P 3: Organisational factors will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • McCloskey 2008 • National Institute of Clinical Studies (2005) • Estabrooks (2003) • Baxter and Boblin (2008) • Brenner 2005 	
4 Economic and political Concept	→	<ul style="list-style-type: none"> • Financial arrangements • Regulations • Policies 	P 4: Economic and political factors will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • Institute of Clinical Studies (2005) • Estabrooks (2003) 	
5 The innovation itself	→	<ul style="list-style-type: none"> • Feasibility • Credibility • Accessibility • Attractiveness 	P 5 The innovation itself will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • National Institute of Clinical Studies (2005) • Rogers (2003) • Hilz (2000) • Lee (2004) 	
6 Individual professional	→	<ul style="list-style-type: none"> • Knowledge • Persuasion • Decision • Implementation • Confirmation • Time • Access • Knowledge 	P 6: The individual professional will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • Rogers (2003) • Evans and Pearson (2001) • Estabrooks (2003) • Baxter and Boblin (2008) • Brenner 2005 	
7. Communication	→	<ul style="list-style-type: none"> • Verbal • Written • electronic 	P 7: Communication will affect the acceptance of research utilisation by nurses.	<ul style="list-style-type: none"> • Rogers (2003) • Hansen, Severinsson, (2009) 	
8. All identified potential barriers	→	<ul style="list-style-type: none"> • Time 	P 8: Nurses are currently laggards when utilising research.	<ul style="list-style-type: none"> • Rogers (2003) • Hilz (2000) • Lee (2004) 	

The provision model is a summation of those factors resultant from the literature where evidence has suggested potential influence on research utilisation by nurses by multiple factors. Provisional themes have been adopted from determinants found in the literature and major factors influencing provisional themes are highlighted.

3.2 Research method and design

The intent of the research method and design was to gather relevant data to assist confirmation of identified determinants highlighted in the provisional model, and the potential identification of undiscovered influential factors within the target demographic. In addition, confirmed factors from the literature were used in the generation of a survey for distribution which led to a confirmation of research utilisation for nurses in a larger demography.

3.2.1 Literature review (exploratory)

A literature review was carried out in this stage to identify various drivers and inhibitors of evidence-based practice applications as outlined by researchers in a nursing environment. Nassar-McMillan and Borders (2002) outline the importance of deriving initial factors from the literature that lead into the development of questions for focus groups and survey questions. These authors attest that the formulation of questions should stem from the literature and or the population source in order to reduce bias in the development of questions.

Search Strategy

The search strategy aimed to find both published and unpublished studies. A three-step search strategy was utilised in each component of this review. An initial limited search of MEDLINE and CINAHL was undertaken followed by analysis textual words contained in the title and abstract, and of the index terms used to describe the article. A second search using all identified keywords and index terms was then undertaken across all included databases. Thirdly, the reference lists of all identified reports and articles were scan through for additional studies.

The databases searched included:

1. Cochrane library
2. PubMed
3. MEDLINE
4. CINAHL
5. Database of Abstracts of Reviews of Effectiveness (DARE)
6. Worldviews on Evidence based Nursing Journal

7. Journal of Advanced Nursing (Blackwell Publishing Ltd # which publishes systematic reviews)
8. EMBASE
9. ACM Digital library
10. Academic Search Premier, Psychology and Behavioural Science Collection
11. PsycINFO
12. Science Direct
13. Austhealth
14. QuEST [deals exclusively with qualitative evidence]
15. Multiple database search (which combines # ACM Digital library, EBSCOhost research databases, EBSCOhost-Academic search premier, Psychology and behavioural science collection, PsycINFO, Science Direct, Wiley Interscience)

Initial keywords to be used were:

Research Utilisation/ Utilization

Research

Evidence Based Practice

Diffusion of Innovation

Nursing/ Nurse/ Nurses

Adoption factors

Research design

The research method followed in this study involved a reasonable literature review of both healthcare literature and diffusion innovation literature. The rationale for this stage was that while healthcare literature provided details of factors that may impede evidence-based practice adoption, there was very little that offered solutions to successful diffusion of evidence-based practice. Most of the factors appeared to have been documented by anecdotal evidence and scientific reason was lacking in many studies. On the other hand, innovation diffusion literature, while providing strong theoretical frameworks such as Innovation Diffusion Theory, contained limited information on adoption factors specific to healthcare. The integration of both healthcare and innovation diffusion literature would lead to a better

understanding of adoption factors for evidence-based practice in healthcare and, hence, a better theoretical model that could be tested. The deliverables at the end of this stage included a comprehensive conceptual model for the adoption of research utilisation models in nursing.

Overview

An extensive literature review was conducted to identify the initial list of barriers and drivers for evidence-based practice which helped to formulate an early conceptual model. Even though this research area was relatively new it was anticipated that the literature review would be continually updated to incorporate the latest developments in this domain of research.

3.2.2 Focus group (exploratory)

In this stage the primary stage of data collection, six focus group sessions were planned with a total of 36 (approximately six participants for each focus group session) Renal nurses working within Queensland acute hospital settings. The groups consisted of registered nurses and nurse managers or leaders who were directly linked to patient care. The focus group sessions were conducted in an equal distribution of both regional and metropolitan renal care nursing services. The session was facilitated by the lead researcher as facilitator, with a nominated person as a recorder. This stage produced a valuable set of drivers and inhibitors (concepts) which provided the foundations to this study. These concepts guided the development of the survey instrument which would then be distributed to a wider population of acute care nurses throughout Queensland as a confirmatory exercise for the Qualitative component of the study.

Research design of focus group

Homogenous focus groups with semi-structured questions were chosen as the major method for collecting data in this research study as it was decided the qualitative research method provided quality elicited descriptive data from population subgroups. The ability to speak directly with Queensland nurses was viewed as a highly valuable exercise with the intended data extraction exercise resulting in valuable raw data. A group of six to twelve persons were gathered together for a

group interview or discussion on the topic. The technique was used to explore themes that were not well-known to the investigator, such as locally held beliefs on the value of research utilisation and evidence-based practice or traditional practices preferred by nurses. Semi-structured focus groups were also used to elicit opinions on research utilisation in order to develop an understanding of nurses' perspectives on EBP adoption (Bender et al. 1988-89; Carey 1993).

Focus groups have been widely used in the investigation of applied-research problems and are recognized as a distinct and valued research method. The method enabled this research to generate new propositions; to explore intermediate variables as a means of determining if certain patterns existed within the textual data and to confirm or further add to the factors drawn from the literature (Stycos 1981). In focus-group research, as in qualitative methods, reasoning follows from observation of a series of particular facts to a general statement or hypothesis (the inductive method). The strength of qualitative methods for this research was that they generated rich, detailed, valid process data that left the study participants' perspectives intact (Steckler et al. 1992).

Key considerations in focus-group design

There were several key considerations in conducting these focus groups (Morgan & Spanish 1984; Scrimshaw & Hurtado 1987). First, the focus groups examined a narrowly-focused topic. Secondly, the topic was of interest to both investigators and respondents. As the interest level was high, participants were more likely to provide concrete answers and highly detailed accounts of events (Merton, Fiske & Kendall 1956). Thirdly, in conducting the focus group, emphasis was placed on the interaction between or among group members, rather than on the interaction between the interviewer and group members. The objective was to grasp an understanding of the participants' perspective on the topic of research utilisation (Merton, Fiske & Kendall 1956). The size of the budget and time available for conduct of the study were two practical constraints which also affected the overall plan (Morgan 1988).

Design

The design structure selected for these focus-groups influenced the character, quality and reliability of the resulting data. Reasoned and explicit judgments about a number of specific considerations were made. First, groups of six to ten nurses were formed as per guidelines usually recommended (Morgan 1988). Six small groups of 6 per group allowed a greater contribution from each individual participant. The ultimate decision depended on the local culture and norms of the participating renal sites, as well as on the objectives of this study. The research questions were narrowly focused to cater for the small number of respondents in each group. Secondly, the sample was selected using convenience strategies (Scrimshaw & Hurtado 1987; Morgan 1988).

Thirdly, participants selected were from homogeneous backgrounds, therefore, strategies which would facilitate the expression of diverse points of view among participants were utilised (Morgan 1988). Fourthly, focus groups were designed to include participants who are known to one another. This strategy enabled participants to prod one another to tell their own stories: in one sense, the prodders became assistants to the facilitator. Additionally, when the subject matter being discussed was particularly sensitive, respondents felt more comfortable in sharing their points of view among relative strangers. Therefore, the initial job as the facilitator was to create a non-evaluative environment in which group members felt free to express their opinions without concern for the agreement or disagreement of others in the group (Morgan & Spanish 1984).

Conduct

After developing the study design and a focus-group question guide, interest turned to the conduct of the actual focus groups and to data collection. In the actual conduct of a focus group, there were additional decisions to be considered. While the primary emphasis was on stimulating interaction among the participants, as facilitator the other responsibility was to guide the direction of the respondents' comments so that the discussion did not wander too far from the established focus. As per research recommendations each focus group had both a facilitator and a recorder. The facilitator was responsible for conducting the focus groups,

encouraging quieter respondents to speak up, and curtailing garrulous talkers. If not addressed directly, the opinionated individual could redirect the group's discussion. Asking participants to respond to such a person was used as a strategy and this was often an effective way of balancing the group and eliciting responses from the majority (Knodel & Pramualratana 1987; Morgan 1988).

The importance of the recorder's role was not underestimated; indeed, in qualitative interviews, the informant's language was data (Steckler et al. 1992). Observations made by the recorder were also important, because neither tones of voice nor rapid-fire responses could be readily captured by transcription of verbal statements. Note: while the facilitator was skilled at using probing techniques and pacing the group, a digital recorder was utilised to record all sessions. In addition a nominated person also took notes with a pen and pad.

Overview of sample/population

Queensland nurses working in an acute care setting were the only recruitment point for these focus groups. The researcher approached a network of nurse unit managers derived from the state of Queensland and sought nomination for participation. Once six sites had come forward with nominations, an expression of interest went out from the researcher to each facility advertising the date and venue for each focus group session. Participation was voluntary and an RSVP was utilized to ensure numbers were adequate. Informed consent prior to any participation was obtained.

3.2.3 Literature review (confirmatory)

Further literature review was carried out in this stage to integrate the findings of stage 2 with the findings from the literature. The mediating factors were also found at this stage and research model of table 1 would thus be completed. The research design was similar to that of stage 1 where the literature would again be revisited to identify the mediating factors.

The research design was similar to stage 1 where the literature was again revisited to confirm the mediating factors.

At this stage of the research the information from the focus group discussions and any new developments in this research area were revisited to incorporate the findings. It was anticipated that this would help to design a survey instrument to capture wider nursing views.

3.2.4 Survey (confirmatory)

It is worth noting that the primary emphasis of this stage of the methodology was a confirmatory exercise only. This was not the primary method for data collection and hence was only used to further enhance the qualitative component. In this stage, data was collected from Queensland nurses involved in acute patient care about their adoption and usage behaviour of evidence-based practice. Survey participants stemmed from any Queensland hospital prepared to participate, with the survey tool found in appendix 2 being used to collect the data. Traditionally surveys have been used to access quality information in various studies and this technique has also been used successfully in previous nurse related studies as a complimentary source of data for qualitative studies (Pierce, 2004).

3.2.5 Research design of survey

The questions for this survey were generated from those identified themes stemming from the analysis of stage 1 data and then integrated with existing questions already generated by the literature (Champion & Leach, 1989). The development of core questions on nursing research utilisation practices were identified for redesign and tested using a combination of qualitative (thematic analysis) and quantitative techniques (numeric coding of themes). Investigations were carried out on existing questions to assess conceptualisation, question wording, unit and item non-response, system mode effect and proxy response. This provided an understanding of whether the questions were acceptable to interviewers, respondents and proxy responders (acceptability), whether respondents understood and completed question tasks successfully (reliability/validity), and how accurate the outputs were when comparing different modes and in comparison to other measures of research utilisation (Son, 2009).

The survey was generated in three different sections: Firstly, it consisted of demographic data, including the profession, level of experience of the professional, and the physical location of the individual. It was also important to determine the role that the individual has within the renal unit. Secondly, the survey included a section of questions that would assist in determining whether a specific factor identified from stage 1 was a driver or inhibitor within that clinical area. Thirdly, a

section was included in this survey tool that revolved around previous evidenced-based practice adoption. The intent was to determine previous processes of adoption used by that individual and to ascertain whether there was a generic design process for adoption within these clinical areas. Prior to administering the questions, a complete peer review and pilot study was conducted in order to determine the validity of the instrument.

Nursing leaders from within Queensland were represented in the distribution phase of the survey.

Overview of sample/population for stage five

As the only emphasis of the research was the Queensland nurse, the survey was conducted only through health facilities within Queensland. This phase involved collection of quantitative data through wide spread survey distribution as the focus group data collection approach was very limited and did not represent the views of a wider population. Therefore, a survey approach was adopted through distributing hard and soft copies of the questioners. Zikmund (2003) has also identified this approach as an effective way of collecting the views of wider community.

In this stage, data was collected from nurses involved in patient care from different regions in Queensland. The collection phase was based solely on implied consent. It was estimated that a sample of 1000 surveys for distribution would be sufficient which is likely to generate a 20% return rate from respondents, or 200 surveys. Hillyer (2010) explains that there is no magic number when determining sample size for your survey, rather it is about ensuring you have useable data. Therefore as per Hillyer's (2010) recommendations, the following points were used to decide the sample size.

What is the research budget? Can the project afford the desired sample? If not, what are some alternatives/compromises that can be made without affecting the data quality?

What is the population size? Large? Small/Finite? When the population size is

unknown, it is assumed to be large.

What type of analysis will be done on the data? Will subgroups (e.g. males vs. females, youths vs. adults, etc.) be compared in your results?

What is the probability of a respondent answering in a certain way? If you can't be sure through looking at previously collected data, 50% is the estimate you should use.

How much error can you handle? How much precision in your results do you require?

How confident do you need to be that data from the true population value will fall within the confidence interval you chose?

Based on these points of reference and in consultation with a statistician 1000 surveys was deemed suitable (Hillyer, 2010).

While the survey questions were mailed the instruments were developed in such a way to elicit responses of 'how' and 'why'. This was deliberately done in order to discern differences between adoption and usage decision of research utilisation models. In addition, comparing responses to the question about adoption and questions about use would provide evidence that respondents were reporting their adoption drivers and not simply their current behavior.

3.3 Data analysis

Data was analyzed using statistical software applications such as Leximancer and SPSS. Both quantitative and qualitative analyses were performed using these software applications. Qualitative data was transcribed into computer files for analysis. Similarly, quantitative data was coded into a computer file prior to analysis and a file comparator technique was used to resolve any data entry errors. The researcher was optimistic that a minimum sample of 20% of 1000 surveys would establish the validity and reliability of quantitative data. Previous research identified that at least 200 surveys was the minimum required for any meaningful analysis of quantitative data. Randomness of the population was also employed to avoid any collective bias (Bartlett, Kotrlik & Higgins, 2001).

Qualitative analysis

Leximancer software the major component to data analysis was used to analyze the qualitative data collected through the focus group. Open coding and selective coding techniques were employed to the data gathered from the focus groups; such a technique helped to organize the large amount of data into smaller themes and to identify any patterns or interrelationship that may exist (Leximancer 2009).

Leximancer was selected for this qualitative data analysis for several reasons:

- Its ability to determine the main concepts contained within text and their comparative importance using a scientific, objective algorithm.
- Its ability to recognize the strong point between concepts (how often they reappear)—centrality of concepts.
- Its ability to assist the researcher in applying grounded theory analysis to a textual dataset.
- Its ability to assist in visually exploring textual information for related themes to create new ideas or theories; and
- Its ability to assist in identifying similarities in the context in which the concepts occur—contextual similarity.

In particular, Leximancer was deemed to be a useful tool because it aided in exploring the textual data to attempt to uncover important factors. In other words, it was highly useful as there were no prior set of factors from the Queensland nursing population by which to analyze the data (Leximancer 2009; Davies, et al. 2006).

The approach for this was to utilise computational linguistics with a blend of techniques, including Bayesian statistics, to note that the appearance of a word is correlated with the appearance of certain other words. Further content analysis was used to quantify the knowledge within text by coding text segments with a set of concepts. Each concept was then defined by a set of relevant words. Information science was used to establish learnings from traditional information retrieval or IR for processing, indexing, and navigating in a concept space. A method machine learning was used within the Leximancer software package for iteratively growing a thesaurus of words around a set of initial seed words. The visualizations used by Leximancer have benefited from innovation in complex networks (Leximancer 2009; Davies, et al. 2006).

Quantitative analysis

Data cleansing was performed whilst in the Excel format to ensure zero emissions of data and zero errors upon entry. This was performed using the following formula as an example: =COUNTIF(G2:G2263, G2263) + =COUNTIF(G2:G2263,6386)= . Where the result was equal to that total found in the entire column of the spreadsheet, further cleansing was not required. Where the result was not equal to the amount found in that column, the column was manually scanned for error. Once data cleansing was considered satisfactory in the Excel template, captured data was transferred into SPSS for analysis.

The goal for data analysis in this research, like any research project, was to provide answers to the research question. The plan for data analysis came directly from the question, the design, the method of data collection, and the level of measurement of the data.

Analysis model

The following model was used for data analysis:

Stage: Description

- 1 Data entry
- 2 Building an IF formulae to convert text into numbers
- 3 Developing an identification scheme for variables
- 4 Running the IF formulae
- 5 Creating the SPSS template by copying excel numeric data onto SPSS

Once data had been transferred into SPSS format, data that could not be recognised by this software needed to be translated into a numeric format using both a nominal and ordinal approach. Records of intervention from the Excel spreadsheet also required a numeric representation when transferred over to the SPSS database for analysis. This was achieved by categorising the interventions into numeric values.

SPSS software was used to analyze the quantitative data collected through the questioner survey. The following steps were taken:

1. Initially a descriptive analysis was conducted, including a frequency breakdown.

Descriptive analyses undertaken involved the following methods:

Frequency distribution: Frequency distribution was used to display the chaos of numbers in an organised manner so such questions could be answered easily. This frequency distribution was represented in a simple table (a histogram) that, at a minimum, displayed how many times in a data set each response or 'score' occurred. Missing value (Count If): this was utilised as a component of data cleansing before proceeding with further analysis. This was to ensure reliability of data.

Descriptive statistics were utilised to organise raw data into a format that was user friendly. This allowed a grouping of the collected data into several categories. Descriptive statistics were utilised for initial analysis because it would describe patterns and general trends in a data set. Results from the descriptive analysis were sought to both describe and make inferences about the results. The goal of this analysis was to understand a connection between the research question (Factors that influence the employment of research utilisation by nurses) and the raw data.

Therefore, descriptive statistics were utilised to show clear differences in figures. Actual figures and percentages, plus some averages for data, were utilised. No other statistical values from descriptive statistics were viewed as relevant, as they did not contribute to the anticipated outcome. This analysis was mainly interested in monitoring variations and similarities in both the literature and focus group data.

In some sense, descriptive statistics were used as a bridge between measurement and understanding. Outside of the descriptive analysis used in SPSS, simple sums and count formulas were utilised in an Excel spreadsheet format. From there, a descriptive table was formulated to best present the results in a user friendly format. SPSS was only utilised to table the data in a user friendly summary to validate data entry.

Further, descriptive analysis of a case process summary was utilised for the following reasons:

- a) To check the data was satisfactory for further analysis.
- b) Further descriptive analysis using SPSS was unnecessary because the study was only concerned about finding averages, and standard deviation.
- c) The case process summary contributed greater assurance of data accuracy at the data capture level.

A reliability analysis was performed in determining both face and content validity of the survey instrument.

Reliability analysis was to be determined by obtaining the proportion of systematic variation in a scale, which was done by determining the association between the scores obtained from interpretation of Likert scale questions. Thus, if the association in reliability analysis was high, the scale yielded consistent results and would therefore be deemed reliable. Alternatively, if the association of reliability was deemed low, the scale yielded consistent results and would therefore be deemed unreliable.

To determine how sets of questions were behaving or interacting with one another, a correlation analysis was performed.

Correlation has been employed as it can determine just how much of the variation in a variable is related to another. This was deemed important because although this correlation can be fairly obvious data may contain unsuspected correlations. There may be suspicion that there are correlations, but it is not known which are the strongest. Hence this form of analysis was chosen because an intelligent correlation analysis can lead to a greater understanding of one's data (Taylor, Commode, Roberts, 2006).

Correlation was used to describe strong and weak relationships that might exist between the raw data identified from the survey questions. If there was strong correlation, then the questions and resulting data were deemed to operate closely together. If there was weak correlation, then the factors were all spread apart. Correlation coefficients were used to make the numbers show how strong the correlation was. The best known, the Pearson product-moment correlation coefficient, was utilised for this research analysis. If the answer was towards 1, then there was a strong correlation. If the answer was towards 0, then there is weak or no correlation (Taylor, Commode, Roberts, 2006).

One purpose in this analysis was to reduce the information into many variables and into a set of weighted linear combinations of those variables using Principal Components Analysis (PCA), which does not differentiate between common and unique variance. Further the purpose of this research was to identify the latent variables which were contributing to the common variance in a set of measured variables, using Factor Analysis (FA), which attempted to exclude unique variance from the analysis (Taylor, Commode, Roberts, 2010).

Further the intent was to restrict the number of factors extracted to a particular number and specify particular patterns of relationship between measured variables and common factors, and this was done a priori (before seeing the data), then the confirmatory procedure stemming from factor analysis was also of value. (Taylor, Commode, Roberts, 2010) A factor analysis was mainly conducted to help reduce the number of context factor variables to a meaningful, interpretable and manageable set of factors. Once this was completed, tests for significance were performed between various factors. Specifically principal components analysis was utilised as common factor uses only the portion of variance of each variable that is

in *common* with other variables in the diagonal of the correlation matrix. Principal component analysis then uses the entire variance and puts '1' in the diagonal of the correlation matrix. In addition, factor analysis was used to further validate and compare the findings generated from both the literature review and the thematic analysis of focus groups (Arbuckle, 2006).

Steps taken in Factor Analysis (Arbuckle, 2006).

[Step 1](#) Initially the step was taken to Compute a k by k intercorrelation matrix. This enabled a computation of the factorability of the matrix.

[Step 2](#) Next step were taken to extract an initial solution

[Step 3](#) From the initial solution, the appropriate number of factors were determined which were to be extracted in the final solution

[Step 4](#) Where necessary, factors were rotated to clarify the factor pattern in order to better interpret the nature of the factors

[Step 5](#) Depending upon subsequent applications, computation of a factor score for each subject on each factor was carried out

In essence, factor analysis was chosen because it can be applied to explore a content area, structure a domain, map unknown concepts, classify or reduce data, illuminate causal nexuses, screen or transform data, define relationships, test hypotheses, formulate theories, control variables, or make inferences (Arbuckle, 2006). Thus, where reliability testing indicated a low level of reliability for the data collection instrument, factor analysis would overcome this by demonstrating strength between sets of variables. Consideration of these various overlapping usages is well related to several aspects of scientific method: induction and deduction; description and inference; causation, explanation, and classification; and theory. The main reason for choosing factor analysis is its usefulness in testing the strength between variables (Arbuckle, 2006).

Summation of research design

By combining both a focus group design with a survey design the data was able to tell the story behind the numbers. In doing so, the collected data had a triangulation of sources and was able to tackle the research question from more than one point of view. The design enabled the researcher to deal with a wider range of variables, questions, and hypotheses. By merging two distinct methods, the weaknesses of one method can be compensated by the strength of another. In general, it was also believed that it made it easier to connect theory with practice.

Chapter 4: Results

4.0 Extraction of major factors from the literature

Factors identified in the literature indicate several different contexts as potential barriers to successful utilisation. These include the consumer/patient, the social setting of nursing, the organisational effects, financial and political interference, communication breakdown, and the idea or concept itself. Within each context appears to be several noteworthy factors, mainly knowledge (both nurse and patient), nursing skill, time, access to new evidence, and evidence-based practice leadership (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003). Table 4 shown below outlines some of the key factors identified in the literature that had significant potential in affecting research utilisation practices of nurses.

Table 4: Major factors from the literature

Factors	Reference
<ul style="list-style-type: none"> • Knowledge • Skills • Attitude • Compliance 	<ul style="list-style-type: none"> • National Institute of Clinical Studies (2005)
<ul style="list-style-type: none"> • Opinions of colleagues • Culture of work • Collaboration • Leadership 	<ul style="list-style-type: none"> • Institute of Clinical Studies (2005) • McCloskey 2008 • Estabrooks (2003) • Gifford et al. (2007) • (Asselin, 2001) • Brenner (2005)
<ul style="list-style-type: none"> • Care processes • Staff • Capacities • Resources • Structures 	<ul style="list-style-type: none"> • McCloskey 2008 • National Institute of Clinical Studies (2005) • Estabrooks (2003) • Baxter and Boblin (2008) • Brenner (2005)
<ul style="list-style-type: none"> • Financial arrangements • Regulations • Policies 	<ul style="list-style-type: none"> • Institute of Clinical Studies (2005) • Estabrooks (2003)
<ul style="list-style-type: none"> • Feasibility • Credibility • Accessibility • Attractiveness 	<ul style="list-style-type: none"> • National Institute of Clinical Studies (2005) • Rogers (2003) • Hilz (2000) • Lee (2004)
<ul style="list-style-type: none"> • Knowledge • Persuasion • Decision • Implementation • Confirmation • Time • Access • Knowledge 	<ul style="list-style-type: none"> • Rogers (2003) • Evans and Pearson (2001) • Estabrooks (2003) • Baxter and Boblin (2008) • Brenner (2005)
<ul style="list-style-type: none"> • Verbal • Written • electronic 	<ul style="list-style-type: none"> • Rogers (2003) • Hansen, Severinsson (2009)
<ul style="list-style-type: none"> • Time 	<ul style="list-style-type: none"> • Rogers (2003) • Hilz (2000) • Lee (2004)

4.1 Focus group results; central theme generation

Using computational linguistics, content analysis, information science, machine learning, network theory, and elements of physics, Leximancer (2009) was able to automatically produce the concept map depicted in Figure 1. De-identified transcripts from focus group were uploaded to the Leximancer software package. After further defining individual words within the Leximancer, system concepts were automatically generated by the software package and the concept map 1.0 (Figure 1) was produced.

Results indicate that nurses are the central concept of discussions, which was anticipated. Results are supportive to those propositions found in the literature. The below concept map depicts major themes as larger circles and the closer these are to the central theme of the nurse, the stronger the influence they appear to have on research utilization practices. All information contained within the larger circle becomes relevant in discussions about research utilization.

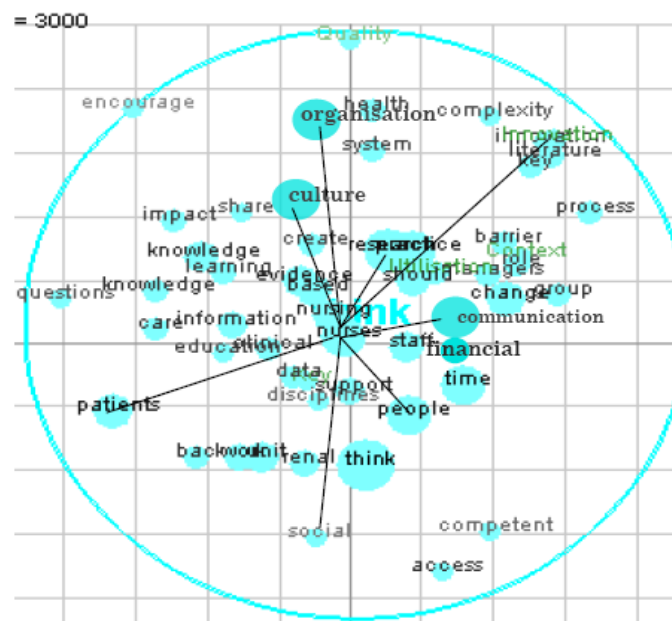


Figure 1: Concept map 1 Overall theme generation

In this phase the theme generation map displays the relationships among the variables investigated. This label needed further explanation as the map could be

called a Concept Map, but it contained a lot more information than the key concepts in the data.

The outstanding feature of the map was the coloured circles. These circles symbolized the significant themes in the data rather than concepts. The circles were shown in colours. The brighter the colour, the superior the dominance of the theme. The circles were distributed on the map depending on the quantity of co-occurrence of the themes in the data. Traverse circles showed co-occurrence of themes. Circles that were further apart outlined themes that did not move together in the data.

As illustrated in section 4.1.1, concepts were encapsulated within the circle representing the theme to which they belong. They were shown as multi-coloured blobs. Similarly the colour coding provided the same purpose as that described above for themes. As could be expected, the most prominent concept enclosed in a theme was awarded the same name as the theme. Other concepts that occurred within that theme were then grouped around the key concept within the theme.

Detailed information about each concept within and across themes was investigated by working several navigation buttons which enable the call up relationships among concepts and supporting evidence from within the data.

In addition to themes and concepts, this stage also generated statistical data which was used to analyse the relative and absolute frequencies of all the concepts.

4.1.1 Individual nurse concept

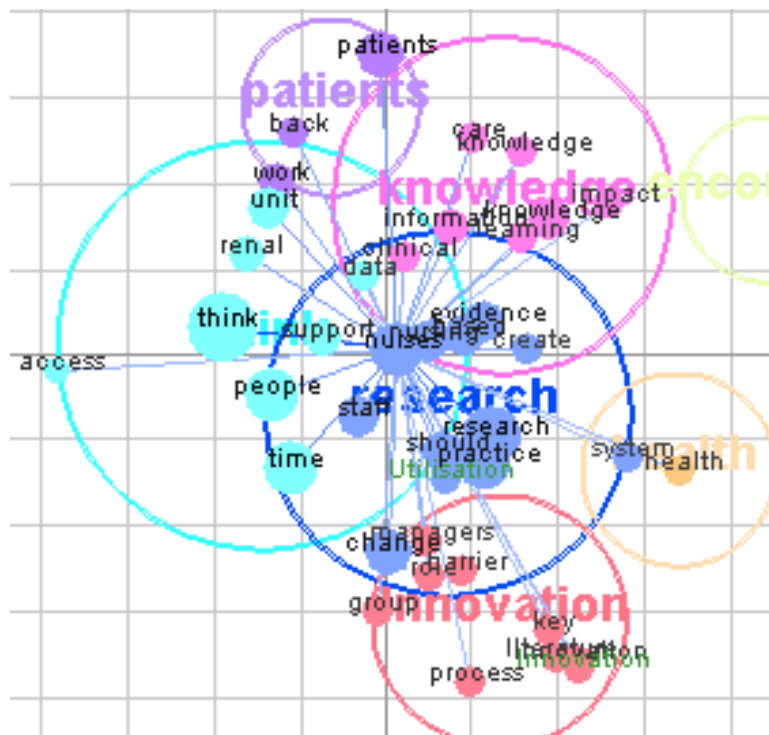


Figure 2: Concept map 2 Individual nursing concept

The majority of nurses participating in focus group discussions as indicated in Figure 2 viewed evidence-based practice (EBP) as a means of ensuring that the clinical care offered was of a high standard. As outlined by staff in focus group 1, ‘EBP is just reassuring the clinical care that I provide on a daily basis is in line with research and accurate information, it is a reassurance that what I am doing is the latest innovative accurate clinical care, it’s new, it’s not something that we would be doing 20 years ago’.

It was generally viewed that evidence would only be used if it was known to be effective in practice. There was a view that if everybody was using it then it should be more acceptable, rather than if just one person has recommended its use.

Nurses viewed EBP as referring to practice throughout Australia that set a high standard of care to the patient and justified why something was done in a particular way. Added to this opinion was a desire to deliver safe care to patients with the knowledge that there was quality research backing these decisions, leading to the best outcomes for patients. As discussed by focus group 2 staff, ‘These days our

standards need to be high with clinical care due to the risk management considerations posed on staff as well as the fact that patients are becoming better informed when it comes to their own care in this modern age’.

Stemming from the collation of all six focus group transcripts were the following key concepts which were linked to the nurses’ understanding of the importance of evidence-based practice and research utilisation.

Accreditation: Nurses in general believed that evidence-based practice and research were complementary to meeting accreditation standards. As per focus group 6, ‘accreditation refers to the approval of an organization by an official review board after having met specific standards; we usually achieve this through the application of quality improvement exercises, however very few are research based’.

Answerability: Nurses believed that within their scope of practice they were answerable for their own actions and due to this felt obliged to stay abreast of new evidence. As per focus group 3, one nurse expressed: ‘it is a matter of legal or ethical responsibility to maintain our nursing knowledge and skills’.

Benchmarking: A topic that arose during all focus group discussions was that of the importance placed on benchmarking. It was generally felt that this was the major channel through which new research outcomes were shared. As per focus group 4 a nurse advised, ‘Benchmarking to us is a tool that identifies best practices. It allows our renal units to compare their performance within the organization and with other external organizations’.

Certification: Emerging from focus group discussions was the need for new nurses entering the healthcare system to master a body of knowledge and acquire skills in a particular specialty. Stemming from focus group five a nurse said, ‘I feel for the new nurses as individuals licensed to practice as a professional as they need to meet certain predetermined standards and this bar keeps rising. With the growing body of new evidence that is out there, its purpose is to assure the public that an individual has mastered a body of knowledge and acquired skills in nursing has increasing pressures’.

Continuous Quality Improvement (CQI): It was very evident that nurses understood the connection between CQI and research utilization, however, they felt there was presently a poor connection between the two when assisting in raising standards of patient care. As per focus group 6, one nurse ascertained, ‘Research was a segment of quality management, and should be a systematic, organization-wide process to achieve ongoing improvement in the quality of services and operations and the elimination of waste, however, there is often a poor connection between quality and research’.

Criteria: A key concept also emerging out of nursing discussions was that of the lack of evidence-based criteria written into guiding principles for practice. Staff felt that predetermined elements, qualities, or characteristics used to measure the extent to which a standard is met were of a poor quality. As per focus group 3, one nurse states, ‘I see the utilisation of research findings as a building platform to ensuring we have appropriate patient outcomes measures in place’.

Disease management: A point of discussion by several nursing staff in the focus groups was the need to understand changes in disease management. New methods for managing renal failure were emerging in the literature and all felt it was important to maintain knowledge. As per focus group one, a nursing representative stated, ‘In the provision of complete patient care for certain diseases we need to maintain a standard and update our knowledge on new treatments for disease states’.

Incident reporting: Nurses in general believed it necessary to learn from clinical mistakes. They viewed the reporting of incidents as crucial to improving patient care. As a nurse from focus group three stated, ‘A written record of an event with possible or real untoward effects can be an excellent learning exercise for our knowledge and skill when giving patient care’.

Indicator: One common topic of discussion by all nurses was the use of set indicators to measure patient outcomes. They believed that these indicators helped to set a standard of care and maintain that standard, however, they viewed many of these indicators as out of date with current evidence. As stated in focus group four,

‘We tend to look at an aspect of health care process or outcome that signals whether or not the appropriate interventions were provided and generally these are a good guide, however, I now question if some are now relevant’.

Liability: In general, nurses felt the condition of legal risk due to the obligation of professional personnel obliged to provide reasonable care did have an effect on their individual desires to update their knowledge and skill. As per focus group two, ‘I would hate to be held liable for a patient incident if I had not maintained my knowledge and skill based on new emerging evidence’.

Malpractice: Closely related to the concept on liability was the fear of malpractice. Nurses referred to the fear of negligence, carelessness, or deviation from an accepted standard of practice by themselves as a driver to maintain current practice. However, as stated by a participant in focus group six, ‘We have fears of malpractice, however, I don’t believe the majority of us take this seriously enough’.

Monitoring: Many nurses felt that the monitoring of current standards of care were quite high, however, they did not have complete confidence in the guidelines they were monitoring. As stated per focus group five, ‘We tend to monitor our practices very closely, however, I must admit that I often question where these indicators have come from and doubt the data from observing and evaluating the degree to which a standard has been achieved’.

Performance standards: Noted by several nurses was the fact that research utilisation was never mentioned in performance appraisal. As per focus group four, ‘Specific written statements of nursing behaviours that further define what a nurse in a specific area of nursing should be doing don’t appear to include research, in fact my performance appraisal has never included this’.

Practice Guidelines: It was evident through focus group discussion that practice guidelines were chosen for the nurse, never by the nurse. Individuals did not appear to have any say on the standards set through practice guidelines. A member of staff in focus group one highlighted, ‘I just trust the guidelines the organisation puts forward, I have never argued against these’. Or as highlighted by a nurse in focus

group six, 'guidelines are developed for us, I never get involved, I just don't have time'.

Problems: A number of nurses expressed a desire to use evidence to address patient problems and often found it difficult to find information to guide decision making. The factors of time and access to information heavily featured related to this aspect. As stated by focus group three, 'Patient problems often arise where I would like some new evidence to guide my practice, but due to time and no access to computers I often settle on asking someone more senior for guidance'.

Quality: Many nurses discussed the degree to which patient care services increase the probability of desired patient outcomes and reduce the probability of undesired outcomes given the individual's current state of knowledge. They were of the opinion that there was a direct link between evidence-based practice and quality, however, they also believed the use of evidence by the quality department was quite poor. One nurse from focus group three says, 'I don't believe our quality department is very focused on best evidence, they appear to be only focused on accreditation'.

Quality Management: Discussions on quality in focus groups led to the topic of quality management. Many nurses believe the management of quality in the organization to be excellent, however, they also believed evidence-based practice was not core business and did not believe the quality unit to be actively involved in research. One nurse from focus group four states, 'I don't believe our quality unit do real research. They collect data and do exercises, but it is not rigorous, it is just not in their processes'.

Registration: Nursing registration was closely linked to the maintenance of high quality nursing standards, however, many nurses did not believe they were required to be actively involved in research to maintain registration. One nurse from focus group six states, 'I view the fact our registration doesn't require us to actively do research as a barrier, it just doesn't give us incentive'.

Risk Management: Nurses generally viewed risk management as an excellent tool for identifying gaps in clinical care and understanding where new evidence might be

utilized, however, they did not believe, as individuals, they were encouraged to look at research to address issues. Many were uncertain if the organisational strategies put forward to address these issues were based on new evidence. 'I see the organization put forward solutions to risks, but we never know where these came from, we are never shown the source', stated one nurse from focus group one.

Sentinel events: Leading on from risk management discussion was the concept of sentinel event reporting where unexpected occurrences involving death or serious physical or psychological injury, or the risk thereof, would occur with a patient. Many nurses believed it was only the serious problems labeled sentinel events where they did receive feedback on evidence to rectify the issue. One nurse from focus group two states, 'I know my organisation takes serious actions with sentinel events and I trust the solutions they put forward, as I know how much time is dedicated to it. We are never involved in the process of finding the solutions though'.

Standards: Nurses could not guarantee that agreed-upon levels of excellence or established norms within their clinical units were evidence-based. They could not state with confidence that standards of nursing practice or the written statements of the expectations of the care the nurse should give—process standards—come from the best available evidence. As per focus group one, a nurse states, 'I could not say for certain that the current guidelines we use for practice are evidence based'. The same was evident for standards of patient/client care or written statements of expectations of the care the patient should receive (or results of care received): outcome standards. As per focus group three, one nurse expresses, 'I know our patient care standards are excellent; in fact I am very confident, however, I don't believe I have the so-called evidence to back it up'. Stemming from the standards concept was also a term 'structure standards' or the written statements addressing the organization's culture (i.e., the mission, philosophy, goals, and policies). All nurses believed in these and had complete confidence that these philosophies were evidence-based. As per focus group five, 'I at least know that our organizational mission statement is well evidenced and believe whole heartedly in its intent'.

Time: Many of the nurses interviewed felt that time was a key factor as demonstrated by the comments of a nurse from focus group five, 'I really believe

time management skills can make or break a nurse; if we don't have our workloads organized then what is already busy will seem busier. If we can't find time, research adoption is never going to occur'. Or as another nurse from focus group four outlines, 'I think nursing is just getting busier, with our workloads growing as the nurse to patient ratio starts to widen. This is a real issue as we would like to do some of these activities as we really do enjoy them'.

Information overload: Several nurses suggested that the quantity of information being thrown at them was daunting. One nurse in focus group 1 stated, 'Yes and it can be overwhelming having to absorb a lot of information from different sources'. Further, another nurse from focus group 4 said, 'I just feel like there is too much information for me to handle', and one nurse from focus group five stated 'I think we are simply overloaded with too much information, we can't absorb it all'.

Table 5 below summarises the majors factors identified from the participatory cohort under the concept of the influence an individual nurse can have on research utilisation alone. The table is divided into both actual and potential inhibitors or facilitators, as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 5: Nurse factors

Identified factors of adoption for research utilisation by the individual nurse				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
Accreditation				Accreditation
			Answerability	
			Benchmarking	
Certification				Certification
Continuous				Continuous

Identified factors of adoption for research utilisation by the individual nurse				
Quality Improvement (CQI)				Quality Improvement (CQI)
Criteria				Criteria
		Disease Management		Disease Management
Incident Reporting				Incident Reporting
Indicator				Indicator
		Liability		Liability
		Malpractice		Malpractice
Monitoring				Monitoring
Performance Standards				Performance Standards
		Practice Guidelines		Practice Guidelines
		Problems		Problems
Quality				Quality
Quality management				Quality management
Registration				Registration
Risk Management				Risk Management
Sentinel Events				Sentinel Events
Standards				Standards
Information Overload			Information Overload	

4.1.2 Organisational concept

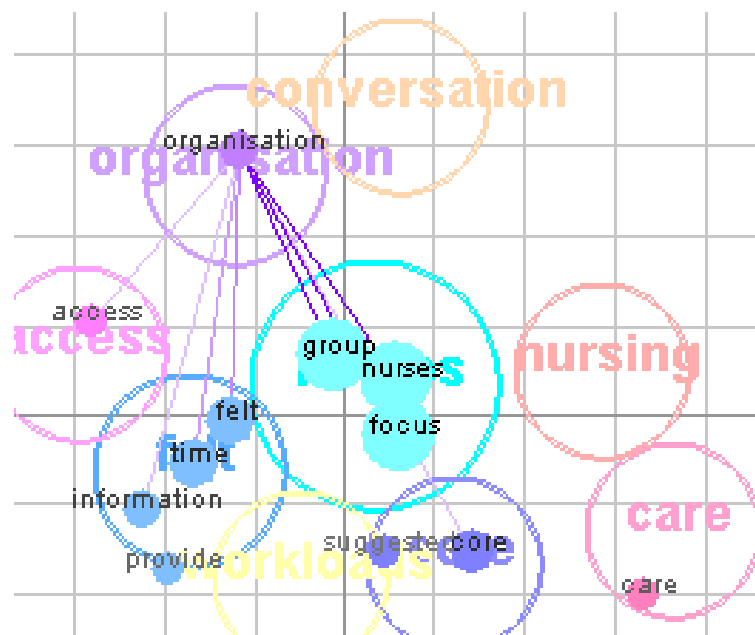


Figure 3: Concept map 3 Organisation concept

In discussion of a barriers scale, the characteristics of the organisation were also referred to as setting barriers and limitations. The eight items identified in focus group discussions in this category as can be identified in figure 3 range from lack of authority, time, cooperation from other staff, facilities for implementation and generalisation of finding to own setting. Several nurses revealed that the actual ‘setting’ poses the greatest barrier to the utilisation of research. From focus group six a nurse states, ‘I just don’t simply believe that our organisation is supportive of research full stop. I actually view current organisational practices as the biggest obstacle to change in practice’.

Lack of authority: Generally nurses felt they had a ‘lack of authority’, as stated by one nurse in focus group two: ‘administration will not allow implementation. The organisation is also aware that other staff are not supportive and that physicians will not cooperate’. In general, nurses felt there was a lack of support.

Lack of support: One common concept arising during focus group discussions was the lack of support for new ideas and a perception that the organisation tended to favour clusters of nurses. Many saw this as a future deterrent to becoming involved in research as they believed no matter how worthwhile a proposal, the organisation

would simply never support it. Hence, many had a 'why bother' attitude. As stated by a nurse in focus group five, 'I have given up on trying to do research or start some form of quality improvement, the organisation is just never supportive'. Hence, the absence of support was regarded as a top major issue by many nurses. However, many nurses were rather favourably disposed towards research, and several cited insufficient management support as an obstacle. Many also stated that this was not just an individual issue; it was also an organisational process that should be encouraged. As stated by a nurse in focus group four, 'I don't intend to focus on research, why should I?; the organisation never encourages it'. The level of support from other disciplines was also a topic of conversation, with most nurses feeling there was no support from the medical profession. In fact, many believed doctors to be a significant barrier. 'Even if we find high level evidence it is unlikely the MOs will support the change, they don't like being told how to do there job's', was a statement made by a nurse in focus group three.

Many nurses perceived limited autonomy in making judgments about aspects of clinical practice as a major barrier to utilising new evidence. As stated by a nurse in focus group six, 'Physicians are seen as major obstacles to implementation of research. We may have clear evidence that we should change practice, but if they don't want, they won't change it, it's that simple'.

Organisational attitudes: Organisational attitudes to research were a big point of discussion by many nurses. Many felt the levels of funding available to support research were non-existent. For example, a participant from focus group two stated, 'Research is simply not core business around here and I don't ever see our organisation funding any'. Also apparent were issues with levels of staffing. Most nurses agreed that they did not have the requisite staffing levels to cope with patient loads and research. In fact, many suggested that nurse-to-patient ratios were on the decline which was making any additional activity virtually impossible. One nurse makes this sentiment very clear in her response during focus group six, 'On one hand we are encouraged to ensure we operate by best practice and update our standards, on the other we are informally discouraged as the organisation takes away more resources and impedes any time we once may have had to devote to research utilisation'.

Study Time: Many nurses expressed they were entitled to study day allocations, however, these were never forthcoming, and additional workloads were eating into this free time for study. A participant in focus group six stated, ‘I am entitled to a study day once a month apparently, but I am yet to ever have one after three years. Patients demands come first and there are never any staff for backfill’. Many discussed the informal nature of in-service education in their areas which did introduce some new evidence into the workplace, but many felt they never completely absorbed this information. The organisation was not considered to support or drive this in-service but, rather, this was the domain of the staff themselves as they felt they needed some form of new knowledge flowing in. This is evident from a statement in focus group two: ‘We have ward in-service, only because our nursing staff drive it, nothing is offered by the organisation, not that I can see anyway’.

Resources: There was a good discussion about the availability of library facilities and all saw this as a great service and excellent resource, however, most felt that in order to access the library they would need to do this in their own time. Once again, many felt their organisation was not making time available for them to access the resource—as stated by a nurse in focus group one, ‘I would love to access the library if only I had time, and I can tell you now with 3 children a husband it won’t be in my own time’. IT facilities were also mentioned and most felt that access to computers within their environment was very poor. Many felt even if they had time they would not have access, as many other health professionals are trying to access computers at the same time.

Utilisation: Utilisation management, the process of integrating review and case management of services in a cooperative effort with other parties, including patients, employers, providers, and payers was a point of discussion. Many nursing had participated in such processes, but felt that research utilisation was not a part of these processes. Review management was discussed and appeared closely related to utilisation management. Nurses view this component as the formal assessment of the medical necessity, efficiency, and/or appropriateness of healthcare services and treatment plans on a prospective, concurrent, or retrospective basis. Many nurses

stated they knew the standards of review that they should aspire to, however, they believed as individuals it was difficult to meet these standards due to personal and organizational restrictions. As one nurse states in focus group six, 'I understand the need for formal review of our practice standards, and I understand the need for regular audit of this practice, I just can't see where as an individual nurse I can fit it into what is already a very demanding workload'.

Many nurses believed additional resources were required to deal with the lack of time and the workload pressures that restricted research utilisation. Many felt to assist the individual, a key person should be assigned to deal with research utilisation in their area of practice and perhaps an expert should be appointed within the organization. One nurse from focus group two states, 'If the organization wants to encourage individuals such as myself to operate in an evidenced based environment they need to give me the support to do so, I can't see how at present I would be able to fit it in'.

Research culture: Many nurses also made contributions in conversation on the concept of research culture or, in their opinions, what they perceived to be a lack of culture. There was an overwhelming feeling that investment was never made in research and that it was never a priority in strategic planning. It was also made very clear that at a clinical level, research was never viewed as core business. This was believed to transcend from the organization itself. Certainly, integral to discussions, was an emphasis that the first priority in healthcare was that of patient care. However, the irony to many of these nurses was the fact that this focus of patient care as the priority for core business left very little time or room for anything such as research. There was a general feeling expressed by many of the nurses that this was the most likely reason for the lack of attention research had received. As per focus group three, one nurse states, 'There is one clear reason to me why research is not core business and that is because patient care as a priority will always come first'.

Many participants felt a need to positively promote research within their clinical units, however, they saw no clear path on how to make this occur. Integral to these discussions was the need for methods of promoting a positive response to research, regular information release on research to increase awareness, the development of

methods for securing funding for projects and, flowing on from these initiatives, strategies that would assist with the release of staff to undertake evidence-based projects. As conveyed by one nurse in focus group five, ‘Somebody needs to come up with some solutions that will free our time and provide us with the funding, resources, and time to do these things; only then will we have the capacity to consider research in our core business’.

Historical influence: Many of the nurses were of the opinion that there was historical influence affecting the utilisation of research, i.e. what has been done before should never change. As one nurse said in focus group five, ‘Many nurses have a general belief that if something works and is not broken it should not change. They can’t see that there may be room for improvement or a need to update knowledge or skill’. There was also a perception that many of the older nursing leaders believed ‘if it was good for them it is good for us’. Hence, as one nurse in focus group two states, ‘They are still living in their day and time when they were on the wards, so they still advise us from what was right back then, not necessarily what may be right for now’.

Information overload: It is evident from the findings there was a lack of direction or control on what research innovations should be used. One nurse from focus group 6 explains, ‘I don’t believe the organisation is controlling the amount of information flow for new research, we feel bombarded’. Further, a nurse in focus group 3 outlines, ‘I think we receive too much information too quickly, there is just far too much to deal with’. In addition, staff in focus group 2 outline, ‘How are we supposed to make a choice with such large quantities of people offering us an opinion on what is right? I feel overloaded’; and ‘I need somebody that is a central person to run things, they can say that this is what we would like to do how about you help me do this and you help me do that. Everybody needs to be involved some way, if everybody has different tasks, and then you bring it all together, you discuss it then. Otherwise if you leave it to one person it becomes a huge job. And I think the problem with that is you’ve got to have the time to do it. Unless you’ve been given the time to do it, it won’t happen’.

IT resource and support: One prevailing topic of conversation was the organisations' support and investment in IT infrastructures. There was an overwhelming consensus by all nurses participating in focus group discussions that there were never enough desktop computers available. Furthermore, staff were expected to perform tasks on computers, yet they were unable to access these computers as they were always in use by another individual. Many felt that this contributed to the lack of ability to engage in evidence-based practice activities or research utilisation exercises. Participants believe that if they were to better guide their practice by updating their knowledge with new incoming evidence-based information, improved access to computers was essential. As one nurse in focus group one states, 'I can never obtain access to a computer when I need it, I would like to use any free time I have, which is rare mind you to look up new journal articles, but anytime I go to there is never a computer to do it with'. Or as one nurse in focus group three states, 'We simply don't have enough computers in our working environments to cater to every health professionals needs, essentially we nurses need our own computers that only we access when needed, and believe me we would use these a lot. I would even go as far as suggesting the organization considers hand held computers so that each individual has permanent access to the information they need'.

Increase in information support (library/IT): Also emerging from discussions on IT access was the concept of information support. Many participants believed the types of information and the way nurses were set up to access information via computer systems could be improved. Many nurses mentioned they felt current information pathways were poor and need to improve. Here, they were referring to the number of different paths they needed to take to find information. Many felt they were too complicated. As one nurse in focus group two affirmed, 'I don't believe the organization has invested enough time and energy into E-Health, I see this as the future to us accessing information and even learning. I would like them to make accessing information less complicated and to provide us with regular evidence based practice updates. I believe this should be done centrally and generically as we don't have the time, we will use the information if it is given to us in a simple user friendly manner'.

Inform and involve other disciplines in the project: An interesting topic of conversation by many nurses revolved around the theme of research activity communication or, rather, the lack of communication. It was felt by many that when an organizational research activity was undertaken staff in clinical areas were often the last to know, or found out after the completion of the research. They believed there was not enough engagement with core staff when research was in its conceptualization stage and, hence, if they ever wanted to be involved they were unable to do so. As a nurse in focus group one announced, ‘I would love to engage in research, it is a real interest of mine, and I would like to begin by becoming involved in somebody else’s research first to learn the ropes, but we are never advised of research activities in the district, so how are we to express an interest if we can’t?’

Assign key person: Many nurses felt that due to their busy workloads and lack of time that perhaps a position for research within their work areas needed to be created. They felt that there was enough justification for such a position, but felt it was important this incumbent person did not take on a clinical workload. It was suggested by many that such a position could deliver them up-to-date information sessions on the latest research findings and commence some valuable research with the clinical setting itself. It was also suggested that such a person could seek research funds to enable more of the nurses to have offline time to devote to research utilisation. As avowed by one nurse in focus group three, ‘We could really do with a position on our staffing roster that just deals with research and evidence based practice’. This concept discussion also lead many nurse to affirm they would benefit from regular, but short information sessions at handover times from a key person.

Plans for releasing staff from duty: As detailed above, many nurses believed in order to actively participate in research utilisation the organization needed to invest in offline time for staff. They all believed they required at least one day a month to just sit and do research, whether that was in the form of reading, data collection, grant writing, or the generation of new evidence. As one nurse in focus group six states, ‘If we are to increase the amount of time we devote to research utilisation then the

organization needs to support us by funding offline time. They need to release us and backfill our roles, otherwise it will never happen’.

Attitudes to research at end of project: One fascinating concept generated by the group was the lack of support that research findings would receive at the completion of a successful project. Staff believed that several projects completed in the past for the organization that generated solid evidence to suggest change of practice were not adopted by the senior members of the organization as the changes were viewed as being too costly. Many staff believed that members of the senior management were barriers to research utilisation as they simply could not see past the dollar figures associated with implementation—even though there was clear evidence from research findings that changes were beneficial to patient care. As one nurse highlights in focus group one, ‘One recent research finding generating within our own district generated great staff support and significant advances in patient safety, however we were prohibited from adopting this new evidence as a certain member of our executive outlined that the district simply could not afford to make these changes and that it would not be happening. What sort of message does that send to us?; do the research but don’t expect your findings if positive to the organization to be adopted? I think that that is a big deterrent to many nurses, and they won’t want to be involved if that is the organizations attitude at the end of the research’.

Table 6 below summarises the majors factors identified from the participatory cohort under the concept of the influence an organisation can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer analysis. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 6: Organisational factors

Identified factors of adoption for research utilisation by the Organization				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
Lack of authority				Authority
Lack of support				Support
Organisational attitudes:				Positive research attitude
Study time				Study time
Resources				Resources
Research culture				Changing research culture
Historical influence				Change management
Information Overload				Information Overload
It resource and support				It resource and support
Information support				Increase in information support
Lack of communication				Research activity communication
No key person				Assign key person
No Staff release				Staff release
Attitudes to completed research				Attitudes to completed research

4.1.3 Social concept

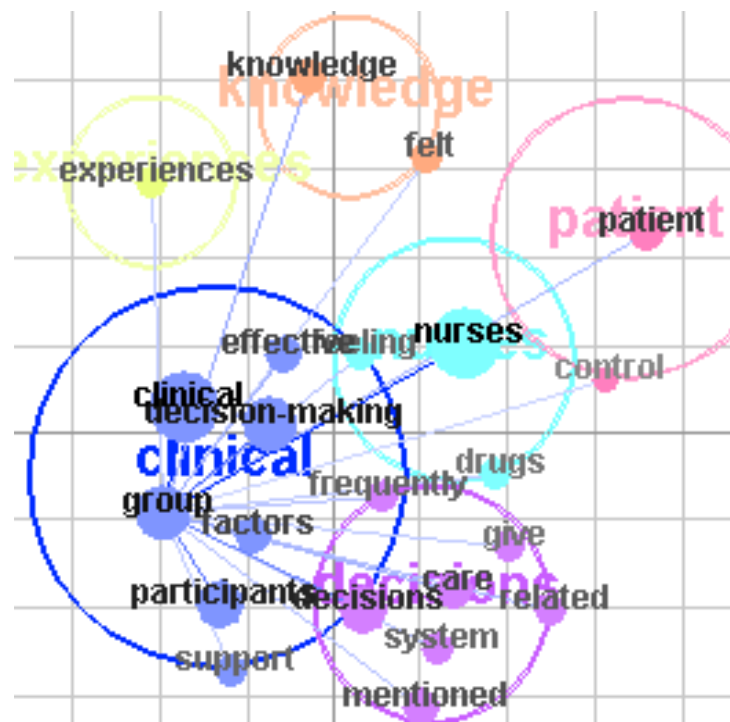


Figure 4: Concept map 4 Social concept

Feeling competent: The importance of feeling competent in the clinical setting was identified by a majority of the participants in discussing the most important factors influencing their clinical decision-making. Many defined competence as having a good level of knowledge, skills and experiences—as well as the ability to use them properly. The participants believed that these were the qualities that a nurse required to be a competent clinical decision-maker. The following statement by a nurse from focus group six clarifies this definition: ‘A competent and powerful nurse is the one who has rich knowledge and skill, and is expert in his/her own job’. One of the supervisors in focus group two also stated: ‘It depends on the level of one's professional knowledge and experiences, and the ability to use them well’.

Participants frequently emphasized the ‘proper use’ of knowledge and explained that effective clinical decision-making depends on one's capability to gather, understand, and integrate the data with a focus on patients' needs and identifying the clinical situation. One nurse from focus group three described an experience in which she had made a decision which could rescue the patient: ‘Once when I was working in a neurological surgery unit, a discopathic patient was brought from the operating

room, one of his primary signs was leg pain. When he was brought in, I noticed the patient's frequent complaining of leg pain. I went to his bedside and removed the blanket. Previously, he had complained of pain in the right leg but now, he was complaining of the pain in the left leg. I felt the left leg's temperature was lower than the right one. His pulse was slow. I immediately called the doctor concerned and also called and arranged for the operating room. The patient was taken to the operating room and an embolectomy was done. The doctor said that any delay in the operation would have led to the loss of the intact leg. Anyway, if my knowledge had been poor, something would have happened. It was at that time that I felt my proper knowledge and on time decision could save the patient'. Her professional knowledge, past experiences and her close relationship with the patient helped her to reach a comprehensive understanding of the clinical picture to make an effective decision.

Being self-confident: A large majority of participants emphasized the role of self-confidence in effective clinical decision-making. To them, self-confidence in nursing was one's belief in their own capabilities and that of their colleagues. They have also pointed out different factors that affect the self-confidence of nurses. As stated by a nurse in focus group six, 'I believe that self-confidence provides the nurse with the feeling of control and ability to influence the situations and increases the possibility of making independent decisions'. But many felt lacking self-confidence would result in self-doubt, causing the nurse to feel weak and powerless, so that he\she avoids participating in the decisions. Many felt that in their own clinical setting they had witnessed this several times in others and in themselves.

There were three main subcategories related to self-confidence. These were 'self-reliance', 'self-efficacy' and 'self-assertiveness'. Respondents indicated that these are the consequences of self-confidence. One nurse in focus group two commented: 'A self-confident nurse can assert oneself and this is the way one can show one's capabilities and implement his decisions in patient care'. According to the participants, nurses' self-confidence—along with their clinical competence—brings them a sense of 'efficacy' which, in turn, makes them become 'initiators to help the patients' and accelerates their timeliness in making and implementing decisions. This is evident in the following quote in which a nurse from focus group four has

described his experience of a case of cardiopulmonary resuscitation (CPR): 'I was alone on the medical floor when a case of cardiopulmonary arrest occurred. I called the code, prepared the CPR trolley, began CPR and inserted an endotracheal tube before the doctors arrived. Fortunately the patient rescued. I was certain of my own knowledge and ability, but many nurses wait for doctors, because they lack self-confidence'.

According to participants, self-confidence is rooted in one's personal characteristics, but is impacted by the level of knowledge, social and work-related interactions. Many nurses were adamant that new research evidence or its availability gave them confidence within themselves, however, many felt that their current nursing culture gave them little confidence in the information they were using to guide clinical practice as they were uncertain of the level of evidence that was driving that procedure or task. As one nurse in focus group one states, 'I must admit I lack confidence in the information the organization provides as guiding procedures because I have real doubts about where the evidence was derived'.

Many of the focus group participants complained of the 'lack of self-confidence in nurses'. They implied that factors such as 'inappropriate methods of education' and 'social and organizational culture' resulted in 'frequent cross-questioning and under-questioning of the scientific and technical competence of nurses which, in turn, negatively affected their self-confidence. Finally, they believed that they were less competent but are, as one nurse said, only the executive agents for carrying out the doctors' orders. One nurse in focus group 5 states, 'I lack confidence in other nurses, particularly new nurses as I know the information we are currently using to guide practice lacks substance, and I fear they will be lead astray. I know I make decisions based on my experience rather than what is in the text book, but they lack this experience'.

Organizational structure: The structure and culture of the healthcare system was mentioned by many participants as another important factor affecting nurses' participation in clinical decision-making. Structure was defined as the rules and regulations which determine the limits of authority. Also, many of the nurses viewed nursing culture as an environment that emphasizes tasks and physician-centeredness.

Nurses considered ‘authority’ as a pre-requisite in clinical decision-making and also as a critical factor in providing timely and quality care. One nurse from focus group six said: ‘I mean that I should have the authority and permission to do my job, to be able to do what I can do in my territory, and I must have the right to do nursing care based on my diagnosis’. The majority of the nurses believed that organizational related variables such as job description and official rules limited their scope of practice. On the other hand, the condition of the patients and the practice environment was a discussion point and affected the ability of nurses to use their authority. As one nurse in focus group four states, ‘I feel like the patient acuity and workload is inhibiting my ability to make decisions and improve my practice’.

Many nurses mentioned that factors such as unbalanced nurse-patient ratios, heavy workloads, and an increase in non-nursing duties have decreased their relationship with patients and made them adopt a task-oriented working system that spontaneously acted as a barrier to their effective participation in patient-related decisions. Also, the participants frequently referred to a physician-centered atmosphere in the healthcare system that disregards nurses' decisions. One of the supervisors from focus group one stated: ‘Now, it is expected that nurses only obey the orders, give the drugs, do the injections, monitor the blood pressures and write the nursing notes, but not to intervene independently. She/he is expected to obey as a lamb’.

Being supported: For the participants, support was mainly characterized as supportive management. Their experiences on support were categorized under the three subheadings of: ‘provision of financial welfare’, ‘provision of care facilities’, and ‘provision of emotional support’. ‘Being supported’ was considered as a necessity for the development of clinical decision-making skills. However, a feeling of ‘being unsupported’ was ruling over the nurses. Thirty-five nurses pointed out the lack of support to nurses. Although colleagues are a useful source of support in the clinical environment, participants in this research considered unsupportive managers as barriers to effective clinical decision-making. One of the supervisors from focus group 5 said: ‘I have felt frustrated many times, when I have made decisions and have needed to be supported by the higher managers, but they didn't support me’.

The participants mentioned 'insufficient salary of nurses' frequently. They believed that 'the managers are responsible for provision of financial welfare for the nurses' and referred to the nurses' 'unfulfilled financial needs' as an evident symbol of lack of support. This resulted, as one of the nurse educators said, in nurses not being able to concentrate on their patients' problems and make effective decisions.

According to the participants, managers have responsibility for the 'provision of care facilities' (such as sheets, injection and dressing equipments, wheelchairs), but they do not do this properly. Shortages in the nursing workforce and lack of care facilities were emphasized as barriers to clinical decision-making. These barriers caused nurses to feel unable to meet their clients' needs, and giving them the feeling of an inability to have control over their work. As agreed by nurses in focus group 4: 'When we have only two nurses for 37 patients, certainly they cannot provide a good care. They can only monitor the blood pressure and give the drugs'; 'There is so much work, sometimes the patient is discharging and I don't know his\her name and history. I only have done routine for him\her'; 'We are running throughout the shift, but always something sounds me that things are left undone'.

Several participants from focus group 2 mentioned that inter-personal conflicts and lack of emotional and legal support (such as malpractice coverage) also act as barriers to clinical decision-making in nursing. They mentioned frequently that doctors do not value nurses' decisions and the managers also do not support them when a conflict occurs. The following statements contain clues to the unsupportive behaviour of some of the nurse managers: 'There is no one listening to our tale of sufferings; those who are in charge of us never support us'; 'If something goes wrong in the hospital, the senior nurse manager supports others rather than the nurses'. These experiences taught nurses that any disagreement must be avoided. Therefore, they are reluctant to assume responsibility and this reluctance creates a barrier to effective clinical decision-making.

Nursing education: Participants emphasized the critical role of nursing education in the development of decision-making skills of nurses. They believed that the mode, type and levels of participation of nurses in clinical decisions depend on their education. Also, one of the participants from focus group two stated, 'Their

educators have an important role in their modes of decision making'. The majority of participants implied that the nursing educational system did not do its work well. One senior nurse manager from focus group six commented: 'Our academic education doesn't prepare its students to be effective clinical decision-makers'. One nurse from focus group three with seven years of clinical experience said: 'I don't remember anybody teaching me that I have the authority to make an independent decision and implement it based on my own judgment'.

The content of the curriculum was mentioned as a barrier for nurses in the way of clinical decision-making and many related this to research utilization. As one head nurse from focus group four stated: 'Apparently the nurse educators think the best nurses are the nurses who have more medical information. They give them an extensive range of disease-related, pharmacological and physiological information, but don't spend even 10 minutes on the nursing care in a class of two hours, so, if you ask one of our nurses to write a standard nursing diagnosis, she/he cannot. They cannot differentiate between medical and nursing diagnosis. Therefore, they don't know their domain of activity'. Another head nurse from focus group one also considered the methods of education as barrier and said: 'The nurses have learned the text books in their classes but they had little or no opportunity to apply them in practice, I think this is why even if we read about new evidence or appealing research it remains difficult to take the next step and do something proactive with it'.

In addition to the fact that the curriculum is mostly theoretical and inapplicable, role models also played a significant role in the weakness and reluctance of nurses to assume responsibility and making independent clinical decisions based on new research. One of the experienced nurse educators from focus group three believed 'that due to inexperience and freshness of most of the nurse educators, they lacked self confidence and could not educate a good new nursing generation, and this includes research knowledge'.

Staff nurses and their routine-oriented actions also act as role models for nursing students. One senior nurse manager from focus group five, who also was an educator in a nursing school, perceived them as barriers in the way of clinical

education and the development of students' decision-making skills. He said: 'Our academic education is held well but when the students enter the practice environment, they are faced with some particular organizational behaviors that are task oriented and inhibit independent decision-making, particularly related to new research evidence'. In fact, they have considerable amount of knowledge but cannot apply them to practice, therefore, as a nurse manager from focus group four said, 'They are limited to giving the drugs and doing the doctors' orders'.

Table 7 below summarises the majors factors identified from the participatory cohort under the concept of the influence social concept can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 7: Social factors

Identified factors of adoption for research utilisation associated with social concept				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
	Feeling competent			Feeling competent
	Being Self Confident			Being Self Confident
	Self Reliance			Self Reliance
	Self efficacy			Self efficacy
Organization structure				Organization structure
	Being supported			Being Supported
	Nursing education			Nursing education

4.1.4 Innovation concept

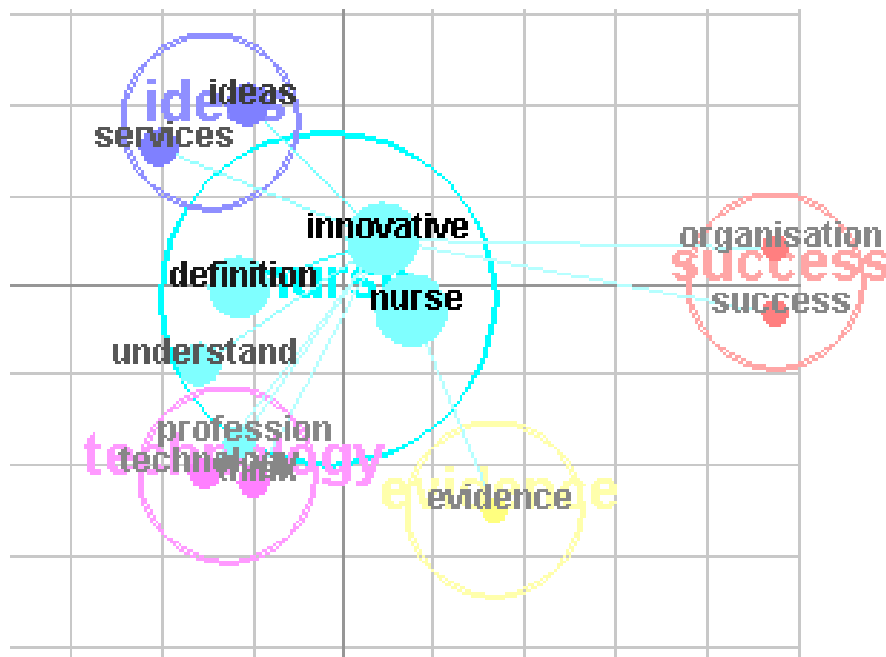


Figure 5: Concept map 5 Innovation concept

During focus group discussions, what constitutes innovation in nursing raised a number of issues of particular importance in relation to nursing care and the delivery of nursing services.

Beneficial: One nurse from focus group six indicates, ‘There is no doubt innovation promises to enhance nursing practice’. She goes on with her discussion and indicates that ‘non-traditional approach have never been the norm for implementing strategies, however as nursing modernizes I do see that non-tradition evidence based practice approaches are entering our systems for the better’. These thoughts are further supported by a senior nurse from focus group one who says, ‘It is clear to me that innovation in healthcare will be beneficial and I believe we need to embrace it’. Further to this a nurse in focus group four states, ‘I think I understand innovation, new concepts etc, technology, and new research being conducted or circulated. I think it has and is all going to be beneficial to the nursing profession’.

Definition: ‘What were not clear to me is what constitutes innovation in nursing services, how it is recognized, and why it is important in nursing service’, states one nurse from focus group six. It was apparent from discussions that nurses confused

innovation with the notion of change. As one nurse states from focus group one, 'We are very innovative in our ward as we are always making changes'. A nurse from focus group four asserts, 'Innovation leads to change but not all change leads to innovation in my opinion, to me innovation is not a variation of something old and therefore not all change is innovative'. Further to this, a nurse from focus group six says, 'It is important to understand how innovation does or does not occur within our complex health care system as well as why it may or may not be accepted by stakeholders'.

Confidence: Aligning to this theme was a nurse from focus group two who asserts, 'I am not sure however in order to assume whether there are risks involved with innovation, those involved with change must have confidence that the organisation will reward success and tolerate failure. I would lean to towards no'.

Appreciation: A nurse from focus group five outlines, 'It is important to appreciate the issues and challenges in designing, developing and delivering innovative ideas that we do have in nursing'.

Table 8 below summarises the major factors identified from the participatory cohort under the concept of the influence innovation alone can have on research utilisation. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 8: Innovation factors

Identified factors of adoption for research utilisation associated with Innovation concept				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
		Beneficial		Beneficial
Definition				Definition
Confidence				Confidence
	Appreciation			Appreciation

4.1.5 Patient/consumer concept

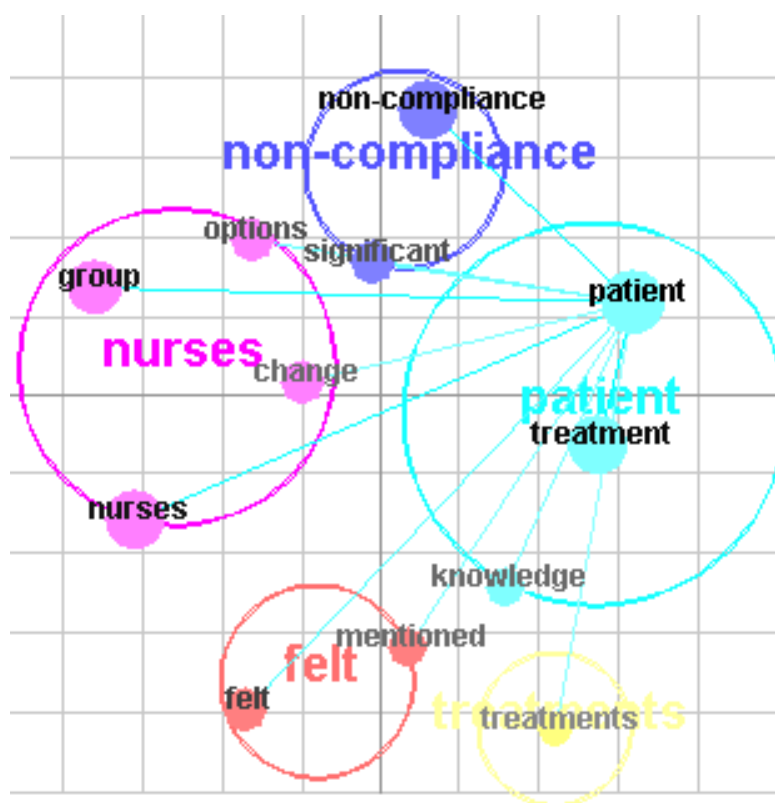


Figure 6: Concept map 6 Patient consumer concept

Knowledge: The topic of patient knowledge was mentioned by many nurses as an influence impacting both positively and negatively towards research utilisation. Many felt patients are better prepared in modern healthcare when it comes to their own healthcare treatments. All nurses from all focus groups mentioned the internet as a medium for patients to search their own diseases and disorders. Thus, some nurses felt this could be a barrier at times as they would only want to try what they

had read online and were not open to new treatment modalities that clinicians have presented as options. As one senior nurse stated in focus group one, 'I have witnessed a significant change in my 30 years of working in healthcare, patients are asking more questions, they are growing in self confidence and are more knowledgeable on their own condition than they use to be. Relatives are the same, they also can impact on patient's decisions. Not a day goes by where I don't hear a patient or relative say 'I was reading about this yesterday on the internet'. As one nurse in focus group three pointed out, 'Often now our patients come in with preconceived ideas on what treatments they will receive as they have read all about it, in some ways this is very good because they are well informed and we can get on with treatments, but in other ways it can make changing treatments difficult at times'.

Non-compliance: A focus of discussion during several of the focus groups was non-compliance with treatment. Many nurses felt it was difficult to impossible to make evidence-based changes to patient treatment if the patient was not committed for the long haul. Any form of non-compliance was viewed as making a significant variance to a treatment pathway. As one nurse in focus group four stated, 'I get frustrated when we do try something new and want to monitor the outcomes, but the patients' non-compliance to treatment makes it difficult to see if new treatment plans have had an impact. I would see patient non-compliance as a major barrier to using new evidence'. A nurse from focus group two adds to this concept with the following statement: 'It only takes one or two non-compliant patients sometimes to affect the data we do collect for quality assurance measures in a negative way. I have seen new studies abandoned because of patient non-compliance'.

Family: Several nurses discussed the concept of the family interfering or influencing patient decisions for treatment modalities. They felt particularly where the patient was of a younger generation there was more likely to be some sort of interference stemming from family members, particularly parents. As per the results for patient knowledge, many nurses felt relatives are also better prepared in modern healthcare when it comes to healthcare treatments. All nurses from all focus groups mentioned the internet as a medium for relatives to search diseases and disorders. Therefore, some nurses felt this could be a barrier at times as they would only want their loved

one to try what they had read online and were not open to new treatment modalities that clinicians presented as options. As one nurse from focus group five expressed, 'I understand why relatives want to be involved in their loved ones treatment decisions and I agree they should, many times they have made the difference in convincing the patient to continue, but on occasions it can be obstructive and prevent us from implementing treatment successfully'. Another nurse from focus group six has stated, 'I would never prevent a family member from having an opinion, but I do occasionally see a need for intervention if the family member is preventing the best treatment option from occurring'.

Condition: A clear concept generated from the focus group discussions was the impact patient condition can have on making evidenced-based changes to treatment. Many felt that secondary conditions or co-morbidities were the biggest barriers. Examples given were allergies, heart conditions, lung conditions such as asthma or the fact the person was end stage and close to palliation. One nurse from focus group three believed 'the patient condition does often dictate what new treatment options we can introduce'. Another from focus group five explained, 'Where we have stabilized a patient after months of difficult treatment we are unlikely to try something new in fear complications may arise because of the change. We also don't want to create unnecessary anxiety with these types of patients as we need to have them calm and stress free'.

Table 9 below summarises the majors factors identified from the participatory cohort under the concept of the influence the patient can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 9: Patient factors

Identified factors of adoption for research utilisation associated with Patient/ Consumer concept				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
Knowledge				Knowledge
Non-compliance				Compliance
Family			Family	
Condition				Condition

4.1.6 Economic concept

ptions = 1000

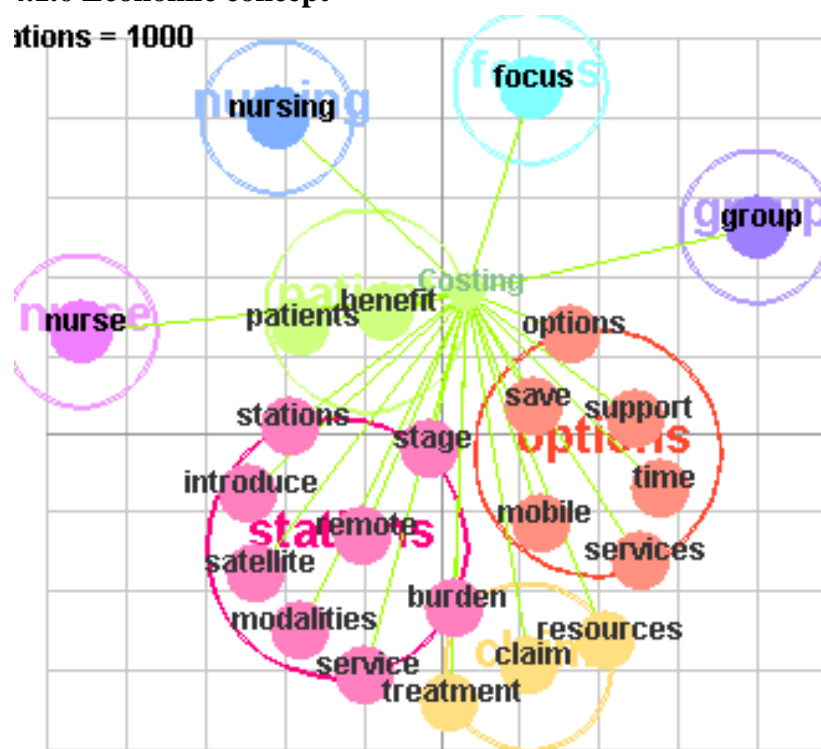


Figure 7: Concept map 7 Economic concept

Although there was only a smaller amount of data on economic issues related to research utilisation a few nurses still had some points to make. From these discussions, findings hinged around the following areas:

Forecasting the need for nursing personnel: One senior nurse from focus group one suggested, ‘the tools for predicting the need for nursing numbers require further development and should incorporate more of the multitude of intricate factors that impact on nursing and the demands for care’.

Evaluating the effectiveness of nursing care: A nurse from focus group two felt that evidence-based practice had a place in assessing the financial impact of nursing care strategies. She states, ‘I believe we should be looking more closely at whether cost effectiveness and patient outcomes are complimentary, what I mean is do we always opt for the cheaper stock item or in the long run would the more expensive item be more cost effective’.

Costing nursing services: One discussion point by a nurse in focus group one was the need to consider the cost of mobile treatment modalities, such as remote satellite treatment options for patients. It was felt these would save time and resources, although there was currently no evidence to support this claim. She states, ‘We often introduce new nursing service however at no stage have we or are we likely to consider the financial benefit and burden, such as our remote mobile treatment stations we now have for patients’. From another view point a nurse in focus group six outlines, ‘We have very little political influence that I can see and financially we are usually well stocked with resources, so I would say we can’t be sure that it does affect anything’.

Table 10 below summarises the majors factors identified from the participatory cohort under the concept of the influence economic issues can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 10: Economic factors

Identified factors of adoption for research utilisation associated with Economic concept				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
Forecasting the need nursing personnel				Forecasting the need nursing personnel
	Evaluating the effectiveness of nursing care			Evaluating the effectiveness of nursing care
Costing Nursing services				Costing Nursing services

4.1.7 Communication concept

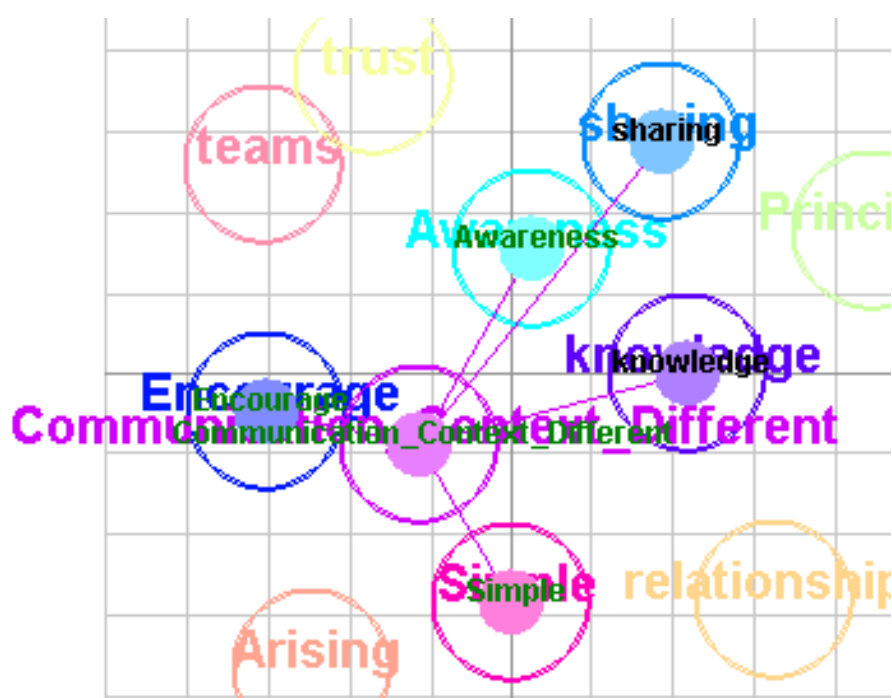


Figure 8: Concept map 8 Communication concept

Different communication channels were described at different times by the nurses participating in focus group discussions for diffusing different kinds of knowledge. Three main types of concepts for knowledge about innovations were apparent:

Awareness knowledge: that the innovation exists; many nurses felt that this was a common form of learning about new research. As one nurse from focus group five stated, 'I usually become aware of new research publications because I know there is something happening in that area'. This was supported by a senior nurse from focus group 2 who outlined, 'When you work in a specialty field such as ours you tend know what is going on around you in the research world and await published outcomes'.

How-to knowledge: the user's individual or subjective evaluation knowledge that comes from evaluating how they incorporated it into practice; nurses in discussions felt that sometimes they would consolidate the absorption of new evidenced-based practice knowledge only when others were implementing a new nursing process or strategy. A nurse from focus group one highlights this point by advising, 'I truly only learn about new evidence when it is shown to me by others nurses who are undertaking new activities, I am a visual learner'. This was further supported by a nurse in focus group six who testifies, 'We truly only become aware of new evidence in our workplace when somebody makes an effort and implements a new activity'.

Principles knowledge: functioning principles underlying how it works. One of the things mentioned by nurses was the establishment of sets of principles or, as many stated, guidelines to help guide behaviours to improve knowledge sharing—simple statements like 'these make explicit the types of nursing behaviours that the organisation desires' as stated by a nurse in focus group 2. The following list gives an idea of the types of principle knowledge concepts that were discussed by participating nurses:

Encourage questions: A nurse from focus group three said, 'I believe in nursing we should be encouraged to ask more questions related to our practice'.

Go to the source: A nurse from focus group six outlines that she will normally try and go to the original source of information to ensure the key message has remained correct. She outlines, 'I often find a key message which has passed between more than one person can be communicated inappropriately, so I usually track down the origin of the message to confirm'.

Share: A nurse from focus group five stated, 'We should all share what we know and help others to learn, many nurses don't recognise this as a core principle to research utilisation communication'. One nurse from focus group four found, 'Our unit is always sharing information internally and externally, however I do find that often information is not shared between different clinical settings within our own hospital'.

Relationships: One nurse from focus group four valued relationships and called for an understanding between all divisions and an investment in the development of these relationships. She states, 'If we are to move forward as an evidence based profession then our relationships with one another is fundamental, not just within our own ward, but with other wards. I think our organisation should nurture this'.

Knowledge building: Arising from one nurse was the concept of building on what has been done rather than creating something from the ground up. The nurse states, 'Managers should ask, have we done this before when approached with ideas and issues'.

Collaborate: 'One thing I think our clinical area does well is linking up with people outside our area to see if they are doing something our area can use', announced a nurse from focus group six. Within this organisation it did appear commonplace for nurses to form teams to collaborate on projects/tasks. A senior nurse from focus group six stated, 'We do a lot of benchmarking and in fact work with other hospitals in our region to tackle generic issues'.

Approachability: A senior nurse from focus group four outlined, 'Approachability and accessibility have major impacts on knowledge sharing and communication where we work. All staff, especially senior managers, need to be approachable and ensure all staff have the context they need to be successful in their roles'.

Learn: One nurse from focus group two proclaimed: 'We need to learn before, learn during and learn after. Take time to reflect on what's happened and discuss this with our colleagues. We need to learn from experience and actively search for others' ideas, and be willing to discuss failures and be open to feedback'.

Team: The concept of promotion cooperation and trust within a team arose when a nurse from focus group five outlined, ‘We should participate openly and actively in team projects, task forces and networks; uphold the team's ideas and proposals. We can bring credit on ourselves by acknowledging the contribution of others’.

Table 11 below summarises the majors factors identified from the participatory cohort under the concept of the influence communication can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 11: Communication factors

Identified factors of adoption for research utilisation associated with Communication concept				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
	Awareness Knowledge			Awareness Knowledge
		How to Knowledge		How to Knowledge
Principles Knowledge				Principles Knowledge
		Encourage Questions		Encourage Questions
		Go to Source		Go to Source
	Share		Share	
	Relationships		Relationships	
		Knowledge Building		Knowledge Building
			Collaborate	
	Approachability			Approachability
	Team		Team	
		Learn		Learn

4.1.8 Research utilisation

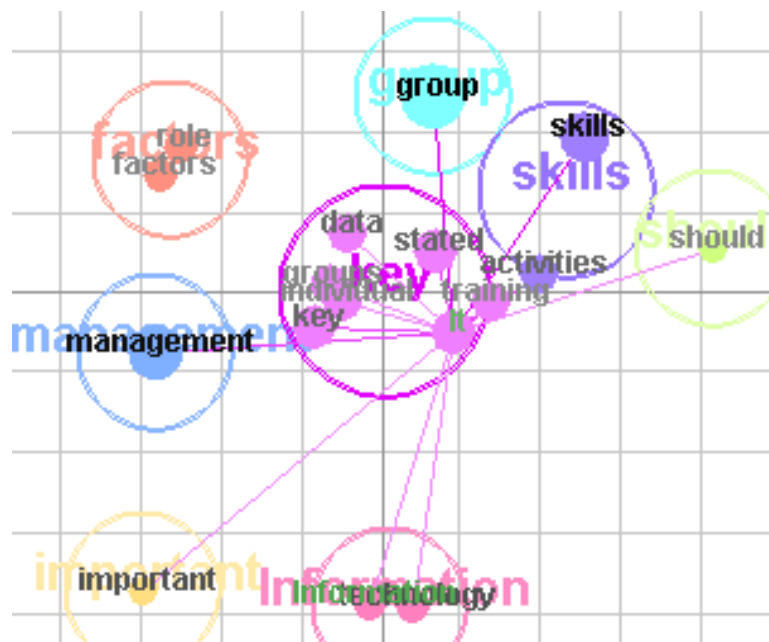


Figure 9: Concept map 9 Research utilisation

In focus group discussions, participants were asked to focus on two areas, triggers for research use and the knowledge and skills required supporting research use. These questions resulted in lengthy discussions and yielded a great deal of data.

Risk Management: Individual triggers commonly related to practice problems such as patient incidents or major medical errors, which nurses referred to as sentinel events.

From focus group three, one nurse states, ‘When we have a large clinical situation or a patient incident particularly a sentinel event we have a mad rush to access the latest research for guidance’. In the group discussions, patient care became one of the main themes where new practice and variations in practice, together with poor outcomes, led to research use. There were many references to activities that involved people being quite proactive about using research, such as seeking or sharing information or evidence. A small number of triggers identified implied that nurses felt using research was something they would do when there were no other options, rather than a routine practice. As one nurse in focus group three states, ‘I only ever see us truly look for research evidence when the proverbial has hit the fan, so to speak’. Supporting this notion was a nurse in focus group six: ‘I only see the

organisation seek and implement changes based on new evidence when risk management considerations advise them that without the factors of consequence may be severe'. The role the organisation plays in triggering research use was very evident from the individual and group data. The culture of the organisation, its ability to empower staff and commitment to change right through the organisation were key issues for all the groups. Clinical governance and risk management definitely played a role as triggers. 'Only in recent times have I seen such an influx in a desperate desire for the organisation to ensure policy and procedure are up to date, and the intent to do it is there, however, factors of time and workload still inhibit this from occurring the way the organisation would like,' stated a nurse from focus group six.

Leadership/change management skills: The discussion around the kind of knowledge and skills nurses require to enable them to use research in practice was grouped under three key headings. These were leadership and management skills, research skills and Information Technology (IT) skills. Leadership and management skills came across as important, particularly the qualities of a leader, which perhaps acknowledges the complexities of using research and changing practice. Under the heading of research skills, the ability of all nurses to be able to critically appraise was described by a nurse in focus group two as 'being the best way of creating understanding of, and enabling nurses to utilise, research'. A range of other skills were identified that related more to conducting research, but did include dissemination skills. A nurse from focus group five exclaimed, 'If nurses are to become savvy with research we need to do more of it, we need to utilise the change management skills that [we] have [and] we are known so well for and lead by example'. Further to this, a nurse from focus group three advised, 'In today's nursing society we are being asked more and more to be nursing leaders, I think doing research and utilising research is part of this'.

Information technology: Knowledge of IT and skills training to help nurses search for information was the third key area identified by all the groups. It is difficult to draw any conclusions from the data about who needed the skills identified, although it had previously been stated that all nurses need critical appraisal skills. Some of the individual statements presented suggest the need for smaller groups of individuals

who would/could be selected to undertake other more specific activities, although what these might be was not clear. ‘I see a need for IT specialising in nursing so that some of us are able to find the correct evidence. So much of this information is now in electronic form and you need to be skilled in order to find it’, stated a nurse from focus group four. Adding to this concept was a nurse in focus group two who said, ‘IT training should be offered to all nurses and there should be a wide investment in technologies that bring the information to us and minimise the amount of time taken to find research to utilise’. Further to this a nurse from focus group six adds, ‘Knowledge and skills could be maintained by providing nurses with the opportunities to use them and maybe making this part of performance appraisal’.

Table 12 below summarises the majors factors identified from the participatory cohort under the concept of the influence research practices or processes can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 12: Research utilisation process factors

Identified factors of adoption for research utilisation associated with Research Utilisation Process				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
		Risk management		Risk Management
		Leadership		Leadership
		Management		Management
		Information Technology		Information Technology

4.1.9 Multicultural concept

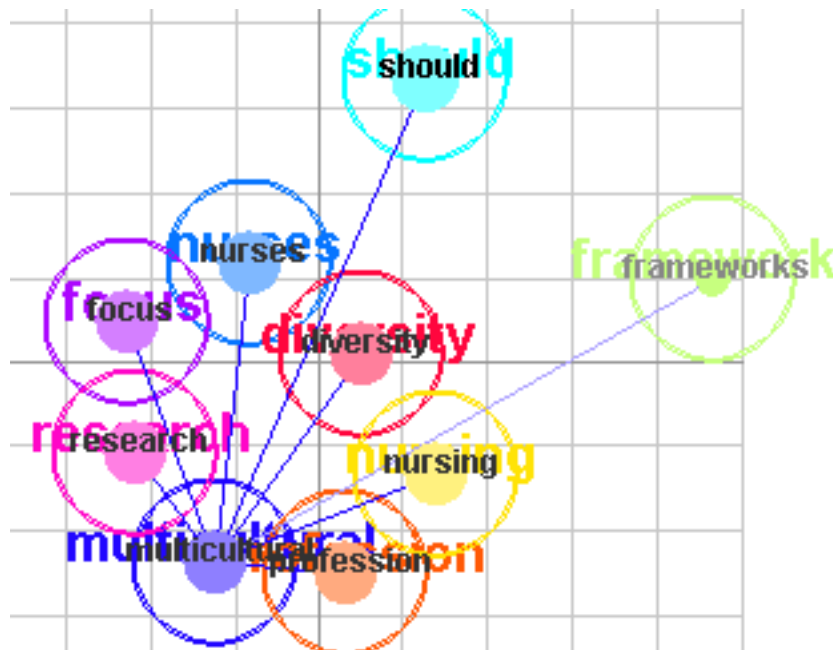


Figure 10: Concept map 10, Multicultural context

Cultural diversity: Based on focus group discussions, an emerging theme with multiple concepts was multicultural factors and their effects on research utilisation. Many nurses felt that the profession of nursing has built a social infrastructure of institutions, traditions and processes on a democratic foundation. Many felt cultural diversity is one of the great social, cultural and economic resources within nursing. One senior nurse in focus group five stated, ‘Unity in this diversity is based on such moral values as respect for difference, tolerance and a common commitment to freedom, and an overriding commitment to the nursing professions interests’. It was viewed by several nurses that for multicultural nursing to continue to flourish for the good of the profession, multicultural considerations for policies and programs should be integral to research utilisation frameworks. As one nurse in focus group one pointed out, ‘In today’s nursing world our multicultural diversity means our information dissemination practices need to be more flexible, because with diversity comes different learning styles and preferences. What may be understood and adopted well by those nurses, who trained here, may not be as well understood by some of our overseas trained professionals’. This line of thinking was also supported by a statement from a more senior nurse in focus five who stated, ‘Many of my nurses now come from different cultures, in fact the mix of cultures is on the

increase. I understand that evidence based practice should be universal with intent and content being easily translated, however it is more to do with utilisation styles and practices. I am not saying these cultural barriers can't be overcome, I am just saying I think they should be considered if look at adoption frameworks'.

Civic duty: Some nurses felt they had a duty to understand the cultural differences of others when it came to learning. A nurse from focus group three said, 'It would be arrogant of me to assume that our overseas colleagues would want to learn about evidence using the same methods as me'. Further, a nurse from focus group six adds, 'With such a variety of cultures and backgrounds in our ward, it makes sense to me that we should consider what has also worked well for them'.

Cultural respect: 'We have one new registered nurse with us from Saudi, he has difficulty in taking advice and direction from females, so this lately has him in hot water. But I think we should consider his culture more before we pass judgement, I mean perhaps at present he just needs a male mentor to guide him', expressed a nurse from focus group two.

Table 13 below summarises the major factors identified from the participatory cohort under the concept of the influence culture can have on research utilisation alone. The table is divided into actual and potential inhibitors or facilitators as identified from Leximancer data. Actual factors were those deemed to have unequivocal evidence to support them. Potential inhibitors were those requiring further evidence to make them unequivocal. If there was uncertainty in the data these were deemed to be unclear. It must be noted that this table is subjectively derived.

Table 13: Cultural factors (not identified in the literature)

Identified factors of adoption for research utilisation associated with Cultural Concept (A new theme found outside of the literature)				
Inhibitor			Facilitator	
Actual	Potential	Unclear	Actual	Potential
		Cultural Diversity		Cultural Diversity
	Civic Duty			Civic Duty
	Cultural Respect			Cultural Respect

Summation of qualitative findings

Of the propositions found in the literature nursing, organisation, communication, and patient concept have shone through in the focus group data. Economic, social, and innovation concept have also appeared as factors of influence, but with less focus. Other themes appearing in this data, apart from one (culture), did not lead to a change in the propositions that required answers for this study. Issues such as knowledge, care, access, learning and complexity were all deemed to tie into an existing proposition. Culture, however, was found through further analysis to be unique as it addressed unexplored issues not found in the literature, such as cultural background and the research practices and influence introduced from overseas trained nurses.

4.2 Survey Results

Results from the survey were firstly entered into an Excel document for data cleansing prior to entering into SPSS.

Survey analyses followed the following pattern:

Descriptive statistics

-describe the basic features of the data

↓

Reliability analysis

-<score> 0.35 (low)

-<score> 0.5 (high)

↓

Correlation

-Q items behave with other

↓

Factor analysis

-Determining strength of factors

The questionnaires were derived from a combination of factors found in the literature and those determined from focus group analysis. Surveys were widely distributed to nurses working within Queensland public and private hospitals. Of the 1000 surveys distributed, 180 were returned.

4.2.1 Descriptive statistics

Appendix 3, is a representation of the distributed survey questions in a descriptive format. Included in the descriptors are the survey questions, the provisional question to which each is intended to answer, the range, mean, standard deviation and, lastly, whether the identified issue is represented in a negative or positive context by the participants (i.e. is the factor the question is addressing noted as a barrier or facilitator to research utilisation by nurses). (Note: provisional themes where related to or assisting in answering another provisional question in some instances are recorded as more than one context.)

Descriptive statistics revealed that the availability of research reports was deemed to be a barrier to research utilisation by nurses. They were uncertain of research outcomes and felt statistics were unclear in the literature. In addition to this they felt

isolated from individuals who may be able to assist in overcoming these barriers. Nurses viewed the amount of published research as an inhibitor to learning and when interpreting literature found the implications to be unclear.

Generally, there was a fear of trying something new and perceived doctors would not cooperate with proposed changes and there was a fear of being chastised. The working environment itself was deemed to have a negative affect on nurses' intentions to utilise research, as unit norms appeared too adversely influence staff behaviour towards evidence based practice. Where nurses did access research they often believed it was not relevant to nursing. The study group was unsure whether there was a documented need to change practice or if the majority of conclusions drawn from the literature were justified. Hence, nurses were unsure whether to trust research or if there would be a significant change to practice.

Interesting was the view that their clinical unit adopted new evidence on a regular basis, however, the ability to produce new evidence was deemed to be a barrier. Innovations were recognised as a facilitator, being both beneficial and appealing to the study group. However, nurses were unsure whether they had access to these innovations.

Consumers were definitely recognised as a genuine barrier with concepts such as knowledge and skill highlighted by nurses. For concepts such as attitude and compliance, nursing staff were less sure about, however, in a majority of cases these were still deemed by many to act as potential barriers.

Nurses did not feel their facilities adequately allowed research utilisation and in many cases the executive would not endorse implementation. Nurses also felt the organisation did not give sufficient time on the job to implement new evidence and, hence, did not feel supported in their endeavours to change practice. The organisation was deemed to have an authoritarian approach to research, however, good change management practices were evident.

Because of organisation influence nurses perceived they did not have enough authority to influence a change to clinical practice and, therefore, lowered their perception of the value of implementation. Generally, they did not feel capable of evaluating the quality of research and lacked a good understanding of research utilisation models. They did not consider research utilisation models to be nurse-friendly and received poor training on research knowledge and the utilisation of evidence-based practice. Most nurses were, however, aware that research utilisation models could assist with evidence-based practice implementation; however, they did not possess the necessary skills to find evidence. Hence, nurses see research utilisation as a necessary step to continuing good practice, however, they were uncertain how to get there and feared the necessary steps needed to achieve this.

A smaller majority of nurses did perceive that valuable research stems from risk identification and did believe in benchmarking their practice; however, benchmarking appeared inconsistent. Time was a major factor for many nurses and accessing new research materials came with its own complexities. Research information overload was a major issue for most nurses with a large percentage (62%) indicating they were overwhelmed. Even with this, the embedding of new evidence was deemed to be essential for nurses to maintain their practice. Nurses indicated a significant lack of resources for research which affected any capacity to consider implementation. With this, corporate governance on research practices was lacking which diminished support in their capacity as a clinician to conduct research.

Nursing services did not appear to be costed appropriately to allow for research; and activities that evaluated for cost effectiveness were scarce. Nurses perceived an insufficient funding source for research and believe this directly correlated with a slow uptake of new research evidence. Without appropriate costing, nurses were rarely able to generate their own evidence through research, however, a positive number did believe nurses embraced change. Overall, however, it was perceived that senior staff were less likely to lead innovative change.

4.2.2 Reliability

Pilot testing of the survey questions was conducted in a sample of the target population under study and face validity was performed. Face validity was deemed a property of a test intended to measure research utilisation practices in nurses. The survey was deemed to have face validity as according to the sample of nurses who trialed it, it ‘looked like’ it was going to measure what it is supposed to measure.

One widely-used method of measuring content validity was developed by Lawshe (1975). It is essentially a method for gauging agreement among raters or judges regarding how essential a particular item is. Using the above pilot test, each of the subject matter expert raters (SMEs) on the judging panel responded to the following question for each item: ‘Is the skill or knowledge measured by this item “essential” “useful, but not essential”, or “not necessary” to the performance of the construct?’

Results: All questions generated from both the confirmation of the literature and the focus group transcripts were either deemed *essential* or *useful, but not essential*. No questions were deemed *not necessary* by the pilot cohort.

Further to the above face and content validity the available data was passed through SPSS Analysis Scale Reliability testing to determine consistency. Firstly, all questions were analyzed together followed by a breakdown, depending on assigned proposition.

SPSS Reliability Analysis

Overall, the reliability of combined variables was not strong. Cronbach’s Alpha test, although low, did not show the values as negative and hence did not violate reliability assumptions. Due to lower reliability, correlation analysis was conducted to better demonstrate the strength of relationships between related variables; and factor analysis was conducted to better demonstrate the strength of certain variables. These are highlighted below.

The combination of these related questions alone demonstrated a strong reliability confirming findings from both face and content validity processes.

Similar to the overall reliability of combined variables, variables related to innovation were not strong. Cronbach's Alpha test, although low, did not show the values as negative and hence did not violate reliability assumptions.

Similar to the overall reliability of combined variables, variables related to social concept were not strong. Cronbach's Alpha test, although low, did not show the values as negative and hence did not violate reliability assumptions.

Different to the majority of variables, those related to individual nursing concept were very weak. Cronbach's Alpha test did show the values as negative and hence did violate reliability assumptions. Due to lower reliability, correlation analysis was conducted to better demonstrate the strength of relationships between related variables and factor analysis was conducted to better demonstrate the strength of certain variables.

Different to the majority of variables, those related to economic concept were very weak. Cronbach's Alpha test did show the values as negative and hence did violate reliability assumptions. Due to lower reliability, correlation analysis was conducted to better demonstrate the strength of relationships between related variables and factor analysis was conducted to better demonstrate the strength of certain variables.

Similar to the overall reliability of combined variables, variables related to Laggards concept were not strong. Cronbach's Alpha test, although low, did not show the values as negative and hence did not violate reliability assumptions.

Similar to the overall reliability of combined variables, variables related to organisational concept were not strong. Cronbach's Alpha test, although low, did not show the values as negative and hence did not violate reliability assumptions.

The combination of these related questions alone demonstrated a strong reliability confirming findings from both face and content validity processes.

4.2.3 Correlation analysis

Overall major correlations were found demonstrating strong relationships, both negative and positive. In some instances a near perfect linear relationship existed between sub-groupings of survey questions when considered in their intended context. Correlation findings demonstrate an influential relationship between large proportions of chosen variables which adds strength to the content validity.

Table14: Social concept correlations

Correlations						
Pearson Correlation Sig. (2-tailed N)	I#	J#	K#	L#	M#	N#
I# S Implications for practice are made clear in the literature	1.000	-.261**	-.117	-.161*	.024	.050
		.000	.118	.031	.751	.504
	180.000	180	180	180	180	180
J# S There is a fear to try something new	-.261**	1.000	.158*	.107	-.058	-.099
	.000		.034	.153	.438	.186
	180	180.000	180	180	180	180
K# S Other staff are never supportive of new evidence	-.117	.158*	1.000	.145	.244**	.210**
	.118	.034		.052	.001	.005
	180	180	180.00	180	180	180
L# S Doctors will never cooperate with suggested changes	-.161*	.107	.145	1.000	.121	.071
	.031	.153	.052		.105	.343
	180	180	180	180.00	180	180
M# S The clinical unit itself appears to have a negative affect	.024	-.058	.244**	.121	1.000	.960**
	.751	.438	.001	.105		.000
	180	180	180	180	180.00	180
N# S Unit norms appear to influence staff behaviour towards evidence utilisation	.050	-.099	.210**	.071	.960**	1.000
	.504	.186	.005	.343	.000	
	180	180	180	180	180	180.000

Social Concept

Major correlations

A strong negative relationship was apparent when considering the clarity of the implications for nursing practice in the literature and a nurse's fear in trying something new. Results indicate that where nurses perceive literature to be less clear, a nurse's fear to try something new could increase. Results also indicate that as the literature or evidence becomes less clear, doctors are less likely to cooperate with proposed changes to evidence.

Stronger were the correlations between a fear to try something new and the negative effect the clinical unit has on research utilisation. Also strong were the correlations between a fear to try something new and how the unit norms affected research utilisation. This then demonstrated an almost complete relationship between unit norms and the negative effect the unit has on research utilisation.

Innovation Concept

(See Appendix 4: Innovation concept correlations for detailed data.)

Results from this subsection of correlations indicate a vast array of relationships between many different variables. This demonstrates that although consistency of questions was not guaranteed across similar populations, the dependency that many of the listed variables have on one another is quite strong.

Major correlations found

The factor addressing the replication of research demonstrated a strong positive relationship with both the clinical unit producing new evidence and the influence of change management practices. Interestingly, the amount of methodological uncertainties found in the literature also had a strong relationship with change management practices. When considering the majority of conclusions drawn from the literature, a strong positive correlation existed with the impact of changing practice and the widespread confidence in using research.

Staff belief in the results they were using possessed a negative correlation with how often nursing units adopted evidence; and a positive correlation in widespread confidence in using new research. Staff perception of the impact of changing practice was positively correlated with conclusions drawn from the literature, widespread confidence in using new research, and the access staff had to new innovations. A negative correlation existed to the appeal research had with nurses.

The regularity of adoption of new evidence had a negative correlation with the relevance of research being utilised and the belief in results from research. The production of new evidence by nurses had strong positive correlation with replication of new evidence, methodological uncertainties, change management practices, and risky innovation.

Change management practices strongly influenced the production of new evidence and any element of risk that may exist in adopting new evidence from a positive perspective.

Patient Concept

(See Appendix 4: Patient concept correlations for detailed information.)

Major correlations found

Correlations in this subset of data were very strong, further supporting the very strong reliability found in the group of questions. Consumer knowledge was negatively correlated with every other factor meaning that either increased or decreased consumer knowledge would do the opposite. Consumer skill was positively correlated with every other factor with the exception of patient knowledge—as was the case with consumer attitude, compliance, family influence, and consumer condition.

Organisational Concept

(See Appendix 4: Organisational Concept Correlations)

Major correlations found

Results from this subset of correlations show a large number of strong negative correlations. The adequacy of research facilities or an adequate research environment was greatly influenced by the research culture. A negative research culture results in a decrease in the likelihood of having good research facilities. Change management practices were also linked through negative correlation to the adequacy of a research environment kosher to doing good research.

Executive obstruction was positively correlated to communication channels and on the job time to do research negatively correlated to an authoritarian approach. Organisational support was negatively correlated to research culture and positively correlated with communication channels.

Individual Nurse Concept

(See Appendix 4: Individual Nursing Concept Correlations)

Major correlations found

A negative correlation existed between nurses seeing little benefit in using research and the speed at which research is being published. In contrast to this, a positive correlation existed between nurses seeing little benefit in using research and feeling capable of making an evaluation of research. Interestingly, capability was negatively correlated with the speed at which research is published. The authority to influence practice demonstrated a major positive relationship with the perception of value of implementation and embedding new evidence into practice. Perception of value of implementation and embedding new evidence into practice also correlated well.

The use and understanding of research models by nurses were positively correlated, however, an understanding of research models had a large negative correlation with risk identification practices and embedding new evidence. Also noteworthy was a

strong positive relationship between embedding new evidence and a good understanding of research utilisation.

Economic Concept

(See Appendix 4:Economic Concept Correlations)

Major correlations found

Where corporate governance was found to poorly support capacity to operate as an evidence-based clinician, a negative correlation was found to exist with the appropriate costing of services. No other significant correlations were apparent.

Communication Concept

(See Appendix 4:Communication Concept Correlations)

Very strong correlations were found within the concept of communication. The availability of research articles had powerful positive correlations with isolation from knowledge, the clarity and readability of reported research, and the overwhelming production of research. The clarity and readability of reported research and the overwhelming production of research also possessed powerful correlations with a feeling of isolation from knowledgeable colleagues.

Laggards Concept

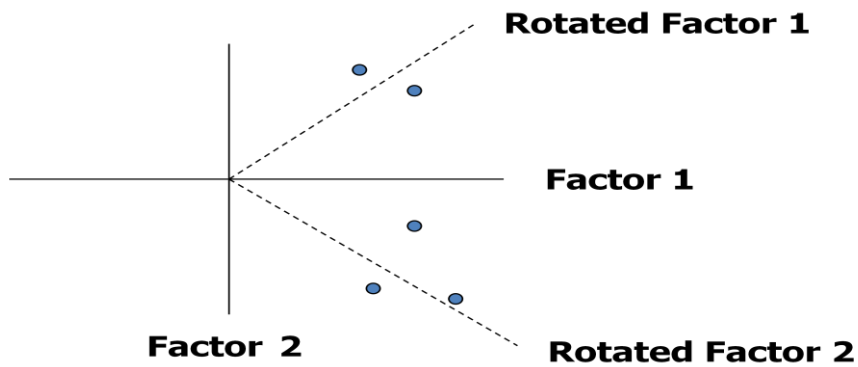
(See Appendix 4:Communication Concept Correlations)

Negative correlations were apparent between the speed with which evidence is adopted and the generation of one's own evidence. In contrast, the speed with which evidence is adopted was positively correlated with staff embracing change and leading innovation. The perception of new research as being risky showed a negative correlation with an increase in patient errors and a fear of trying new technology. The perception of new research as being risky was also positively correlated with staff embracing change and leading innovation.

4.2.4 Factor analysis: Principal component analysis

Factors were created—using a linear combination of all variables—that best explained the combined variance in all variables. Second factors were defined which were orthogonal to the first and best explained the residual variance. Principal component analysis then defined a third—which was orthogonal to the first two. The below diagram (Figure 12) best demonstrates this. Varimax was chosen as the type of rotation method as it simplifies columns—giving a clearer separation of factors—and each factor has variables that either load high or load very low.

Figure 11: Solution rotate the factor matrix



Factors of communication

Table 15: Rotated component matrix, Communication

	Component			
	Access to EBP	Knowledge utilisation	Misleading information	Data interpretation
A# Research reports articles are not readily available	.994			
B# I am made aware of research outcomes		.991		
C# Statistical analysis are not made clear in the literature				.980
D# The relevant literature is not compiled in one place		.991		
E# I am isolated from knowledgeable colleagues with whom to discuss research	.956			
F# The literature typically reports conflicting results			.990	
G# The research is not reported clearly and readily	.994			
H# The amount of research findings being produced is overwhelming	.994			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Results from Table 15 indicate the following variables (A#, E#, G#, H#) as being very strong factors when considering the access nurses have to evidence-based practice. All have a high correlation and access to evidenced-based practice accounts for 49% of the total variance. Results from column one indicate that new evidence, as well as the different levels of evidence that may assist with clinical reasoning are hard to access for nurses.

Column 2 indicates factors B# and D# as strong factors with significant correlation. Initial eigenvalues for knowledge utilisation accounted for 27% of the total variance when considering the proposition of communication as an influence in research utilisation practices by nurses. Results here indicate that nurses are informed regularly on research outcomes; however, they have difficulties in obtaining the findings.

Column 3 (Misleading information), which accounted for 12.6% of the total variance, indicates that nurses find conflicting results from evidence-based sources which can mislead their practice. This factor—which also had very strong correlation—further supports the proposition of communication being an influence on research utilisation practices.

Column 4 (Data Interpretation) which accounted for 9.6% of the total variance indicates that nurses definitely struggle with the interpretation of results in the formats that are presented in the literature. This factor, which also had very strong correlation, further supports the proposition of communication being an influence on research utilisation practices.

Factors of social concept

Table 16: Rotated component matrix, Social

	Component			
	Clinical Unit	Fear based on interpretation of findings	Support from other health professionals	Support from other staff
I# S Implications for practice are made clear in the literature		-.701		
J# S There is a fear to try something new		.706		
K# S Other staff are never supportive of new evidence				.680
L# S Doctors will never cooperate with suggested changes			.817	
M# S The clinical unit itself appears to have a negative affect on research utilisation	.969			
N# S Unit norms appear to influence staff behaviour towards the use of new evidence	.957			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

From a social concept, the clinical unit itself exerts significant influence on research utilisation practices within the nursing population under study. Factors M# and N# both showed a very high correlation, and accounted for 35% of the total variance for this proposition. A clear finding stemming from results on social concept was the element of fear as a barrier towards research utilization. Interestingly, where implications for practice were unclear, the negative correlation advises that the fear

to use new research would rise. Other strong factors appearing in this data set indicate that the support from other professionals in a social setting is generally perceived as poor. These factors confirm the proposition that social concept can exert influence on research utilisation practices by nurses.

Factors of innovation concept

Table 17: Rotated component matrix, Innovation

	Component			
	1.Faith in externally derived evidence	2.Faith in outcomes	3.Trust in new research	4.Belief in new innovation
O# I The research has never been replicated	.629			
P# I Research being conducted is not relevant to nursing practice			.731	
Q# I The research has methodological uncertainties	.587			
R# I The majority of conclusions drawn from the literature are not justified		.754		
S# I There is not a documented need to change practice				
T# I You are uncertain as to whether to believe the results of research			.728	
U# I You feel the impact of changing practice will be minimal		.742		
V# I Our clinical unit adopts new evidence on a regular basis			-.890	
W# I Our clinical unit produces new evidence	.932			
X# I Change management practices influence the adoption of new	.923			
Y# I New innovations are risky	.817			
Z# I There is widespread confidence in using new research		.781		
AA# I Innovative research is appealing to nurses		-.699		
AB# I New innovations are beneficial				.585
AC# I We have access to new innovations				.874

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

The first 4 components from these findings shared a significant percentage of the variance when considering the initial eigenvalues. Component 1, which accounted for 22% of the variance, was related to the faith nurses had in externally derived evidence. These results clearly indicate that nurses would like to use research evidence that they had produced themselves. Factor W# shows a very high correlation with the production of new evidence at the clinical level. Further, factors X# and Y# support this finding showing a relationship between change management

practices and the adoption of new evidence and that new innovations are perceived as risky.

A second finding was related to the faith nurses had in research outcomes. A negative correlation existed with factor AA# indicating that where research became less appealing so too would there be decreased confidence from nurses in using research. Also supporting the finding that nurses did not have faith in research outcomes were factors R# and U# which indicated nurses did not have faith in the conclusions drawn from the literature and that any impact the new evidence may have would be minimal.

The third component, which accounted for 16% of the total variance, indicated a lack of trust in research conducted outside the nursing domain (Factor P#). This finding was positively influenced by factor T# as nurses did not know whether to believe the result of research. Factors P# and T# then exerted a negative influence on factors V#. Where lack of trust in non-nursing research and a belief in research findings existed, nurses were less likely to adopt new evidence on a regular basis.

The fourth component, accounting for 11% of the total variance, was somewhat contradictory to the above findings indicating that nurses had a belief in new innovations. Factors AB# and AC# demonstrated nurses perceived new innovations as beneficial and also had access to new innovations.

Factors of consumer concept

Table 18: Rotated component matrix, Consumer

	Component			
	Negative effect of consumer on research utilisation	Negative effect of consumer compliance on research utilisation	Family influence	Consumer knowledge
AD# P The consumers knowledge affects research utilisation in my ward				.968
AE# P The consumers skills affects research utilisation in my ward	.899			
AF# P The consumers attitude affects research utilisation in my unit	.878			
AG# P The consumers lack of compliance affects research utilisation		.640		
AH# P The consumers family influences their compliance			.844	
AI# P The consumers condition is know to affect research utilisation		.895		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Results from this data set indicate a clear link between the patient and an adverse effect on research utilisation practices by nurses. Strong factors in component 1, with over 70% of the total variance, were consumers' poor attitude and lack of skills with proposed changes to care. Both these factors exerted a positive influence on each other, meaning that as one decreased or increased so too would the other.

Other factors of importance which confirm that patients can exert influence on the research utilisation practices of nurses in a negative concept include a lack of compliance with proposed changes which was positively influenced by the patient's condition, meaning that as the patient's condition improved so to would their compliance. Other factors accounting for a lower percentage of variance include the influence the patient's family may have, as well as the patient's actual knowledge of the proposed change to practice.

Factors of Organisational concept

Table 3: Rotated component matrix, Organisation

	Component			
	Organisational Influence	Change management resources	Organisational time	Executive influence
AJ# O The facilities are adequate allowing research utilisation		.857		
AK# O Executive will not allow implementation				.966
AL# O There is insufficient time on the job to implement new e			-.757	
AM# O I feel supported in my endeavours to change practice bas	.803			
AN# O The organisation has a positive research culture	-.773			
AO# O The organisation has an authoritarian approach to research			.824	
AP# O The organisation has good change management practices		-.851		
AQ# O Communication channels are effective		.813		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

The strongest factors found in this data set—with 31% of the total variance factors AM#, AN#, and AQ#—indicate that organisational influence exists in a negative context. Although the majority of nurses feel supported in their endeavours to change practice, there is an overwhelming negative correlation with the organisation's research culture. Nurses perceived organisational research culture as poor. Interestingly, nursing support was positively influenced by good communication practices. Also confirming the proposition that organisational factors can influence research utilisation practices were findings related to change management resources. Overall, resources for research were detailed as inadequate for conducting research, which had an equal relationship with the organisations change management practices.

Component 3 highlighted the effect that lack of time within an organisation has on research utilisation practices. This was inversely related to the authoritarian approach towards research. Related to this authoritarian approach was component 4, which indicated nursing strongly believed hospital executive would not allow implementation.

Factors of the Individual Nurse Concept

Table 20: Rotated component matrix, Nurse

	Component			
	User friendly research utilisation models	Nurses perceived value of research evidence	Nurses perceived value of research evidence	Time-Value- Knowledge/skill
AR# N I see little benefit in using research findings			-.771	
AS# N Research is never published fast enough			.768	
AT# N I do not have time to read research				.621
AU# N I do not have enough authority to influence a change a c		.875		
AV# N I do not see that value for implementation		-.863		
AW# N I do not feel that the results are generalisable to own				
AX# N I do not feel capable of evaluating the quality of research			-.791	
AY# N I have a good understanding of research utilisation mode		-.540		
AZ# N I find research utilisation models to be nurse friendly	-.940			
BA# N I have received adequate training on research and the utilisation process				-.543
BB# N I find research utilisation models to assist with eviden	-.540			
BC# N I have the necessary skills to find evidence				
BD# N I see research utilisation as a necessary step to contin				.572
BE# N New research stem from risk identification	-.819			
BF# N I regularly benchmark my practice	.618			
BG# N Time is a major factor for me				
BH# N Accessing new research materials is easy for me				
BI# N Research Information overload is a major issue for me				.625
BJ# N Embedding new evidence is essential for me to maintain m		.674		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Evident from these results, with a 23.5% variance, were strong confirmatory factors AZ# and BB# which indicated that nurses did not perceive research utilisation models as nurse user friendly. Another interesting finding in this data set was a negatively weighted correlation with the utilisation of documented risk to trigger research utilisation. Findings indicate nurses do not utilise this data widely.

Within components 2 and 3 are the emerging findings of the perceived value nurses have for research. Firstly, it was clear nurses did not believe that they had enough authority to make the decision to do research, however, they still placed value in trying. Complementing findings in component 1 was the fact nurses did not believe they understood research utilisation models. Also important here was the finding that nurses do believe embedding new evidence is essential to their practice.

Within component 3 a negative relationship existed between factors AR# and AS#. This indicated the speed at which research was published adversely affected the perceived benefit in using research findings. Also adversely affected by the speed at which research was published was the nurse's confidence in evaluating the quality of research being published.

The last component indicates that lack of time and training are barriers to research utilisation. Nurses indicated they had no time and, consequently, had received inadequate training on research. Component 4 also confirmed that nurses do see value in doing research.

Factors of Economic Concept

Table 21: Rotated component matrix, Economic

	Component			
	Budgeting policy	Cost effective evaluation	Available funding for research	Lack of resources
BK# E There is a lack of resources for research which affects				.997
BL# E Corporate governance supports our capacity as a clinician	-.805			
BM# E Nursing services are costed appropriately to allow for r	-.510			
BN# E Activities are evaluated for cost effectiveness		-.974		
BO# E There is sufficient funding for research			-.999	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Component 1, which accounted for 27% of the total variance, indicated that nurses did not believe corporate governance supported their endeavours to do research or that nursing services were costed appropriately to allow research. Noteworthy here was that as corporate governance support decreased so did the costing allowance for research. Hence, is clear that there is no budgeting policy for research.

Emerging as a strong factor was a very high negative correlation indicating that nurses did not feel research activities were appropriately evaluated for cost effectiveness. Also evident in component 3 was a very strong correlation with the fact no funding was available for nurses to do research. This complemented the finding in component 4 which outlined a lack of resources as a barrier to research utilisation.

Factor of Laggards Concept

Table 22: Rotated component matrix, Laggards

	Component			
	Relationship Fear – Innovative change	Embracing vs risk to patient	Lack of research activity and increasing patient error	Generation of own evidence
BP# L We are slow to adopt new evidence	.686			
BQ# L New research is viewed as a risk to patients		.593		
BR# L Patient errors increase because our practices never change			.919	
BS# L Staff fear new technologies	.618			
BT# L Staff embrace change		.565		
BU# L Our staff generate their own research evidence				.926
BV# L Senior staff lead innovative change	-.828			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Confirmatory findings from this data set indicate that nurses are laggards when it comes to research utilisation. This factor had a strong positive relationship with a fear to try new innovations, particularly technology. Consequently, senior staff were perceived by the majority of nurses as not wanting to lead innovative change.

Although BQ# did not have a strong correlation it still emerged as a potential barrier to research utilisation. Where nurses perceived research utilisation as a risk to the patient being treated they were less likely to adopt new evidence. This factor had a positive relationship with the nurse actually embracing change.

Interestingly, and almost contradictory to the finding for factor BQ#, was the factor that nurses overwhelmingly believed that without research utilisation practices in place patient error would begin to increase.

Summation of overall findings

Factors identified in the literature indicated several different contexts as potential barriers to successful utilisation. These include the consumer/patient, the social setting of nursing, the organisational effects, financial barriers, communication breakdown, and the idea or concept itself. Within each context appears to be several noteworthy factors, mainly knowledge (both nurse and patient), nursing skill, time, access to new evidence, speed of adoption, and evidence-based practice leadership (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003). These findings, which were put forward as propositions in this research, were confirmed through qualitative findings with the exception of Queensland nurses being laggards when it came to adopting new evidence. Based on a combination of findings from qualitative data, the literature, and quantitative data it is clear that in the majority of circumstances nurses are not laggards when it comes to research utilization but, rather, there are barriers that can significantly delay attempts to raise standards of practice. Notable from these findings was the overload nurses feel when it comes to the introduction of new innovations or disseminated evidence based practice.

Table 23: Combined results

Factors from the literature	Factors from focus groups	Survey factors/ confirmatory
Consumer		
<ul style="list-style-type: none"> • Knowledge • Skills • Attitude • Compliance 	<ul style="list-style-type: none"> • Knowledge • Condition • Family • Non-compliance 	<ul style="list-style-type: none"> • The consumers knowledge affects research utilisation in my ward • The consumers skills affects research utilisation in my ward • The consumers family influences their compliance • The consumers attitude affects research utilisation in my unit
Social		
<ul style="list-style-type: none"> • Opinions of colleagues • Culture of work • Collaboration • Leadership 	<ul style="list-style-type: none"> • Opinions of colleagues: Being supportive • Culture of work: Nursing education • Collaboration: Self confidence/ support • Leadership: Organization structure 	<ul style="list-style-type: none"> • Unit norms appear to influence staff behaviour towards evidence utilisation • Other staff are never supportive of new evidence/ There is a fear to try something new • Doctors will never cooperate with suggested changes • The clinical unit itself appears to have a negative affect
Organisational		
<ul style="list-style-type: none"> • Care processes • Staff • Capacities • Resources • Structures 	<ul style="list-style-type: none"> • Support • Assign key person/ Authority/ Staff release/Attitudes to completed research • It resource and support • Resources • Change management 	<ul style="list-style-type: none"> • There is not insufficient time on the job to implement new research findings • Staff are supported in their endeavours to change practice • Executive will not allow implementation • The facilities are adequate allowing research utilisation • The organisation has poor change management practices
Economic and political		
<ul style="list-style-type: none"> • Financial arrangements • Regulations • Policies 	<ul style="list-style-type: none"> • Forecasting the need nursing personnel • Evaluating the effectiveness of nursing care • Costing Nursing services 	<ul style="list-style-type: none"> • Insufficient funding for research • Lack of research resources • Nursing services not costed
The Innovation Itself		
<ul style="list-style-type: none"> • Feasibility • Credibility • Accessibility • Attractiveness 	<ul style="list-style-type: none"> • Definition • Confidence • Appreciation/ Beneficial 	<ul style="list-style-type: none"> • The majority of conclusions drawn from the literature are not justified • Research being conducted is not relevant to nursing practice • Innovative research is not appealing to nurses
Individual Nurse		
<ul style="list-style-type: none"> • Knowledge • Persuasion • Decision • Implementation • Confirmation • Time • Access 	<ul style="list-style-type: none"> • Knowledge: Accreditation, benchmarking • Persuasion: Liability, Malpractice • Decision: Risk Management, Incident reporting • Implementation: Quality Improvement, Practice guidelines • Confirmation: performance standards • Time • Access: Information overload 	<ul style="list-style-type: none"> • Knowledge: Capability • Persuasion: perception of value of implementation • Decision: negative correlation with risk identification practices • Implementation: Embedding new evidence • Time: little benefit in using research and the speed at which research is being published
Communication		
<ul style="list-style-type: none"> • Verbal • Written • electronic 	<ul style="list-style-type: none"> • Knowledge • Encourage Questions / Learn • Go to Source • Share/Relationships • Knowledge building/ Collaborate • Approachability/ Team 	<ul style="list-style-type: none"> • Research reports are not readily available • Isolation from knowledgeable colleagues • Research is reported in an unclear fashion • Overwhelming production of research
Laggards Research Utilisation		
<ul style="list-style-type: none"> • Time 	<ul style="list-style-type: none"> • Risk Management • Leadership • Management • Information Technology 	<ul style="list-style-type: none"> • Speed of adoption • New research is risky

Chapter 5: Discussion

Discussions were generated using a triangulation of relevant findings from the literature, qualitative, and quantitative findings. To achieve this, a gap analysis of these findings was performed and a particular emphasis was not only given to finding similarities but rather evidence of unexplored themes that warrant further exploration. A proposed research utilization model is put forward and a comparison is made against theoretical models.

5.1 Proposition 1: The concept of the patient will affect the acceptance of research utilisation by nurses

What was clear from qualitative findings was that patients can have a direct impact on the overall success of research utilisation in acute care settings. Clearly, confirmed by the literature (NICS, 2005), was the factor of patient knowledge which can have a significant effect, both in a negative and positive context. This was truly confirmed by statements from the thematic transcripts like, ‘Often now our patients come in with preconceived ideas on what treatments they will receive as they have read all about it, in some ways this is very good because they are well informed and we can get on with treatments, but in other ways it can make changing treatments difficult at times’, as stated by a nurse from focus group three. Further confirming this are the findings from qualitative results in both descriptive statistics and factor analysis. Descriptive statistics indicated that patient knowledge and skill are real barriers to research utilisation for nurses. Further to this, factor analysis also confirmed these two patient concept elements as strong inhibitory factors for nursing when implementing research. These results confirm those ideas outlined by the National Institute of Clinical Studies (2005) indicating that if patients are less informed about their condition and their treatment options then there is an increased likelihood that they may not comply with treatment. Therefore, as suggested by one of the nurses from focus group one, ‘When introducing new concepts into nursing settings, patient buy-in should always be a consideration’. Partial confirmation could be found when comparing the identified factors of patient attitude and non-compliance with the evidence already put forward by NICS (2005). If a patient’s

attitude is negative towards a new innovation then obviously they are more likely to be non-compliant.

An interesting factor found in this research not outlined in the initial literature review was that of family influence. In a further exploration of the literature little can be found to confirm this opinion. A clear message derived from qualitative data was that a family member can hold a lot of power with decision making if certain circumstances allow it. According to the staff participating in this research, family influence in the past has been both positive and negative. In the past, staff felt that family have assisted in informing and convincing a loved one to participate in treatment options, however, on the other end of the spectrum they have convinced loved ones to go against treatment. Messecar, Powers and Nagel, (2008) recommended that relationship modeling and profiling is utilized when planning patient care, with a particular emphasis on including the family. Based on the psychometric tool 'The Family Preferences Index' developed by this research group, if it is predicted family relationships may have a negative impact on research utilization, then strategies could be introduced early to overcome potential barriers and, additionally, identified predictors may also facilitate research utilisation. The factor of family influence, although very strong in the qualitative finding, was not confirmed by quantitative analysis as questionnaire distribution had occurred prior to this finding becoming apparent in a more in-depth iteration of qualitative data.

One obvious barrier not previously highlighted in the initial literature review was the influence the patient condition can have on the success or failure of an innovation. Very little of the literature (NICS, 2005; Messecar, Powers & Nagel, 2008; McCloskey, 2008) sourced appears to refer to this theme directly. This concept has potentially been overlooked by previous authors because it is simply implied. Many of the nurses participating felt that this warranted further investigation. Most agreed that in a large number of circumstances this barrier was truly beyond any individual's control; however, as outlined by one nurse in focus group six, 'If anxiety or distress are barriers to us implementing a new procedure these factors can be reduced, if not eliminated to allow for successful implementation'. Dufresne and Green (1990) indicate that some of the major reasons for patient non-compliance with treatment are loss of vision or hearing which can impede a person's ability to

read important information about their prescription or to hear instructions about his regime. Mobility limits, type of disease, the presence of symptoms, memory loss, depression, and cognitive impairment are other physiological variables mention by Dufresne and Green (1990) that can negatively affect compliance.

The exact reason nobody has researched this concept in more depth may well be because in the majority of situations patient condition cannot be controlled or altered. This perception, however, may be causing an oversight of patient conditions that can be controlled, reduced, or eliminated and hence allow for effective research implementation to occur. Solutions stemming from both the focus group discussions and the literature (NICS, 2005) advise individual patient cases should not be a deterrent and that longitudinal trials of new innovations can only truly give an accurate depiction of their impact on patient care standards.

Further supporting these findings were the strong correlations and factors found during quantitative analysis. Results from this data set indicate a clear link between the patient and an adverse effect on research utilisation practices by nurses. Stronger factors were the consumer's poor attitude and lack of skills with proposed changes to care. Both these factors exerted a positive influence on each other, meaning that as one decreased or increased so too would the other. Revisiting the literature to support and discuss this proposition reveals the use of several types of decision-making configurations and methods to recognize and prioritise topics in which they want to invest and to select between research proposals (O'Donnell & Entwistle, 2004). O'Donnell and Entwistle (2004) suggest involving consumers in these structures and processes in diverse ways. However, they indicate that little is known about the actual effects of this involvement, although the nature and extent of patient influence on research utilisation is likely to be influenced by a number of factors including the types of consumers involved, the particular structures and processes in which they are involved, the timing of their input and the different ways in which they are asked to contribute in relation to others. Based on recommendations from O'Donnell and Entwistle (2004) nurses could involve consumers in the various approaches that they take to identify and prioritise research topics and make decisions on the right course for research from there. The future development of nursing activities could usefully be informed by cautious consideration, not just of

consumer involvement but of the propositions of the various structures and processes that shape nursing research agendas. O'Donnel and Entwistle (2004) state, 'The appropriateness of particular forms of consumer involvement should be considered in the broader context of the features of the whole research funding system, including the values implicit within it'.

The combination of results found in the literature (NICS, 2005), focus group analysis, and quantitative data analysis all confirm that patient concept does have a direct influence on research utilisation practices by nurses, however, this research has also highlighted that the entire family concept should be considered along with this.

5.2 Proposition 2: The concept of social influence will affect the acceptance of research utilisation by nurses

This research particularly highlighted the social control elements that continue to influence working norms and how these directly affect research utilization practices. Social control functions portrayed by day-to-day rituals and unit norms emerged as central barriers in the findings. Social control appeared as a prominent working norm. This was best described by the following complementary and confirmatory qualitative and quantitative findings: Many of the focus group participants complained of the 'lack of self-confidence in nurses'. They implied that factors such as 'inappropriate methods of education', and 'social and organizational culture' resulted in 'frequent cross-questioning and under-questioning of the scientific and technical competence of nurses' which, in turn, negatively affected their self-confidence. Nurses at the practice level need to acknowledge the differences in the educational capacities of their peers. Finally, they believe that they are not competent but they are only 'the executive agents for doing the doctors' orders' as one nurse said. One nurse in focus group 5 states, 'I lack confidence in other nurses, particularly new nurses as I know the information we are currently using to guide practice lacks substance, and I fear they will be lead astray. I know I make decisions based on my experience rather than what is in the text book, but they lack this experience'.

Authors such as McCloskey (2008), York (2008), and Gifford et al. (2007) support these findings indicating that at the practice level staff nurses need to become more proactive in translating research into practice by supporting each other and creating ways to find the time to read journal articles. Quantitative data further confirmed focus group findings indicating in descriptive, correlation and factor analysis that the clinical unit itself appears to have a negative effect on research utilisation and that unit norms such as not being proactive, not being prepared to seek clarity on research findings, and maintaining an unnecessary fear about research utilisation contribute to this. The element of fear as a barrier towards research utilization has been discussed widely in the research (McCloskey 2008; York, 2008; Gifford et al. 2007; Estabrooks, 2003; Asselin, 2003) and this study has only further confirmed that this barrier does exist. Noteworthy was a result indicating that as implications for practice became unclear the fear to use new research would rise. This would further emphasise the need for nurses to support each other—which can only encourage better translation of research (McCloskey, 2008). Other strong factors appearing in quantitative results indicated that the support from other professionals such as doctors in a social setting is generally perceived as poor. Estabrooks et al. (2008) confirms this finding, but indicates that much of this barrier may relate to communication rather than doctor attitude. Findings from factor analysis does confirm this theory showing an overwhelming number of nurses feel isolated from knowledgeable colleagues, indicating a poor pattern of communication.

This research clearly demonstrates and further supports theoretical underpinnings (NICS, 2005) on social concept as a significant barrier to research utilization among Queensland nurses.

5.3 Proposition 3: The concept that an organisation will affect the acceptance of research utilisation by nurses

There were two clear confirmatory factors stemming from the literature (McCloskey, 2008; NICS, 2005; York 2008; Estabrooks et al, 2003; Baxter & Boblin, 2008), qualitative results, and quantitative analysis. The key concepts of resource availability and organizational support were stand-out issues. Both of these concepts as identified in the literature were viewed in a negative context. What is

clear in Queensland's nursing environments is that more research resources are required if research utilisation is to take a strong hold. What is also clear is that the organizations that govern these clinical areas need to provide these nursing cultures with research support to assist them in the conduct and/or implementation of research (McCloskey, 2008). Focus group data indicated that nurses in particular felt there was a lack of IT infrastructure and any support required to use this IT infrastructure to its full potential was also lacking. Lack of IT infrastructure, which was confirmed in the literature (Baxter & Boblin, 2008), had a strong presence as a barrier in all phases of this research—prominently appearing in both qualitative and quantitative findings. As indicated in qualitative results, one nurse in focus group one states, 'I can never obtain access to a computer when I need it, I would like to use any free time I have, which is rare mind you to look up new journal articles, but anytime I go to there is never a computer to do it with'. Or as one nurse in focus group three states, 'We simply don't have enough computers in our working environments to cater to every health professionals needs, essentially we nurses need our own computers that only we access when needed, and believe me we would use these a lot. I would even go as far as suggesting the organization considers hand held computers so that each individual has permanent access to the information they need'. These perceptions by research participants are then further confirmed by survey participants indicating an overwhelming consensus that there is a lack of resources to assist with research and insufficient funding allocated to allow nursing research utilization practices to occur.

Queensland nurses generally felt that the organization as a governing authority utilized that authority in a restrictive capacity and, hence, decreased the likelihood of research utilisation practice. From focus group transcripts it was evident that many nurses felt a negative research attitude existed throughout the entire organization, however, they felt that their social networks were very positive towards research. As an example, one nurse from focus group six makes this very clear with her response, 'On one hand we are encouraged to ensure we operate by best practice and update our standards, on the other we are informally discouraged as the organisation takes away more resources and impedes any time we once may have had to devote to research utilisation'. This was further supported by quantitative data in Table 19; factor AN# indicates Queensland nurses overwhelmingly believe there is a negative

research culture. These results also confirm qualitative findings, further indicating the organization does take an authoritarian approach to research. These results are supportive of findings in the literature (Pearcey & Draper, 1996) which also outline a need for organisations to be less authoritarian in their approach to research implementation and adopt the principles of innovation diffusion as outlined by Rogers (2003).

Another factor identified by this unique group of nurses was the concept of information flooding. It was generally felt that the organization climate, culture, and practices resulted in an overload of new clinical information. A bottleneck was described by many nurses, and confusion as to which new directive had the most importance. Outside of organization information flow was a bombardment of other new sources of evidence that nurses were expected to decipher and utilize without organizational support to do so. Clear from the qualitative findings was a lack of direction or control on what research innovations should be used. One nurse from focus group 6 explains, 'I don't believe the organisation is controlling the amount of information flow for new research, we feel bombarded'. Further, a nurse in focus group 3 outlined, 'I think we receive too much information too quickly, there is just far too much to deal with. It was also evident that the organization structures that existed only exacerbated this issue. Staff believed the organization should give more allocated study time to nurses, release more nurses to engage in research, and assign key roles for research. Outside of this, it was perceived widely that the organization needed to improve its research culture if they were to receive support. What was very clear is that the organization as a whole had much to learn from this social network of nurses. Further supporting these qualitative findings was a quantitative factor indicating that information overload is a real issue.

Hall & Walton (2004) stress the role of a healthcare organisation in information overload, but do not provide any true solutions. They do stress that the efficient use of information and knowledge depends not just on technology, either as storage or delivery, but that the correct organizational structure is in place to take advantage of that knowledge/information. In nursing the current trend is to move away from the old hierarchical structure of health care delivery towards a more team-orientated structure. Further, Hall & Walton (2004) explored the implications this would have

for various clinical groupings—in particular, nurses. A specific organizational tool to enable organizations to deal with information overload is described as being essential by these authors. Hall and Walton explored the use of environmental scanning within rehabilitation organizations and suggested a four step approach to the concept by selecting and searching, culling unnecessary information, analysing only required sources, and then negotiating action. Inherently, these authors agree with those sentiments of this study group and believe stronger controls are required within organisations on the flow of evidenced-based materials.

Interestingly, nurses did perceive that organisational communication channels were effective, however, this contradictory finding may lie outside of the research utilisation concept as the line of questioning in the survey was not specifically directed at research but, rather, communication in general. More research-related lines of questioning such as ‘The relevant literature is not compiled in one place’ and ‘The amount of research findings being produced are overwhelming’ tended to reveal a negative research communication concept at an organization level.

Evident from the literature, as well as from both qualitative and quantitative findings of this study, is that an organisation and its corporate governance practices can have an adverse impact in nursing research utilisation practices.

5.4 Proposition 4: The concept the economics will affect the acceptance of research utilisation by nurses

Qualitative data obtained from renal nurses has been very supportive of those concepts identified in the literature. The literature (Pearson, 2000) tells us that financial arrangements should factor in research for budget planning. Pearson (2000, p. 1) states, ‘I have argued that there appear to be five major issues to be confronted if we are to progress nursing science in the future’. In these five priorities Pearson indicates, ‘The Need for a "Fair Go" in funding nursing research. The nurses involved in this research study were very clear that budget forecasting for nursing personnel needed to be improved; and predictive models should also include required research activities. Qualitative findings such as ‘the tools for predicting the

need for nursing numbers require further development and should incorporate more of the multitude of intricate factors that impact on nursing and the demands for care' and 'Somebody needs to come up with some solutions that will free our time and provide us with the funding, resources, and time to do these things, only then will we have the capacity to consider research in our core business' support this view. These findings also support Pearson's (2000) notion that nursing research funding deserves more attention. Furthermore, these qualitative findings support NICS's (2005) claims that economic factors can have a direct impact on nursing research capacity, for example: 'I believe we should be looking more closely at whether cost effectiveness and patient outcomes are complementary, what I mean is do we always opt for the cheaper stock item or in the long run would the more expensive item be more cost effective'; or, 'We often introduce new nursing service however at no stage have we or are we likely to consider the financial benefit and burden, such as our remote mobile treatment stations we now have for patients'. These types of responses from nurses would indicate that principles of innovation diffusion are not being applied with implementation and that an element of persuasion does not exist so that nurses might become convinced of the value of an innovation (Rogers, 2003).

Further confirming those findings in the literature (Pearson, 2000; NICS, 2005) and the qualitative results was strong evidence stemming from quantitative analysis. Results indicated that nurses did not believe corporate governance supported their endeavours to do research or that nursing services were costed appropriately to allow research. Noteworthy here was that as corporate governance support decreased so did the costing allowance for research. Hence, it was clear that there is no recognised budgeting policy for research.

Emerging as a strong factor was a very high negative correlation, indicating that nurses did not feel research activities were appropriately evaluated for cost effectiveness. This further confirmed those statements made in focus group discussions. Also evident from factor analysis was a very strong correlation with the fact no funding was available for nurses to do research. This further complemented findings in this research which outlined a lack of resources as a barrier to research

utilisation. Based on the combination of multiple findings, this proposition was confirmed.

5.5 Proposition 5: The concept that innovation itself will affect the acceptance of research utilisation by nurses

A synopsis of literature (Rogers, 2003; Rogers, 1983; Rogers et al. 2005) regarding the general principles of innovation discloses that in order for innovation to occur, processes and instruments need to exist in organizations to support creativity and, thus, the prospect for creativity needs to subsist and therefore the opportunity for nurses to innovate. Supporting these findings in the literature is one statement found in the qualitative findings. One nurse from focus group 2 indicates that ‘in order to assume whether there are risks with innovation, those involved with change must have confidence that the organisation will reward success and tolerate failure’. This alludes to the need for an organisation to have innovation processes. Further to this, a nurse from focus group 5 states ‘it is important to understand how innovation does or does not occur within our complex health care system as well as why it may or may not be accepted by stakeholders’. By having corporate governance structures around innovative change, as outlined by Hughes (2006), nurses may begin to be at the forefront of innovation. Without process direction and fearing change based on persecution because of failure, nurses may be less likely to engage in innovative change.

Purposeful innovation, therefore, begins with an analysis of opportunities; and defining innovation would be a step in the right direction to achieving this (Hughes, 2006). Participants in this research expressed that there was no clarity as to what constitutes innovation in nursing, or even advice on how to recognise what an innovation is. One nurse stated ‘What were not clear to me is what constitutes innovation in nursing services, how it is recognized, and why it is important in nursing service’, with another nurse saying ‘it is important to appreciate the issues and challenges in designing, developing and delivering innovative ideas that we do have in nursing’. This supports those findings stemming from the literature that advises leadership is a critical factor in fostering innovation (Hughes, 2006). Hughes (2006) has outlined that not all innovation leads to change. One participant not only

confirmed this notion, but outlined in a very articulate manner saying, ‘Innovation leads to change but not all change leads to innovation in my opinion, to me innovation is not a variation of something old and therefore not all change is innovative’. Hughes (2006) informs that successful innovation always aims at leadership – all strategies aimed at exploiting an innovation must achieve innovation within a given environment.

Further to the confirmatory literature and qualitative findings were the results stemming from quantitative data sets. Descriptive data indicated that change management practices were poor—which further supported Rogers et al’s. (2005) claim that processes and instruments need to exist in organizations to support creativity, and thus the prospect for creativity needs to subsist and the opportunity for nurses to innovate. Findings from the descriptive Table 8 indicated that nurses believed in innovation and embraced it. Further quantitative findings after conducting factor analysis indicate a strong desire to actually be innovative and produce new evidence. Due to poor change management practices, nurses indicated that nurses were less likely to attempt innovative change due to the negative factors of consequence that may result. Also apparent was the trust nurses had in the innovation being suggested. Factors contributing to this appear to support those found in the literature, particularly Hughes (2006) who recommends decisive innovation begins with an analysis of opportunities and an appropriate definition. Within this definition could be issues of beneficence that would fully inform all nurses of both positive and negative consequences through implementation. This further supports quantitative findings which outline a relationship between the faith nurses had in research outcomes and their decreased confidence in using research. Also supporting the finding that nurses did not have faith in research outcomes were factors which indicated nurses did not have faith in innovations drawn from the literature and that any impact the new evidence may have would be minimal.

Findings drawn from the literature, qualitative research, and quantitative findings demonstrate that the innovation itself can affect the successful utilisation of research by nurses.

5.6 Proposition 6: The concept that the individual professional will affect the acceptance of research utilisation by nurses

Factors such as knowledge, decision, and time identified in the literature (Rogers, 2003; Evans and Pearson, 2001; Baxter and Boblin, 2008) were confirmed through qualitative findings. Many of the nurses interviewed felt that time management skills greatly affected a nurse's capacity to balance nursing tasks, and if workloads are not organized then nurses will struggle to finish everyday work practices, leaving no time for research. As a nurse from focus group four outlines, 'I think nursing is just getting busier, with our workloads growing as the nurse to patient ratio starts to widen. This is a real issue as we would like to do some of these activities as we really do enjoy them'. Zahourek (2006) outlines that holistic nursing research is demanding, yet essential in supporting nursing practice. Zahourek (2006, p 1) asks 'how or is holistic nursing different from other forms of research in complementary alternative modalities and nursing'. The author further outlines the passage of time as a confounding variable, along with a nurse's knowledge or ability to interpret the meaning of an experience.

As outlined in chapter 4, the majority of nurses participating in focus groups discussions viewed evidence-based practice (EBP) as a means of ensuring that the clinical care offered was of a high standard. As outlined by staff in focus group 1: 'EBP is just reassuring the clinical care that I provide on a daily basis is in line with research and accurate information, it is a reassurance that what I am doing is the latest innovative accurate clinical care, it's new, it's not something that we would be doing 20 years ago'. Sackett et al. (1996) assert that evidence-based nursing is a diligent, precise and sensible use of current best evidence encouraging good clinical reasoning when considering care of individual patients. Reassuring then from the qualitative summaries extracted from nursing staff was a consensus with the literature on the importance of evidence-based practice and, hence, research utilisation.

According to authors such as Burns, Dudjak and Greenhouse (2009) the nursing profession works hard in its role in the reduction of healthcare errors. Clinical and

organizational expertise and opportunity allows nurses to recognize system-related errors and help correct those errors. Simplifying and normalising processes, building backup systems, analyzing operational design, and executing as a team are measures that can be taken to improve system reliability and, therefore, ultimately prevent errors and adverse events. Many authors in the past (Champion & Leach, 1989; Closs & Cheater, 1994; Haynes, Sackett, Gray, 1997) have highlighted the importance of measuring quality outcomes in patient care during research utilisation and, hence, any reduction in patient error trends. Nurses from this study generally perceived patient incident reporting as a valuable tool in the identification of gaps in clinical care and prioritizing where new evidence might be utilized, however, they did not believe as individuals they were encouraged to look at research to address issues. Many were uncertain if the organisational strategies put forward to address these issues were based on new evidence. ‘I see the organization put forward solutions to risks, but we never know where these came from, we are never shown the source’, stated one nurse from focus group one. This finding reinforces the recommendations from Burns et al. (2009) that there is a need to address disparities between nursing research findings and the implementation of findings into clinical practice.

Further supporting the findings from Burns et al. (2009) were risk management discussions on the concept of sentinel event reporting where unexpected occurrences involving death or serious physical, or psychological injury, or the risk thereof would occur with a patient. Many nurses believed it was only the serious problems labeled sentinel events where they did receive feedback on evidence to rectify the issue. One nurse from focus group two states, ‘I know my organisation takes serious actions with sentinel events and I trust the solutions they put forward, as I know how much time is dedicated to it. We are never involved in the process of finding the solutions though’.

Nurses in this study could not guarantee that agreed-upon levels of excellence and established norms within their clinical units were evidence-based. They could not state with confidence that standards of nursing practice or the written statements of the expectations of the care the nurse should give—process standards—came from the best available evidence. Timmins (2008) indicates that without an effective and

recognised audit tool in place to evaluate organisational changes, there is likely to be a decreased compliance with the best practice criteria, a reduction in evidence use and, ultimately, research utilization.

One very interesting finding stemming from qualitative findings could best be described as *bottle necking*. As indicated by Hall & Walton (2004) who stressed the role of a healthcare organisation in minimizing information overload and the qualitative findings supporting the organizational concept proposition showing information overload as an issue at an organizational level, so too does this factor appear to transcend into the individual nursing concept. As one nurse from focus group five stated, 'I think we are simply overloaded with too much information, we can't absorb it all'. Several nurses then suggested that the quantity of information being thrown at them was daunting. One nurse in focus group 1 stated, 'Yes and it can be overwhelming having to absorb a lot of information from different sources'. Further another nurse from focus group 4 said, 'I just feel like there is too much information for me to handle'. This factor has not been discussed widely by authors in the literature (Evans & Pearson, 2001; Baxter & Boblin, 2008), although Rogers's (2003) theory of innovation diffusion does allude to this factor when considering persuasion. If nurses become confused about what to implement, then persuasion would be difficult.

Descriptive statistics support the above summation indicating that nurses believed the amount of research findings being produced is overwhelming. This finding was heavily related to the faith nurses had in externally-derived evidence. Results from principle component analysis clearly indicated that nurses would like to use research evidence that they had produced themselves. This could be related to the fact they do not trust external sources or are confused about which source to utilise. Factor analysis confirmed this ($P = .625$) indicating that nurses were overloaded with information. Factor analysis also showed a relationship between change management practices and the adoption of new evidence indicating that new innovations are perceived as risky by nurses. Correlation analysis also indicated strong relationships between these two variables. Brown et al. (2009) support this notion and, in addition, believe access to this newly-produced evidence is becoming an issue—with the introduction of new technologies only exacerbating the problem.

An interesting finding stemming from factor analysis was a negative correlation indicating that where research became less appealing to nursing, their confidence in using research would also decline. The identified barrier of time and knowledge ($P=.621$) also further confirmed those themes identified in focus group extracts and the literature. Very evident in quantitative findings was the faith nurses had in research. Authors like Baxter and Boblin (2008) place most of this lack of faith or trust in the fact nurses have never been exposed to research in the right way. Innovation diffusion models like Rogers's (2003) have yet to be utilised in nursing and authoritarian approaches will only create a negative persona towards research utilisation.

Findings related to the individual nursing concept have confirmed this proposition as a factor that can affect the research utilisation practices of nurses.

5.7 Proposition 7: The concept that communication will affect the acceptance of research utilisation by nurses

Many nurses described varied communication patterns that occurred when considering knowledge utilisation. Three main concepts for knowledge utilisation practices were apparent: (1) nurses described an awareness of new research going on in their domain of practice either because there had been a formal communication through their ward or they had attended a conference. Most felt that this was a common form of learning about new research. As one nurse from focus group five stated, 'I usually become aware of new research publications because I know there is something happening in that area'. This perception was supported by a senior nurse from focus group 2 who outlined, 'When you work in a specialty field such as ours you tend to know what is going on around you in the research world and await published outcomes'. Hansen and Severinsson (2009) indicated in their research that nurses regarded inter-professional communication as an amphitheatre for knowledge revolution, where nurses share successes and failures with their less experienced colleagues. In Rogers's (2003) innovation diffusion theory detailing communication and, in particular, an awareness of communication is fundamentally important as the receiver must know the information flow is occurring. The problem identified by nurses in this study was that awareness did not always exist.

(2) Qualitative data also indicated that nurses felt they learnt more about new evidence by watching other nurses trialling or implementing a new piece of research. A nurse from focus group one highlights this point by advising, 'I truly only learn about new evidence when it is shown to me by other nurses who are undertaking new activities, I am a visual learner'. This was further supported by a nurse in focus group six who states, 'We truly only become aware of new evidence in our workplace when somebody makes an effort to implement a new activity'. Hansen and Severinsson (2009) in their discussions advise of similar patterns of interaction in nursing, as well as the wealth of knowledge gained from such interaction. They suggest that as nurses learn and reflect they do so in groups, not as individuals, and view this as the building blocks to better learning within organisations. Further, Hansen and Severinsson (2009) outline that communication like this with those outside of the nursing profession, such as doctors, may help nurses to conceptualise and articulate knowledge already present.

(3) A third interesting factor identified by nurses was coded in this study as 'principles knowledge'. Here, nurses felt that with more structured guidelines or a detailed set of principles, nursing behaviour may improve if knowledge transfer processes were documented as a form of corporate governance. Contrary to this belief Hansen and Severinsson (2009, p. 152) outlined that 'The organisational health care culture is strongly influenced by professional values and ethics, but as culture and behaviour differ among groups and units, it is difficult to establish and implement common visions and objectives including political, managerial and clinical perspectives'.

Nurses participating in this study wanted the profession to ask more questions of practice and challenge one another to improve, however, in doing so ensure the original source of information is utilized. Failure to do so was perceived as a risk and could lead to a misunderstanding of what was originally intended. Bunch (2000) describes the potential for disrupted information flow in three phases. (1) Firstly she considers nurses wait for the arrival of evidence to guide decision making; (2) secondly, she believes nurses await clarification and; (3) nurses await advice to discontinue or continue down the new path of evidence transition. Here, Bunch (2000) alludes to potential sources of communication breakdown or

miscommunication. External benchmarking by many nurses was considered vital as nurses valued relationships and called for an understanding between all nursing divisions and an investment in the development of these relationships. It was perceived that if they were to move forward as an evidence-based profession then the relationships similar to nursing bodies outside of their comfort zones were fundamental.

Hansen and Severinsson (2009) confirm this opinion expressed by this study group, however, they take this a step further indicating that these relationships should transcend into other professions as well; and if they do not, complications with knowledge transfer could arise. Further to knowledge transfer was a feeling from participating nurses that they needed to build on what has been done already, rather than creating something from the ground up. Nurses felt that often in communication processes this information was missing and they were often left sceptical as to whether they were reinventing something unnecessarily.

One common factor found in the literature (Hansen & Severinsson, 2009) and confirmed by participants was that of effective collaboration. Nurses in this study viewed themselves as effective collaborators, particularly with benchmarking. Coinciding with this was the issue of approachability and accessibility which appeared to have major impacts on knowledge sharing and communication in the clinical setting.

Descriptive statistics indicated that nurses really were not sure if they were always made aware of new research and when they were made aware they were often bombarded by multiple sources, making clinical reasoning even more difficult. When literature was made available it was never really compiled in one place. Also, if nurses needed to seek clarity on a given piece of evidence there was confirmation they often felt isolated from knowledgeable colleagues with whom to discuss findings. These findings are very supportive of those found in the CURN project (1981) and also mimic those found in studies conducted by Dunn, Crichton and Roe (1998); Estabrooks et al. (2003); and Hicks (1995).

Results from factor analysis, particularly table 19, indicated that the real time access nurses had to evidenced-based materials was clearly lacking. Organisational issues such as lack of computer access (Lee, 2004) or investment in subscriptions to databases have been mentioned by nurses in this study and have been confirmed by authors Closs and Cheater (1994) and Champion and Leach (1989) who have indicated that better investments are required by organisations to allow improved access to evidence-based materials. Nurses appear informed of research outcomes at face value; however, they have difficulties in interpreting findings associated with these outcomes. Often this could be due to misleading information which in this research accounted for 12.6% of the total variance of factors related to communication. What is clear is that nurses definitely struggle with the interpretation of results in the formats that are presented in the literature as inferred through quantitative findings and well-supported by the literature (Dunn, Crichton & Roe, 1998; Funk, Tornquist & Champagne, 1995; McCleary & Brown, 2003).

Clear from a comparison of all findings related to communication, the proposition that communication will affect the acceptance of research utilisation by nurses has been confirmed.

5.8 Proposition 8: The concept that nurses are currently laggards in research utilisation

The literature advises that nursing laggards are likely to be those ‘most unwilling to change, are “traditional” and oriented towards the past, often have a peer group with similar values and opinions, but are isolated from the mainstream’ (SitZIA, 2002 p. 236). This proposition was an interesting one as nurses in general felt that the majority of research processes they had been exposed to were not user-friendly and, in fact, complicated the progression of evidence-based practice adoption. Whilst it was clear from focus group data that some of these groups of nurses were in the early majority category for the adoption of some practice and at times were even innovators, there was some evidence that demonstrated a late majority to laggard category, because they were usually forced to be late adopters (Rogers, 2003). As an example, it was felt by some nurses that due to the inexperience and freshness of most of the nurse educators, they lacked self-confidence and could not educate the next nursing generation on research knowledge utilisation. Some felt when student

nurses or new nurses entered the practice environment, they were faced with organizational behaviours that were task oriented and inhibit independent decision-making, particularly related to new research evidence. Some nurses lacked confidence in colleagues; particularly new nurses, as they knew the information they were currently using to guide practice lacked substance, and feared they would be led astray.

Findings from research conducted by Squires, Moralejo and LeFort (2007) confirm the above perceptions held by some nurses, suggesting that nurses use clinical governance measures to guide their practice. However, Squires, Moralejo and LeFort (2007) also explain that the simple existence of both corporate and clinical governance is not sufficient to translate research into nursing practice. According to Squires, Moralejo and LeFort (2007) individual nursing factors and organizational factors related to understanding and use of clinical governance also play key roles. Accordingly, shifting research evidence into practice requires cautious interplay between the organization and the individual. Corporate and clinical governance may, therefore, be the bond through which this occurs (Squires, Moralejo & LeFort 2007).

One rationale also put forward by nurses in this study was that research is not core business, because patient care as a priority will always come first. This prioritisation has restricted any research utilisation desires and, therefore, has posed as a major contributor to poor research utilisation practices. What was not understood by the nurses in this study was the role new evidence may have in improving the available time they had to offer high standards of care. Brown et al. (2009) and McCloskey (2008) support the notion that nurses do not truly understand the true promise that research has in assisting with nursing priorities—for example, improving time management by making certain tasks more efficient. From this perspective there is evidence that nurses are laggards when it comes to utilising valuable research findings, however, it would be dangerous to label all nurses as laggards, particularly those participating in this study. It would be more appropriate to say that based on findings from this research there is a range of nurses doing some good work with research evidence, however, there are inconsistencies across the profession and more investment needs to be made to bring all nurses to this standard.

This was very evident in the qualitative data sets related to organizational influence, social concept, economic, innovation barriers, and even individual nursing issues. What is clear is that a multitude of factors can contribute to a slower uptake or even prevent research utilisation (Sitzia, 2000). As an example detailed in the discussion on organizational concept, if an organization is not research-focused and does not invest the resources into nursing research allowing nurses time to participate in research utilization practices it is only logical the speed at which an innovation is utilized will be slower (Rogers, 2003). As another example detailed under social concept or equally an individual nurse concept, was when nurses deemed themselves as unskilled in research utilisation and, therefore, did not possess the confidence to proceed with the adoption of an innovation.

Other noteworthy barriers were the fear that any change to practice may impact directly on the patient due to a lack of confidence in nurse ability to implement the new innovation. Leadership was also referred to on occasion as a barrier and would often control the network of evidence transfer and minimize staff exposure to external sources. On top of this, if the change management strategies adopted were ineffective then adoption would likely be delayed.

The relative advantage (Rogers, 2003) to which a nursing innovation was perceived as better than the approach it supersedes was certainly an issue in this study. As an example, in order to assume whether there are risks with innovation, those involved with change needed to have confidence that the organisation would reward success and tolerate failure. Perception in this group of nurses depended on a wide array of factors, not least the nursing profession. What was clear was that other professions may well have different perceptions of the benefit of an innovation depending upon the perceived impact in their own professional practice, i.e. a nurse in focus group three states, 'Even if we find high level evidence it is unlikely the MOs will support the change, they don't like being told how to do their jobs'.

Education was also deemed to be important; those nurses who have an understanding of the concepts of evidence-based practice and who are familiar with the concepts and skills of critical appraisal may well perceive the benefit of an innovation differently to those who do not have those skills (Sitzia, 2002). What is

clear is that nurses require education and encouragement, plus a good demonstration of how to utilise research findings and implement them into practice. Angel, Duffey & Belyea, (2000) promote an evidence-based approach for evaluating strategies to improve knowledge acquisition and critical-thinking performance in nursing students. These authors encourage an early repetitive education program in nursing and one that will further disseminate outside of pre-registration programs.

Many factors (Table 4) influence the judgment as to whether or not a new intervention is 'better' than an existing one. The advantage may be to the nurse rather than to the patient (it may save time or cost or effort, or it may give security or reassurance to professionals) or vice-versa; the innovation might be an advantage to one group of nurses or health professionals but not another, and so on (Rogers, 2003). The key message from this group of nurses was that simple is best. This theme complements recommendations from the literature (McCloskey 2008) that advocate nurses need to understand, be personally compatible with, be able to observe, and test research utilisation models they are exposed to. Information technology or the current lack of exposure was a key concept generated by this nursing group. This factor was viewed by many nurses as a barrier to adoption which further supports the theoretical model put forward by Rogers (2003). Quantitative findings indicated nurse were less likely to adopt new technology through fear (BS# $P=0.618$). Findings by Gururajan, Moloney and Soar, (2005) certainly confirm that this fear is genuine and accords with Rogers (2003) and Sitzia (2002).

When further considering the quantitative data, nurses did not see themselves as slow to adopt evidence and, generally, they agreed they adopted change when necessary, but this was inconsistent. This confirmed the overall consensus from qualitative data, even to the point where more senior nursing leaders were not perceived to lead innovative change. Based on a combination of findings from qualitative data, the literature, and quantitative data, it is clear that in the majority of circumstances nurses are not laggards when it comes to research utilization but, rather, there are barriers that can significantly delay attempts to raise standards of practice. This proposition, therefore, cannot be confirmed, however, data does

indicate that nurses need to develop more confidence and offer a more consistent approach to research utilisation.

5.9 New Proposition 9: The concept that cultural background will affect the acceptance of research utilisation by nurses

After a more in-depth analysis of qualitative data, an emerging concept, namely, influence of cultural background, became clear. Interestingly from focus group discussions was the resounding impact that culture may have on research utilisation practice. There was awareness in this very observant group of nurses that healthcare was evolving from a multicultural context and this should be considered when introducing evidence. The rationale put forward here was that different cultures often learn in different ways, and should perhaps be considered more often rather than being shunned. It also highlighted that in this ever-changing and expanding healthcare environment we may not truly understand the true impact that cultural diversity may have on research utilisation. Some nurses felt that nursing had a civic duty to investigate this aspect and needed to demonstrate a commitment to cultural respect.

Only a handful of studies have investigated the concept of culture and its influence on research utilisation (Davies et al. 2000; McCormack et al. 2002). These authors confirm that sustaining evidence implementation momentum during a shift in culture can pose challenges. They highlighted the fact that translating research evidence into practice is a priority and requires a shift in organizational culture. These authors, however, refer to culture in a different context, that is, as the current climate and norms within an organization, rather than the ethnic background of staff or patients. Therefore, it was difficult to confirm this finding with the literature as no one appears to have studied this concept. This newly-identified concept is separate to those identified in the literature and requires further testing and confirmation. It is recommended, through the use of ethnography, that this concept be further explored to enable the true impact that cultural diversity may have on research utilisation can be better understood. As this concept was identified in late confirmatory data analysis it was not included in the developed survey questions and, hence, there is

no quantitative data to support further support these findings. This finding was, therefore, not confirmed.

Table 24: Summation of proposition acceptance

Proposition	How Accepted	Support	Comment
<u>Proposition 1:</u> <u>Patient context will affect the acceptance of Research Utilisation by nurses.</u>	Qualitative evidence. page 158 Quantitative Evidence. Page 150	Focus Group 3 Focus Group 1 Table 18: Factor analysis. AD# P/ AE# P/ AF# P	In combination with derivatives from the literature, evidence from this research was overwhelming.
<u>Proposition 2:</u> Social context will affect the acceptance of Research Utilisation by nurses.	Qualitative evidence. page 161 Quantitative Evidence. Page 147	Focus Group 5 Table 16: Factors M# and N#	In combination with derivatives from the literature, evidence from this research was strong.
<u>Proposition 3:</u> <u>Organisational context will affect the acceptance of Research Utilisation by nurses.</u>	Qualitative evidence. page 163 Quantitative Evidence. Page 151	Focus Group 1 Focus Group 3 Table 19: Factors AM#, AN#, and AQ#	In combination with derivatives from the literature, evidence from this research was overwhelming.
<u>Proposition 4:</u> <u>Economic context will affect the acceptance of Research Utilisation by nurses.</u>	Qualitative evidence. page 165-166 Quantitative Evidence. Page 155	Focus Group 1 Focus Group 2 Table 21: BK#, BL#, BM#, BN#, BO#	In combination with derivatives from the literature, evidence from this research was overwhelming.
<u>Proposition 5:</u> The innovation itself will affect the acceptance of Research Utilisation by nurses.	Qualitative evidence. page 167 Quantitative Evidence. Page 148	Focus Group 5 Focus Group 2 Table 17: W#, X#, Y#	In combination with derivatives from the literature, evidence from this research was strong.
<u>Proposition 6:</u> The individual professional will affect the acceptance of Research Utilisation by nurses.	Qualitative evidence. page 168 Quantitative Evidence. Page 148	Focus Group 4 Table 20: M# and N#	In combination with derivatives from the literature, evidence from this research was overwhelming.

Proposition	How Accepted	Support	Comment
<u>Proposition 7:</u> <u>Communication will affect the acceptance of Research Utilisation by nurses.</u>	Qualitative evidence. page 168 Quantitative Evidence. Page 146	Focus Group 4 Focus Group 2 Focus Group 3 Table 15: A#, E#, G#, H#	In combination with derivatives from the literature evidence from this research was overwhelming.
<u>Proposition 8:</u> <u>Nurses are currently laggards in Research Utilisation.</u>	Qualitative evidence. page 122 Quantitative Evidence. Page 146/ 148	Focus group 2 Focus group 3 Focus group 6 Table 16: W# X# Y# Table 17 M# N#	In combination with derivatives from the literature evidence from this research was sound.
<u>New Proposition 9:</u> <u>Cultural background will affect the acceptance of Research Utilisation by nurses.</u>	Qualitative evidence. page 126	Focus Group 1 Focus Group 2 Focus Group 3 Focus Group 5 Focus Group 6	Evidence produced by this research appears sound and warrants further consideration and exploration

5.10 Proposed research utilisation models

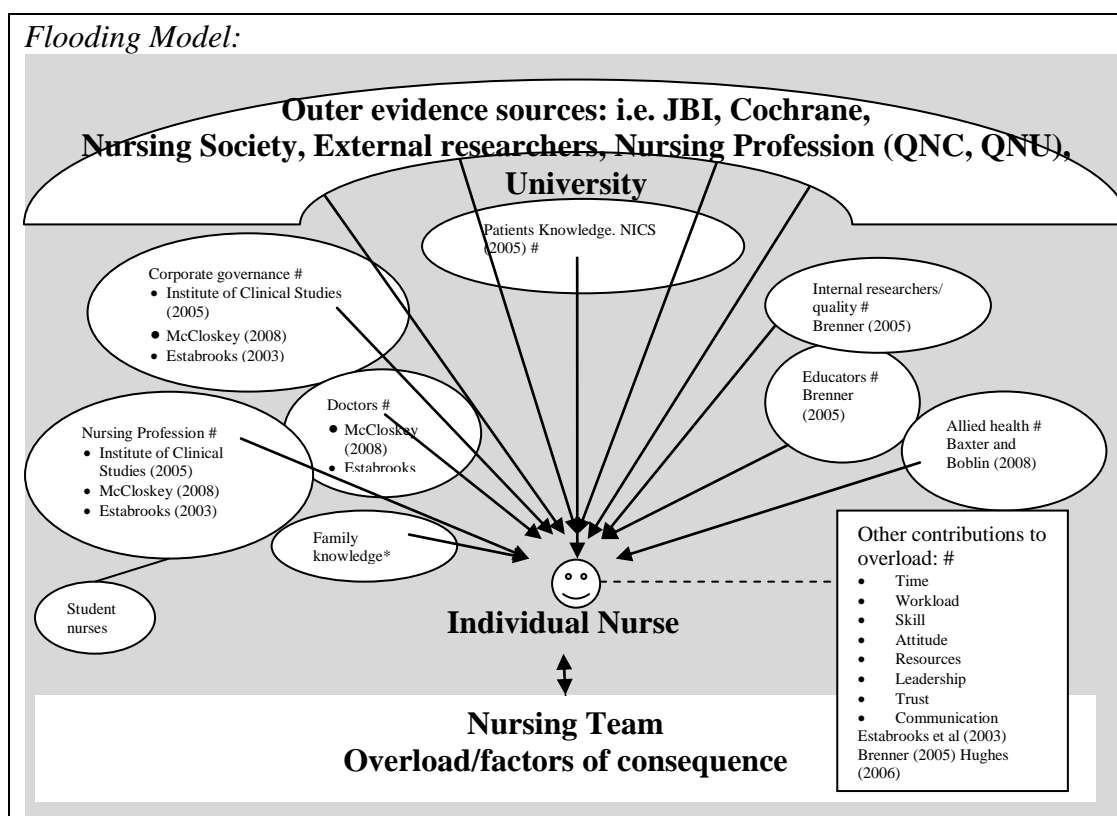
Based on research findings and further confirmation with the literature a diagrammatic representation of major factors influencing research utilization was put forward. One interesting concept stemming from initial discussions with nurses was the issue of information overload. Figure 13 best represents the perceptions of nurses who indicated being bombarded by sources of information led to overload. These sources were based on qualitative data extracted and from the literature.

In discussions with nurses during feedback on the progress of the research study one nurse from a Queensland renal unit described this information overload a flooding model, hence the depicted model in Figure 13 which was confirmed by Queensland nurses was given the name 'Flooding Model'. Further to these informal discussion during debriefing with staff participating in the research believed much of this information needed to be controlled or held back, being released to staff more slowly. Hence the term Spillway model was agreed by staff to best reflect the model represented in figure 14.

Figure 12: Perceived research utilisation model by nurses

Model Key

Literature Source	**
Data Transcripts	*
Both	#



As indicated by research participants and confirmed by Hughes (2006) if distrust towards new evidence sets in (particularly because nurses have been set up for implementation failure) then nurses are less likely to want to engage in research. By having a large number of sources dictating what new evidence should be a priority nurses are destined to become confused about where to start and, out of frustration, are less likely to try it. This issue then links the derived themes that indicate a lack of confidence when engaging with research (McCloskey, 2008; York, 2008; Gifford et al. 2007). Findings in this research indicate that this is a genuine risk to the future of research utilisation in nursing and if nurses are not given the opportunity to grow in confidence and experience the successful implementation of a new innovation to practice, they will likely distance themselves from research utilisation.

Figure 13: Nursing research utilisation model; Spillway Model

Model Key

Literature Source	**
Data Transcripts	*
Both	#
Quantitative factors	++

This model incorporates findings from quantitative analysis that confirm sources dictate what new evidence should be a priority for nurses.

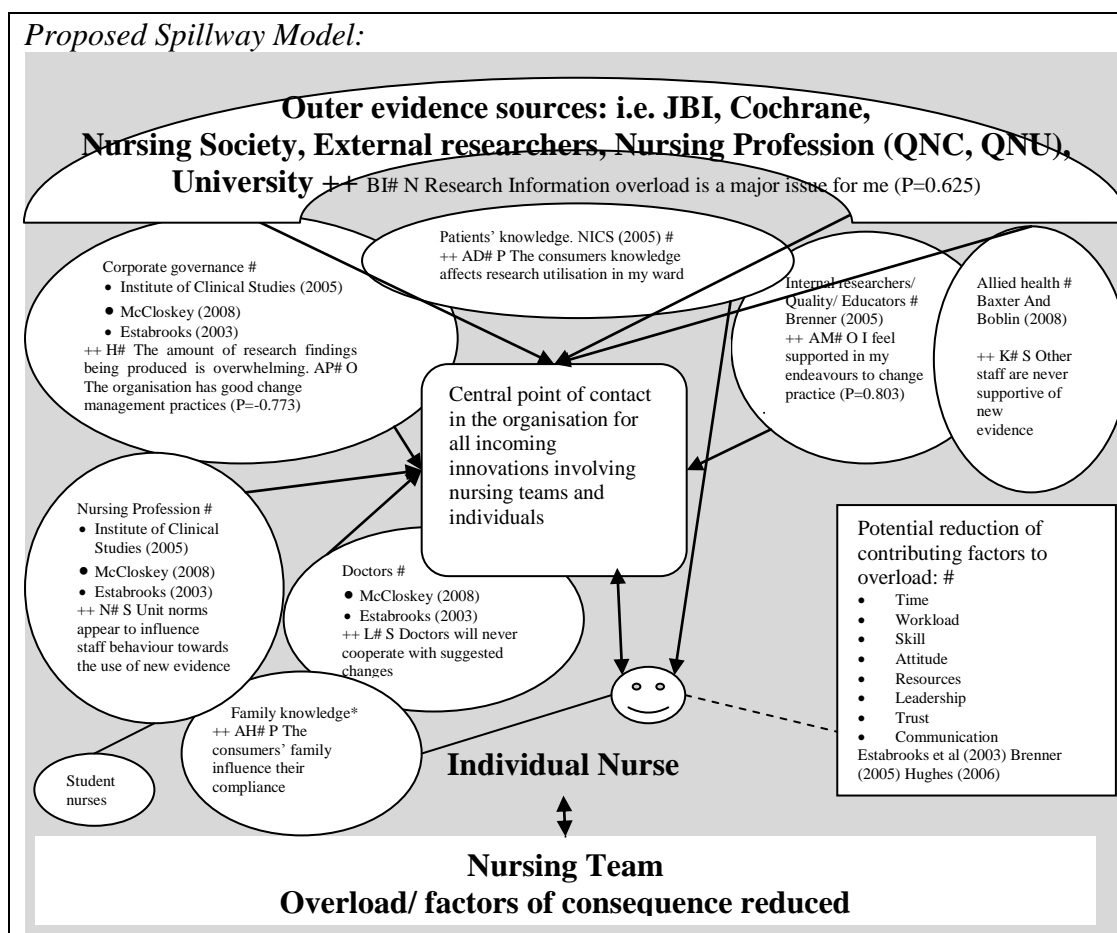


Figure 14 depicts how if trust towards new evidence is to develop (particularly when nurses are supported and shown how to succeed with research implementation) then the overload of information needs to be controlled so that nurses can see a project through to fruition. Realistic approaches need to be adopted by nurse leaders and other associates so that nurses can achieve successful and rewarding outcomes based on evidence-based practice change management strategies. As indicated by research participants and confirmed by Hughes (2006), nurses would be more likely to want to engage in research if they had tasted success. By controlling the large number of sources dictating what new evidence should be a priority, nurses could remain

focused on common goals and, out of accomplishment, continue down a path of research. Nurses would only grow in confidence when engaging with research and then could share these successes with others in the profession, thus promoting a more positive culture towards research utilisation practices (McCloskey, 2008; York, 2008; Gifford et al. 2007). Based on the outcomes from this research, the Spillway model represented in Figure 14 is recommended as a strategy to improve the uptake of research utilisation practices by nurses.

In comparison to Rogers's (2003) innovation diffusion theory which suggests five attributes of an innovation, namely, relative advantage, compatibility, complexity, trialability, and observability it was evident in this study that nurses wanted to understand the relative advantage, however, due to documented communication issues such as uncertainties of methodology ($P=0.587$), and non-justified conclusions drawn from the literature ($P=0.754$) it was demonstrated that nursing lack faith in any relative advantage the evidence stemming from the literature may have. A strong emerging factor ($P\#$) stemming from table 17 indicates that nursing in Queensland often does not view the produced research as compatible, i.e. $P\#$ I Research being conducted is not relevant to nursing practice ($P=0.731$).

Research utilisation models made available to assist nurses with implementation were deemed as complex and, overall, nurses did not have a great understanding of how to utilise these and it was evident from discussions that they had no desire to do so. Examples from Table 20 support this finding. Factor AY# ($P= -0.540$) indicates nurses do not have a good understanding of research utilisation models, and factor AZ# indicates nurses do not find research utilisation models to be nurse-friendly ($P= -0.940$).

As per factor Y# of Table 24 most nurses ($P= 0.817$) viewed new innovations as risky to patient care, which could directly affect the trialability of any new innovation. Also as indicated above, the lack of faith and confidence nurses have in research findings may be a contributing factor. The nurse's ability to observe findings—or for that matter participate in the generation of findings—was documented as lacking in this study. Factors from Table 15 supporting this claim

include factor A# Research reports articles are not readily available ($P=0.994$); and factor D# the relevant literature is not compiled in one place ($P=0.991$).

5.11 Diffusion of innovations theory

An innovation or a piece of research utilisation presents nursing with a new alternative, a new avenue for solving problems. Indecision occurs when choosing whether the new option is superior or inferior to current nursing practice. Rogers (2003) suggested that knowledge does decrease ambiguity about a new idea. Therefore, knowledge about the innovation would be sought by nurses to cope with the uncertainty created by a new piece of research. Indications from this study suggest that nurses are not well informed of proposed changes and many nurses felt their organisation adopted an authoritarian approach. This leads to a lack of relevant information necessary to assist nurse clinical reasoning. Knowledge is necessary for nurse reasoning and decision making and, therefore, central to professional nursing practice. Finding a balance between insufficient and more than sufficient information is a challenge in health, but a balance must be found.

Elements of Rogers's theory most significant to this study were the perceived attributes of the innovation, and included the concepts of relative advantage, compatibility, complexity, trialability, and observability to help explain recognised barriers noted within this research. Attention paid to these attributes yielded the most influence over notable research utilisation.

Relative advantage

Rogers (2003) suggested that if members of a social setting such as nurses could comprehend the relative advantage of an innovation such as research evidence, this would positively encourage its rate of adoption. As noted by research participants from this study, if a research innovation included some economic profitability, lower initial costs, and a decrease in discomfort for patients, savings in time and effort, and/or immediate rewards, the proposed change would more likely occur. Results from both focus groups and surveys revealed that nurses found the main benefits of

new research innovations were the improvements to patient care. Further, if they are to see an advantage from any research they would prefer home-grown research. As indicated in Table 17 (Factors of innovation concept), results clearly indicate that nurses would like to use research evidence that they produce themselves.

The advantage and liability of any adjustment to research utilisation practices should first be considered to determine their relative advantage. Benefits based on this research would include a reduction in discomfort and fear when engaging with research activity, savings in effort and time, and other incentives (Rogers, 1995). Nurses in the current study and other researchers (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Closs & Cheater, 1994; Estabrooks et al. 2003; Funk et al. 1991; Funk, Tornquist & Champagne, 1995) have cited a multitude of barriers for the utilisation of research in the nurse clinical concept. Common factors have included the ability of nurses to read, interpret and clarify reported research. Nurses have been recorded as devaluing research, particularly its applicability to clinical practice. Researchers have documented lack of time, limited authority to implement evidence-based practices, lack of support and an unwillingness to change as significant contributing factors to poor research utilization practices. Nurses have reported access to evidence-based materials as meager, which has been linked to a lack of organizational support and investment in research as core business (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Closs & Cheater, 1994; Estabrooks et al. 2003; Funk et al. 1991; Funk, Tornquist & Champagne, 1995). Based on face value, one could conclude that nurses see very little relative advantage in engaging with research adoption, however, one must delve deeper into this issue to gain a more accurate depiction of the true value research has to the profession. Nurses from this study did see great value in utilising research and in the majority of cases wanted to do so. However, for varying reasons such as time, workload, or lack of organisational resources or support they were unable to engage in the practice.

Compatibility

Rogers (2003) suggested that if an innovation is harmonious with cultural and social values, the needs of the situation and previously introduced ideas, the innovation would be acknowledged more readily. Needs identified from the focus groups and

surveys for this research help inform the development of a nurse decision support system. If nurses are not well-informed and compatibility is not considered, then implications for nurses could be catastrophic as previous research findings disseminated to nurses at administrative levels and practice levels of nursing have often never been deciphered or filtered. Differences in the perceptions of nurses would appear apparent in their attitudes, use of research, and availability of time to research, and support to conduct research (McCloskey, 2008). Nurses need to be able to utilise research evidence within their own educational preparation. According to McCloskey (2008), a larger percentage of nurses with a postgraduate degree are able to critique and evaluate research and, therefore, able to work toward translating evidence into practice, however, what is noticeable from this research is that skill does vary greatly and this is not a given. Major findings from this research indicate that nurses feel a large percentage of the research evidence being produced is of little value. Hence, more targeted research that has improved compatibility is warranted.

Complexity

According to Rogers (2003), innovative awareness can be conceptualized on a continuum of complexity versus simplicity. His theory attests that some research innovation may be easy to understand and simple to adopt, whereas others may pose more difficulty. Rogers's theory hypothesises that if a research innovation is considered to be complex, the adoption rate will likely be lower. Emphasis on research utilisation by nurses in this study, such as fast, easy access to new information, and the ability to find and decipher relevant information indicates a high level of complexity in research utilisation practices. Ensuring thorough training and continued clinical support so that nurses are well-prepared in finding and interpreting new evidence will ease the progression of use in everyday practice. As an example, from this research (Table 20: Individual Nursing Concept), research utilisation made available to assist nurses with implementation were deemed as complex and, overall, nurses did not have a great understanding of how to utilise this and it was evident from discussions that they had no desire to do so. Factor AY# ($P = -0.540$) indicated nurses did not have a good understanding of research utilisation

models, and factor AZ# indicated nurses did not find research utilisation models to be nurse friendly ($P = -0.940$).

Trialability

Rogers (2003) conjectured that the capability to test an innovation would enhance adoption rates. Trialability in the context of this study would lessen nurses' uncertainty about the innovation. If organisations were to allow a simple trial and nurses could see firsthand the relative advantage, compatibility, and see firsthand the level of complexity then perhaps the chance for adoption may increase. As detailed, nurses perceived organisational research culture as poor and, hence, trialability would be difficult. Also confirming the proposition that organisational factors can influence trialability were findings related to change management resources. Overall resources for research were detailed as inadequate for conducting research which had an equal relationship with the organisations change management practices. Lack of time within an organisation was also a factor restricting trialability of new research. This was inversely related to the authoritarian approach towards research. Related to this authoritarian approach were factors indicating nurses strongly believed hospital executive would not allow implementation.

Observability

According to Rogers (2003), the observability of any research innovation, as perceived by members of a nursing social system, is positively related to its degree of adoption. Results from this mixed method testing have demonstrated that research utilization by Queensland nurses was perceived positively; however, in a large number of instances the observability in the broader context of the profession demonstrated little scope to see what other settings closely related to their own were doing. A clear finding stemming from results within social concept was the element of fear as a barrier towards research utilization. Where implications for practice were unclear a negative correlation advises that the fear to use new research would rise. Other strong factors appearing in this data set indicate that the support from other professionals in a social setting is generally perceived as poor and, hence, the observability of nursing from those of other professions may also transcend as being

poor. The confirmed proposition that social concept exerts influence on research utilisation practices by nurses strongly correlates with a reduced observability across the state of Queensland.

Summation

Factors such as time, workload, organisational influence, social concept, nursing knowledge and skill, and patient factors have been further confirmed with the literature. It is evident these factors will always need to be considered in any nurse research planning. Newly-discovered factors such as the role of family influence and cultural concept, particularly from the perspective of an overseas trained nurse, warrant further investigation and appear to have a strong influence on research utilisation practices.

5.12 Study limitations

Due to constraints in research design and tight timelines, factors (cultural background and family influence) did emerge from deep qualitative analysis after the development and distribution of the survey tool. This occurred because this research intended to utilise qualitative findings as the primary source of confirmatory evidence in proving or disproving propositions found within the literature. To ensure this, several iterations of thematic analysis were conducted over a longitudinal period to ensure all emerging concepts and themes were captured. These new propositions were, therefore, not confirmed through a process of quantitative analysis, particularly factor analysis. Although this minimizes the strength of these factors as findings, much of the synthesis of focus group findings does give unequivocal evidence to these findings.

Chapter 6: Conclusion

Major factors drawn from both the results and discussion chapters were further considered against the literature before concluding statements were made. This was done to ensure a thorough confirmatory exercise. The majority of conclusions were focused on research utilization practices confirmed or unconfirmed with the literature and any newly-arising factors found outside of the literature by this research.

6.1 It was clear research utilisation practices encouraged nurses to provide the highest standards of care for their clients. This is not only true for individual nurses, but for the entire social concept of nursing. The utilization and awareness of research by the nursing profession is a platform for academic and professional clinical reasoning within nursing practice and is vital in providing proficient, skilful, and continuing standards of nursing care.

As confirmed by the literature (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003), nurses in a variety of healthcare settings must continue to attain knowledge and improve skills by making time available for research utilisation. In making this time available it is palpable that nurses need to have the capacity to interpret research findings, critique research studies, and transfer acquired research knowledge between themselves and nursing colleagues. It would also appear to be of vital importance that nurses understand the full implications of using and not integrating evidence-based practice processes into their practice.

Nursing research has been well validated, not only by this research but also an extent source of previous research as a vital component to a nurse's role as it addresses issues that are important to the discipline of nursing (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003). Nurses must, therefore, be conscious of the use of research findings in their practice and the place the growing body of evidence has in the cyclic nature of continuous quality improvement. The acquisition and application of newly-available evidence is very important in contributing to necessary ongoing personal and professional development of the individual nurse and the standards of patient care they provide.

Advances in patient care through research become meaningless unless they reach nurses at the point of care which outlines why good knowledge utilisation processes are so vital. Nurses should exploit good research findings if they are to advance the quality of care that they offer to the patient. However, as has been noted with this research study, this flow of information does need to be controlled and preferably prioritised based on the level of importance it has to patient care so as not to cause flooding of information. Although it is essential for nurses to continually update evidence-based knowledge by reading publications like journals (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003) an organisation should still monitor for excess burden and overload.

Unfortunately, there are many barriers that prevent nurses from utilizing research findings even if the suggested spillway model were used, and outside of the proposed model it would still appear necessary to identify and deal with individual barriers on a regular basis. What would appear of value to ensure this does occur is for each unique nursing setting to do their own root cause analysis to determine where barriers may exist. Among noted barriers are (1) organisational influences such as resource allocation and structure; (2) individual nursing issues of time, access, and knowledge; and (3) and social influences such as work cultures and norms, inclusive of leadership styles. These barriers must be identified and dealt with at an organisational level if the nursing profession is to overcome an escalating dilemma in its endeavours to embrace an evidenced-based approach to healthcare.

Solutions, i.e. controlled and filtered flow of evidenced-based information put forward by participants in this study, offer a genuine direction nursing leaders can take in ensuring nurses are not only exposed to necessary research findings, but also ensure nurses are not set up to fail at attempts to introduce new innovations. If nurses are to develop confidence, knowledge and skill in research utilisation practices then results from this research indicate that nurses would like to devote their attention to evidenced-based practice activities that are not only relevant to patient care, but also made achievable by filtering out other external influences that may obstruct their capacity to complete the task at hand. What this research does highlight is that research utilisation such as those proposed by many authors (Crane,

1985a; CURN Project, 1981; Closs & Bryar, 2001; Funk et al. 1991a; Stetler 2001; Kleiber & Titler, 1998; Jones, 2000) should further consider the burden of information overload. Prioritisation appears important when time is limited in a nursing capacity to engage in evidence-based implementation (Brenner, 2005). Strategic choices made by an individual nurse may include reading a research article or taking a course on how to understand or apply research findings.

This research has confirmed that Queensland nurses are affected in similar ways to international nursing bodies when pondering obvious and hidden barriers to research utilisation. This research has confirmed several different contexts as both actual and potential barriers to successful utilisation of research by Queensland nurses. These include the consumer/patient (i.e. knowledge, skills, attitude), the individual nurse (i.e. knowledge, persuasion, decision, implementation, confirmation, time, access), the social setting of nursing (i.e. opinions of colleagues, culture, and ineffective collaborations, leadership), organisational effects (i.e. research infrastructure, and staffing ratios), financial interference (i.e. no research funding), communication breakdown (i.e. verbal, written, and electronic), and the idea or concept itself (feasibility, credibility, accessibility, attractiveness) (NICS, 2005; McCloskey, 2008; Baxter & Boblin, 2008; Estabrook, 2003).

As highlighted by Grbich et al. (2008), nurses who engage in research-related projects campaign for research utilisation and are more likely than other nurses to spread research in practice. Therefore, as indicated by many nurses in this study, those nurses who understand the importance of evidence-based nursing might act as mentors to colleagues who are unaware of its potential impact on practice or the range of information available. As outlined by one nurse in focus group 3, nurses should view the utilisation of research findings as a building platform to ensure nurses have appropriate patient outcome measures in place. Once persuaded to embrace an evidence-based practice stance, nurses can then collaborate to promote research utilisation in the clinical setting. As outlined by Royle and Blythe (1998), nurse mentoring is a viable strategy for assisting the greener research nurse to search for, evaluate, and apply information.

Organisational characteristics, including size, demographics, and centralisation of decision making, have been linked to a variation in research utilisation levels (Brown et al. 2009), however, summations about the importance of identified variables are lacking consistency—perhaps because their consequences vary in atypical settings. Nursing initiatives intended to improve research utilisation have been most successful when ample support was made available (Brenner, 2005) and results from this research indicate that Queensland nurses are strongly urging for additional resources and support.

What is clear is that some of these barriers would be difficult, if not impossible, to eliminate; however, some of the barriers (such as access to information when required) do have solutions. Computerisation has simultaneously become a major contributor to the burden of information explosion; however, technology is also a means of managing it. Already, computer systems enable nurses to access patient databases, research databases, clinical guidelines, and care protocols. The internet has emerged as a formidable medium for information provision and exchange. The next challenge for the software industry is to devise an effective means of organising the available information so that discriminating users can access it effectively (Royle & Blythe, 1998). Organisations need to invest greater capital into the hardware and software platforms through which nurses access information, and ensure access is never delayed. At the same time, strict protocols should be put in place to ensure nurses are not bombarded with information and that the information flow is on the terms of the nurse. As indicated by Gururajan, Moloney and Soar, (2005) nurses with access to the internet can pass on information, and groups of nurses can form networks to share information of clinical interest. Because access and excellence of information have implications for the effectiveness of nurse clinical reasoning, it is important that clinical governance is current (Averis & Pearson, 2003), user friendly (Rogers, 2003) and that clinical guidelines are based on the best research evidence.

An information-friendly clinical setting should link nurses to a variety of information sources, the available nursing and healthcare literature, and other evidence-based wealth. The World Wide Web provides potential universal connectedness for all nurses. The expansion of tools for evidence-based nursing

demands time and resources and should be dependent on additional collaboration among healthcare organisations and academic settings. As communication throughout the global nursing community improves, pooling expertise on national and international levels becomes increasingly feasible as is evidenced by the Joanna Briggs Institute (Pearson et al. 2005). Centres for evidence-based nursing have been established in a number of countries and plans continue down a path of creation to ensure centralised international centres. These centres do and will continue to provide access to critically appraised materials for nurses and are already essentially a filtering mechanism allowing nursing to prioritise evidence. However, not all organisations have realised the true potential such centres of excellence have for the nursing profession and, hence, access to health informatics hardware and software remains a genuine issue.

Outside of the complementary findings that this research has offered in supporting existing research, this study has also highlighted two distinct variables that require further consideration, namely, family interference and the cultural background of nurses. Firstly, it is evident that not only patient concept can affect research utilisation practices by nurses as outlined by NICS (2005) but, in addition, the extended patient family appears to have a direct influence on nursing attempts to engage in continuous quality improvements. Results indicate that direct family interference is a potential barrier worthy of further investigation. A closer examination of the literature (Boise & White, 2004) following this finding indicates the 'interfering' behaviours are located within the context of a family's growing rapport with nurses. Boise and White (2004) indicate that is important for organisational leadership to set the tone for acknowledging the significance of family involvement in the care of their loved ones by modelling recognition of concerns and criticisms as valid and by acknowledging that direct care providers, residents, and their family members have a voice in care decisions. The authors go on to say that such a method has the maximum chance of success in promoting person-centered care and the mutual values required to ensure its successful implementation.

Older, but nonetheless relevant, research by Robinson and Thorne (1984) argues that the families' conduct is an understandable consequence of their disillusionment and

displeasure with developed healthcare relationships. As such, interfering family behaviour represents the most beneficial means of positively influencing their loved ones' healthcare experience. In addition, they set the stage for negotiation to take place between the family and healthcare providers—which leads to mutually-satisfying care. When interference is appreciated within the context of healthcare relationships, it becomes obvious that some of our traditional nursing responses are counterproductive. Findings from this research, therefore, should steer future research that investigates research utilisation issues with the nursing profession down a path exploring the role the extended family may have as an influential factor.

Further to the finding indicating the interference family may pose in the research utilisation process is the impact foreign recruitment of nurses and, hence, various ethnic backgrounds may have in research utilisation. Recruiting processes have not considered the level of education or cultural values of overseas-trained nurses in relation to research utilisation (Bieski, 2007). Bieski (2007) indicates that an increased recruitment of overseas-trained nurses may have a wide range of effects on nurses, and the healthcare system.

6.2 Contribution of new knowledge

Several different concepts have been substantiated in comparison to the literature, including the consumer/patient (i.e. knowledge, skills, attitude), the individual nurse (i.e. knowledge, persuasion, decision, implementation, confirmation, time, access), the social setting of nursing (i.e. opinions of colleagues, culture, and ineffective collaborations, leadership), organisational effects (i.e. research infrastructure, and staffing ratios), financial interference (i.e. no research funding), communication breakdown (i.e. verbal, written, and electronic), and the idea or concept itself (feasibility, credibility, accessibility, attractiveness). In addition, new factors—family influence and cultural values of overseas trained nurses—have surfaced that warrant further examination in future exploration of research utilization within the nursing profession. Most importantly, this research advises that nurses require a more structured filtering mechanism that will decrease the noise arising from multiple sources about innovations and/or research that requires implementation.

The Spillway Model in Diagram 2 is recommended to reduce nurse overload. Most importantly this research has confirmed for the Queensland nursing population that the barriers to nursing research utilization practices that do exist are on par with those found in the international literature. However this research also confirms that if individual nursing contexts like those of Queensland nurses make the assumption that those factors affecting research utilisation worldwide can be applied in a generic fashion to their own settings, valuable concepts such a cultural and family influence may lay undiscovered.

Chapter 7: Research recommendations

Two concepts warrant further exploration and clarification in the context of research utilization practices for nurses: mainly, the interference family may pose in the research utilisation process and the impact of foreign recruitment of nurses and the impact various ethnic backgrounds may have on research utilisation practices. Nurse recruiting processes warrant further exploration as there would appear to be a gap when considering the level of education or cultural influences of overseas-trained nurses. Very little appears to be understood about the actual effects the increasing recruitment of overseas-trained nurses has had and may have on research utilization within the profession (Bieski 2007). Evidence from this research study supports recommendations put forward by Bieski that further research on the topic of foreign-educated nurses is needed. There is negligible research and evidence-based resources on the influence of foreign-educated nurse recruitment and its impact on the nursing profession, particularly cultural influence on research practices. In particular, it is a recommendation from this research that the noted variable of foreign-educated nurses and their potential as both a facilitator and inhibitor to research utilisation in the Queensland and Australian context is further explored.

In summation, based on this research study a great proportion of nurses perceived there were several barriers to research utilisation. Barriers mainly concerned the characteristics of the organization and the presentation and accessibility of research findings. Nurses in this study also reported the lack of knowledgeable colleagues that may offer mentorship and support as a major barrier. To enhance research use within the nursing profession, strategies should focus on organizational issues, including encouraging leadership by unit nurse managers and collaboration between colleagues, allied health staff, and medical officers. Furthermore, user-friendly guidelines in the Australian context, with clear implications for practice, should be implemented. On a methodological basis, the BARRIERS scale (Funk et al., 1991a; Funk et al 1991b) appears to be useful when conducting root cause analysis on the types of barriers to research utilization, however, identified barriers are broad-spectrum, making it challenging to design useful, specific interventions. Based on the realisation from this research that unique nursing settings like those found in

Queensland can recognise barriers found outside of constructed questionnaires it is advised that forthcoming gap analysis within individual nursing cultures should focus on exploring relevant organizational barriers and effective interventions to reduce identified barriers on an ongoing basis. Although those factors explored in this research and the supporting literature are of likely relevance and worthy application, there is still an inherent danger that certain obstructing variables may be overlooked.

Furthermore, clearly identified in this research was the need to explore models that control the amount of exposure nurses are getting when it comes to research. Nurses within this study clearly felt overloaded with information from multiple sources. Research that explores mechanisms of control such as the proposed Spillway model (Diagram 2) stemming from this research is highly recommended. Research that can demonstrate the accomplishment of slowly engaging nurses with controlled research exposure promoting successes rather than failures is warranted. Nurse engagement in research activities needs to be effectively measured in a more productive way allowing for a monitored growth within the profession.

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Appendices

Appendix 1: Focus Group Transcripts

Transcription Data

Focus group 1:

Q: What does EBP mean to you?

EBP is just reassuring the clinical care that I provide on a daily basis is inline with research and accurate information, a reassurance that what I am doing is the latest innovative accurate clinical care, it's new, it's not something that we would be doing 20yrs ago that hasn't been revisited

A practice that is used that you know that is effective, that everybody is using, it is not something that just one person is using and nobody else is

EBP to me is that the practices that we are using is backed up by research and proof that that is the correct way to do something at this time

EBP refers to practice throughout Australia that sets a high standard of care to the patient that justifies why we are doing it through the knowledge that is researched by medical research teams

A combination of what everyone has already said, to deliver safe care to our patients with the knowledge that we have quality research backing, the best outcomes for our patients and benchmarking against other units

I must admit I lack confidence in the information the organization provides as guiding procedures because I have real doubts about where the evidence was derived

Q: How do we apply EBP as clinicians in the workplace?

We have workplace instructions that applies to a lot of the cares that we deliver to our patients, and they are accessible either as a hard copy or on line, and its part of orientation within the unit

The nurses have learned the text books in their classes but they had little or no opportunity to apply them in practice, I think this is why even if we read about new evidence or appealing research it remains difficult to take the next step and do something proactive with it

Q: Is it always on paper?

If you can't find it on paper you can always find it on the computer

I think it needs to be on paper so it is easily accessible, you can't always get access to a computer

Q: Is there ever a circumstance where you may do patient care and it is not necessarily reflected in a procedure manual?

There are a few instances that we don't have instructions for, but it is accepted practice or in the process of being looked at

I could not say for certain that the current guidelines we use for practice are evidence based

Q: how do you think in when that sort of situation arises you know how to apply it, is it a gut instinct?

A future discussion with your other peers and work colleagues within the unit, there may be, depending on what the situation is or the procedure is, there may be some time for emailing other units if it's something outside or commonly done within the unit

I think a lot of our decisions are based on our clinical expertise, and safe practice

And going back to the work place instructions that you started with, theoretically they have a review date, so one would hope that when you are reviewing these policies you are looking at what has changed in the last 12 months to 2 years, look at the gap and look at minor or major changes that need to be made

Q: How well do you think you do that as a group? If a new staff member starts and brings some new information to the table, how well do you think it is received?

I think it is pretty good, as I am new to the unit, and I see quite often that there is a lot of benchmarking with other units, there is a lot of emailing with what does PAH do or what does GCH do, in my previous place that didn't happen so much as they were not committed. I think there is a lot of communication going on with other units

Q: So I guess you are saying there, could you call the renal nurses within your organisation, for example, would you call that a society?

Yes, like a network

I sense then that that society works reasonably well together, and you have some open communication between all different.

Yes

Q: Does anyone have anything to add to how you may apply EBP, even as an individual is there something that you might do differently to other people that you can think of?

From a work place instruction sometimes I think that once you've got less experienced staff, that the step by step things may deviate a little bit, but still following the techniques, and just minor things

I think workplace instruction is probably a guideline, rather a step by step you must do it in this order, and when the instructions are up for the review date we put a lot of trust I guess in the person who is reviewing that the data input is up to date and the latest research in what the other units are doing to come back to make our instructions the most up to date and efficient, to use for the next 2 or 3 years or whatever.

I just trust the guidelines the organisation puts forward, I have never argued against these

And renal nurses as a body of people are very proactive going to seminars and conferences keeping up to speed with education those networking events that that sort of information is been brought back to your unit, there isn't hardly a month that goes by that someone isn't going off to a conference or seminar that brings back, it may only be a small piece of information but it can impact

And it's widely disseminated we all sort or here about for the next few days after someone has been to a conference

And it's not something that is just said as a statement, it is something that is backed up that is taken perhaps to a ward meeting or discussed at a higher level I suppose

Q: Just a hypothetical here, if there was a new source of information that came along, it was something quite innovative, that you hadn't really seen before much in the renal circles but had application, how quickly do you think it would get adopted in the organisation, or quickly do you think it would get adopted into your unit?

Well it depends on our nephrologists as well because they have to have an input into how we're to implement it as nurses, so I mean at the moment we're just getting a fulltime nephrologists that just commenced today so we're a bit up in the air, time wise it does take a while for things to change

I think we receive too much information to quickly, there is just far too much to deal with

But I would then argue that you know probably if you were you know a select influential group within Toowoomba, and there is also very influential nurses around Queensland, and I think you know probably a no name nurse defines how that's, you know an element of renal. I don't think it would be as well accepted or credible as in someone more senior, you know there are several names at PAH for instance, that as soon as you mention their names, you go well they've said that, so let's go ahead and try that, where as I would wonder whether you know, if I have heard this or said this whether it would be accepted and adopted as well.

We also have a new generation of permacaths being manufactured now where betadine solutions are not to be used

Yes but you have got to think that you and I know that, but you pick up a couple of senior nurses and try and tell them that, they'll say this is the way I have always done it, this is the way I will do it. You really have to put it under their noses, I find it gets their back up a little bit, I've been doing this for 20 yrs don't try and tell me how to do it, that's the impression they give you.

Q: With the new innovation, if you had a scale of 0-10, 10 being the early adopters and 0 being late adopter, where on that scale do you think you sit as unit when it comes to adopting that innovative idea

I think our unit is a pretty good renal unit in regards to taking change on board, but I guess like any where you are going to have two or three nurses that don't, that you struggle with

Having said that as well, using the example of permacath dressings we do it in such public place, it's not as if it's behind closed doors or curtains or whatever. It just be that someone has been away on holidays and the change happened while they were away. I think most of us within the renal unit are quite comfortable in saying that this is something that has changed while you were away, we are now doing x, y and z, because of the infection.

I see the organization put forward solutions to risks, but we never know where these came from, we are never shown the source

Q: So if you think of that question from an international perspective, the lagers through to the early adopters, let's say somewhere like Canada is advanced and is always there and really innovative adopting there things nice and early. How quickly does that information flow through to your unit? Are you looking at that international evidence on a regular basis?

We have come across some of that on our conferences, where there is international representation. Is that just RSA?

That would be the main one

There would be home therapies; there are a couple of others

There would be a bit of input in those conferences

Are you talking about a conference standard, or are you talking every day get on the internet and have a look at international standards, because the answer to that would be no.

Q: Maybe there might be a new publication, or there might be a new systematic review that's been conducted or something like that?

Probably less likely, but definitely conferences are the way

A conference is the best way of getting information down to the unit

Q: So you guys are fairly well actively involved in attending conferences?

There is someone attending conferences every couple of months

But to sit down and research and go surfing the net and go looking at articles, and pulling journal articles. No.

No

No

Q: So why is that then?

Well personally I've never been guided or shown how to do that type. I'm used to more sitting within a meeting situation where you've got someone doing a presentation. Just that delivery.

I think if we had access and time at work to use journals, I think they would be utilised more, because I know that as soon as I leave work, you're busy, you've got a life outside of work, and it would be a rare occasion that I would just sit there at 7 o'clock at night and start looking for renal stuff.

Maybe if we had links that were relevant to renal. I don't want to sound like I want to be spoon fed, if there were some easy links to follow within

That doesn't cost money, that's the other thing

Today was the perfect example; I couldn't even access Kidney Health Australia

Q: That's interesting that you bring up that point, and it's probably a good suggestion, because I know that libraries can set that up for you, I know the QH library can set up a special link specifically for searches

I just think that that would be very beneficial

I would love to access the library if only I had time, and I can tell you now with 3 children a husband it won't be in my own time.

Q: Just looking at things from another perspective then, if we could look at the patient, do you think that, perhaps give me an example of where you think a patient may have influenced the adoption of EBP, or a group of patients may have influenced the adoption of EBP?

Sometimes we have patients on holidays down at other units they come back with different ideas, not that we have probably adopted them, but it's interesting to see the variance of treatments

We certainly do see a lot

It would be interesting to see how much they take away too

Q: Do you ever have anyone refusing treatment, because they may know of something that they've read?

No, not from my personal experience

Renal patients are much in control of the own environment

I think that's for patients in general, once they have ideas of their own care, that differs to that institution, then they're branded as non compliant and difficult, so I can't blame them for not saying anything much

But it would be refreshing to have a patient walk in go I've read this today, why aren't we doing this, and have some questions, and not question what you are doing but say have you ever tried that and being involved in their care

Q: That's never happened in your experience?

They're always seemingly uraemic though

They tend to go by what we've relayed back to them or information that we have discovered or have been fed back to them and relay back to them the techniques why we're using it, how, why, where we got this from where the evidence is from, so we're the ones giving them information, so the group that we have don't really acknowledge

I wonder if it is different in the private setting, is it different in the private setting? Are patients in the private setting a bit more proactive in their treatments and suggesting and might have done research and suggesting new things, and questioning why we do things and why we don't

You can put them in to separate boxes, you've got both patients, and applies to both public and private sector and it depends on their personality as to they want to actively control their disease process and participate and then you've got another group of personalities that will just come in and dialyse, and hand the control over to you, get me better, do what you've got to do, and send me on my way. You've got the two distinct groups

Q: And what about refusal of treatment, do you ever experience that where they just say no I'm not doing that?

As in refusing to dialyse

Or refusing extra time

Yes, we've had patients that will do their four hours and won't do a second program and they don't care if they're 21/2 litres over, they say that's it. And you explain to

them the reasons but their adamant that they don't want to have that extra treatment, so that's all we can do

I've got a patient that will actually change the number of days that he dialyses in a given time frame, in one month period he only dialysed 11 days, 11 sessions in the whole month, and he was adamant that he was going to be fine, until he became symptomatic and quite sick, did he then revisit, that this was an ongoing cycle that he goes through

Q: It does sound like it to me that there are patients that are affecting the standards that you are trying to deliver

Yes, he blows our numbers out of the water, the whole time because he is non-compliant and he gets that label of being non-compliant

Q: Would that be a minority group or a majority of patients

Pretty much a minority of people, and in some groups within that minority as well you have those that, well I'm thinking one in particular this morning that just doesn't get the whole fluid restriction concept, I think that there may actually be some cerebral involvement like Alzheimer's, that's starting to impact

Q: That's was going to be my next thing, do think there is anything specific about those patients

Some have other disease processes where they can't comprehend or they don't understand, they don't maintain the knowledge that you share with them from an education point of view

Or there are those that have just given up

Yes, those that choose to give up, those that can't cope with this disease process that they have been given

And that must be a high number, to have renal failure is a huge lifestyle change, and there's got to be a good percentage of people that just couldn't cope with that.

Well we've got one guy in the centre, one of my primary patients that's relatively new to us that in the process of finding out that he has got end stage renal disease and he is going to have to start dialysis, and he also found out that he had lymphoma, and the medications that he has been put on has impacted greatly because the side effect is hypotension, and with haemodialysis and you've got a pretty lousy three days a week that he has to put up with. And also there is social impacts, you know like what's there family support like, some people do not have anybody

The drop out rate as you go along with dialysis, you get those who can't cope initially with being diagnosed and put on dialysis but then as all the other conditions snowball on top of the renal failure, it's just amazing the ones that get to the point

that say no, that's enough I just can't do this any more, and the drop out rate with all these other things impact on renal disease

Q: Is their frame of mind a big player?

I think sometimes it gets down to their quality of life of lack of quality and the effort, and it is an effort to come and play with us three days a week, the physical effort to get there transport wise, and geographically they might not even live in Toowoomba, or they may live in Toowoomba but they may have some other disability that makes getting out and about not so easy

I had one patient say that this is the hardest work that he has ever done in his entire life

We've got one lady that has just come back from holidays, and it's the first holiday that she has had in two years, but even though she went away on holidays she still had to dialyse, and it still has to be organised

Q: If there no other comments on patient factors, unless you have got anything else that you were wanting to add about patients

I think sometimes the other disease processes impact that much, it's not the renal disease, it's the cancers or whatever it becomes too profound within their day to day living that prompts to say that I'm going to withdraw from dialysis

Q: That's interesting, because you might have identified a completely new factor I haven't found in the literature yet and that is the family. They all play a part, the families in most cases do you think, and they influence the patients decision

One lady we lost about six or eight weeks ago, we had a husband of many decades who wasn't ready to let her go, and we had three children each with their own views of what was appropriate

Q: The next thing I wanted to focus on is the working environment itself, and do you think that environment that you're working in effects whether you can adopt EBP or not. So how do you consider the environment that you're working in, just think about it globally, you've got your renal unit, then you've got other environments around that as well?

Hopefully we'll improve as of today; we've got the nephrologists starting today hopefully the environment will improve, in the past working with no nephrologists and limited medical cover, and the medical cover that we do have are junior medical doctors, it's a little bit stressful, as a beginning practitioner yourself your directing what doctors are going to write

Q: So just expand on that a little bit then, if you've got a junior doctor, they're coming in with limited knowledge I guess

I guess there is a lot of trust in us that we know what we are doing, because we do, we're pretty much telling them this is how we do it, this is what I want you to write,

sign this off here, and I'll fulfil the task and occasionally I'll sit back and think should I be doing that, not only they are putting a lot of trust in me that I know what I'm doing but also my practice as well, if anything was to happen, it would be because I've guided them that way

You have to be careful how you word your request, can I suggest that we do this, this, this, but it's up to you you're the doctor

Because it's actually a role reversal that doctors are actually seeking advise

Q: Do you think personally that you are taking on an additional role that you're not necessarily there to do?

Absolutely

It can be frightening and very stressful at times

If the organization wants to encourage individuals such as myself to operate in an evidenced based environment they need to give me the support to do so, I can't see how at present I would be able to fit it in

Yes and it can be overwhelming having to absorb a lot of information from different sources.

Q: Is that constant, or is it just when you get new doctors come along?

It depends on what new doctor

It's fairly constant if you're factoring in something like ward call

Even if you look back at other units, we look at the monthly bloods, we send off bloods, where as in other units, I've heard that they don't do any of that

It's very tasked orientated in a lot other units, where as I think it will be interesting to see when we have a full time nephrologists, whether some of that may change, it will probably be a big change, we're going into uncharted waters

It's just that we have had some sick patients and it does stretch the knowledge and the clinical practice a little bit, and then you get junior doctors, and you hope that you are doing the right thing for this person

That's what you've got in mind the harm that you are going to cause to this patient, and second to that comes your nursing licence and all your things, the first thing you worry about is are you doing the right thing

Sometimes I feel as if we have to get avoid being a strong leader and patient advocate, but sometimes I feel from a nursing point of view I have to push that bar a little bit too hard and that patients are given access that should only be *in situ* for x amount of days and they've been told by medical officers that they have the right to

go home when they should not be going home, they have been told they have the right to stay in for a couple of weeks, and that's going from our renal unit to other units in the hospital. It can be a very stressful role when you're trying to push issues like that, that hang on this is not right, it's not safe practice, and your registrar or resident is saying no that's fine, and you're going no hang on it's not, who can I go to next, and you're going outside your unit challenging other facilities within the hospital that what you're doing is possible not right, and you don't have a doctor to support you, it's a big ask and I think that's what has made us a fairly tight unit, and we're fairly adamant at the knowledge that we do have, and we share that and support each other, and probably 99% of the time what we stand up for, for our patients.

Q: So it sounds to me like you are fairly well focusing on resource personnel, lack of staff or the skill and knowledge of staff as part of your environment, and I must admit that I did expect that, that's quite common. Is there anything else about the environment that you could think of, that affects your ability to adopt EBP?

I think that having a positive outlook with every staff member makes a big impact on whether we go ahead with the changes; one negative can affect the whole group, so just the approach that we all take, so I think just positive outlook, and thinking more of patients

Q: With environment, I guess it's more about the lay out of the ward.

The unit has gone under refurbishment and changes to the different units such as PD and home haemodialysis and reallocating them around the unit to make better use of the spaces, and stock. To assist in the office space for the nephrologists and healthcare workers, so that's an environmental change that's a positive one

Q: You were talking about access to information before that does have anything to do with your environment?

Well, computer access is a real problem, we've got one terminal for everyone to use.

I can never obtain access to a computer when I need it, I would like to use any free time I have, which is rare mind you to look up new journal articles, but anytime I go to there is never a computer to do it with

Q: One terminal for how many nurses in the unit?

That's in the centre, but due to the environment you cannot go out of that environment to use another computer

Q: Do you have any suggestions on what would improve that access?

They're looking at putting an extra computer port in the handover room, but that's facilitated more for the home haemodialysis staff, until there computer port is up and running at the back of the ward

So if that changed it would help, but from a resource point of view, there is not a lot that we can access, from that computer. You can have a look around the database.

Q: Does it have the internet?

Only to the organisation one, so it's only internal.

I've tried to access Sydney Health Australia, but I couldn't, I didn't have clearance. I was looking for other renal dialysis units, geographically, for interstate holidays for patients.

That new site, I can't remember what it is called, but it's quite interesting, it's not just renal based

Q: What about other resources in the unit from a learning perspective?

We've got a library

We've got clinical text books; we probably need a few more of the more common ones, like the dialysis book and stuff like that

There's a lot of education stuff for patients in the form of DVD's and take home material

There used to be a subscription to journal articles, I know they're all electronic now, but to have something actually coming in on a monthly basis.

We are close to the library where we are, maybe one of the research girls should visit the library once a month and borrow out a few journals and leave them in the unit, as long as they didn't go home and get lost.

Q: So at the moment you wouldn't walk into the unit and find a pile of journal articles there for staff to read?

No, there might be the odd photocopied one

Q: So if there was a pile, say you had a journal club in tray that staff could access on night duty or maybe during a quiet period if there was one, would staff pick it up, and how many would?

I will, I reckon it would be great

It certainly be better than reading magazines that are two years old when you had your tea break

I guess once it was circulated amongst the staff and it was more known it would work, but if you don't have that knowledge to relay that information then they won't know where to look.

I don't know what's in the library

I think it would be a great thing, particularly late at night

Getting back to the environment, you know how cramped we are in our little space, I was only saying today that we had to go to Bailey Henderson, they've got all new fresh stuff, brand new chairs, brand new cupboards, brand new dining room table, I just think that it's not fair

We've had an extended protracted survey running within our unit monitoring our air conditioning, and we've got one particular patient that every day he comes for dialysis he is getting us to do incident reports and PRIMES that the air conditioning is just freezing. Race day money that we did as fundraising is actually now being air marked to buy an air conditioner for one of the dialysis units.

I would love to engage in research, it is a real interest of mine, and I would like to begin by becoming involved in somebody else's research first to learn the ropes, but we are never advised of research activities in the district, so how are we to express an interest if we cant

Q: That probable leads into the next issue then, your organisation is a large organisation, how much of an influence does that organisation have on your decision making when it comes to EBP?

They're the ones that direct with the money, where can we get access to the money that we have raised and are we able to get the things that we require without having to go through all the paperwork, the whole process of waiting for whether it's approved or not.

And even the fact that we have to fundraise to improve the unit

Now, it is expected that nurses only obey the orders, give the drugs, do the injections, monitor the blood pressures and write the nursing notes, but not to intervene independently. She/he is expected to obey as a lamb

Q: So the air conditioning issue, is there something there that drives what the temperature should be in the renal unit?

I think from a work place health and safety perspective, 23C is ideal. The ward technician is looking into that, he's been monitoring daily for a couple of months of what the temperature is in different spots, because there's hot spots, cold spots, and that's where the complaints are coming from.

Q: That sounds to me that there's a bit of an environmental issue there with the temperature, organisationally are you getting support at the top end to do this?

We came as a unit, and there was a huge turn out of numbers for what we dubbed as a think tank to brain storm how we were going to address the up and coming perceived increase in numbers once we had a full time nephrologists, and just the swell of numbers as more people have picked up and fallen into the system. We

looked at trying to do this, basically on the smell of an oily rag, on what physical structure we had what was available to us, we know that we're not going to get any new physical building for ten years, it was a couple of hours that we spent at this meeting, that involved the director of nursing, and there were two members that were representing the management side of things. We were led to believe that we had support, but due to budgeting again, the biggest thing money wise was 1. computers, and 2. the air conditioning, but the physical changing of the building, the rooms and the space that we had to utilise that, there were some very innovative ideas that came out of that, but yet again we had to go begging and stealing around units within the organisation to access them. We were trying to be proactive, anticipating that this is what is going to happen. But because we're quiet at the moment, that's all they can see, but wait until things get busy, then we'll see what they will do about it.

Q: Apart from the air conditioning, can you give me an example where the organisation hasn't been supportive of a change or something going on within the unit, or perhaps an example where they have?

The water tank, with our ongoing water problems, and insulation of that tank has been great as far as our water treatment planned.

Q: So with the tank, did that come quickly, did it take you long to get the tank?

It was fairly quickly, after the quotes it was finalised fairly quickly.

The evidence showed that we were getting bacteria in that was of high risk to the patients, that's when they decided.

It comes back to the same thing, that our organisation is reactive not proactive.

Q: That's an interesting point, I guess what you're alerting to there is that your organisation aren't thinking ahead perhaps as an organisation to what potential problems there are, and reacting to the problems that crop up, and then putting a band-aid on them.

And then actually having renal patients admitted in the medical ward that specialises in those patients, with the bed crisis, it's ongoing you can renal patients out lied to surgical, orthopaedics and other medical wards. So they are not getting optimal care, because the staff have got no idea on care for a renal patient.

When you're talking about the water crisis a couple of years ago, the management was very supportive while we were there pulling double shifts and being there until one o'clock in the morning dialysing patients because we were in the middle of back washing filters and stuff, they supportive back then and waited until we were doing that there at one o'clock in the morning to show their support, but once we overcome that little lump, things took a little while again.

I think historically our organisation has been very reactive

I think also that, some of us have been at the fore front with things that have been identified, that have linked to change, and we have been told to get quotes that have been obtained from companies outside our organisation and have been submitted, but by the time they have gone from one desk to the other and have been ticked and flicked and approved the quotes have expired. The old red tape.

Staff are losing morale, you have got good staff, good educated staff. I think that is a reflection in how many people are here tonight, perhaps people are just losing heart. You're forever trying to do the best and working really hard to keep the unit running but losing our leader only a couple of weeks ago it's affecting staff morale.

It will be interesting to see how the full time nephrologist impacts, combined with having our nursing focus back on track.

It's good and scary at the same time, because we are expecting a huge influx of patients.

We might not have the environment to put them in.

We're probably have lots of permecaths if we have lots of new patients that haven't been surgically seen.

And that's another issue not having the vascular access in people that we need, we have Gold Coast providing a vascular surgeon for us. We need a nephrologist that is quite competent in inserting permacaths.

Q: I have an issue that I want to throw out there for discussion, financial matters. So you were mentioning to me that you fundraise and you look at purchasing things yourself as a group, that is very positive. What about other financial support, organisationally the financial aspects, do you think the unit is well supported from the organisation itself, how would you perceive that? I know you're not the NUM, and don't have a good fix on the renal budget as such, do you see finances coming through? Do you see new equipment being purchased? Do you see new provisions being added for the unit all the time?

Not from the organisation though, new equipment is either fundraised for, or through companies.

Last year we purchased with our race day money a sonosight ultrasound machine, and this year the transonic is being given to us

Q: Has there ever been an example where something generically across the state has been realised and all units automatically get a piece of equipment because it must be there?

Yes the ironmen has just been updated recently

Q: And they were all provided by the organisation were they?

Yes, that's what the transonic will be, but we haven't got it yet.

When we're trialling new products we don't necessarily factor cost into it, if it's going to benefit patients we will trial it, if the outcome is going to benefit the patient.

Q: Is there a piece of equipment out there that you would all really love to get your hands on, but there's restrictions and you're not able to get your hands on it yet?

That's where we come in to it, if it's too expensive then we will fundraise for it.

We look at purchasing, then we talk with the companies and the rotary provide us with a fantastic \$5 000 a year, there's a big community support, and even through clients, families and their businesses and just through word of mouth

Blood pressure machines are an ongoing problem, getting accurate and efficient equipment, and we are a bit light on those at the moment but that's again going to be a donation possibly coming

The condemning and handing over haemodialysis machines that occurs, they have done their hours.

There has been two condemned in the last week, and they will be replaced.

Q: They are automatically replaced by the organisation, are they?

I'm not sure how that works

Just with my private hat on, I can see that there is a big difference in the consumables between public and private.

Q: Which way is it waited? Does private have more or less?

No, less, a lot less. You're just about counting gauze squares, and the volume of anything you use. I think it's run more as a business.

Q: Political influences, do you see that as a factor as to whether you can adopt a piece of evidence or not? Anything out there that might have been a decision for patient care that was politically driven?

Nothing that comes to mind

Q: Nothing ever been in the media?

No, Nothing that has influenced EBP.

Q: So you haven't had to make an immediate change in something because a politician was out there sprouting bad news?

No, No

Remember we got that big prize a few years ago. We won some innovation prize, it was staffed by Peter Beattie. It was to recognise and acknowledge the chronic disease.

Q: So did that political influence perhaps enhanced its success?

It did have a lot to do with him though, the funding he gave us, the resources to go ahead to put 6-8 small self care haemodialysis in the rural areas, that was great. You go to a lot of conferences and a lot of nephrologists would still argue that that was the right thing that we did, but that was what Peter Beattie wanted to do at the time, and he gave us the money and the funding to do that and it was just to target chronic disease and about keeping patients in their home towns, and all that nice stuff.

Q: Just moving onto something else now, EBP's is usually innovative that was mentioned tonight, there's new concepts, there's new ideas that are coming out, there's usually new technologies. Does the innovation itself in your eyes ever affect your decision making? Is there something about new piece of technology, or a particular concept or idea that affects your decision making in whether you adopt or not?

If it will benefit the patient, why not try it, if you've seen its success in other units, as such an example the sonosight ultrasound to decrease the risk of cannulation sites and problems, then we'll go for it because it's been a success in other units and we've trialled it, and it's less risk for the patient.

It would probably get adopted slowly

If it's changes to people changes in regards to, its new technology, its computer, I don't want to.

And the most experienced nurses are the last to use it

Q: What do you think the factors there were about why they were the last to use it?

Change!

I think that they would prefer to feel rather than seeing it on the sonosight.

I think it is just awkward going to visual

It is different to visual

We do tactile and we do visual, and then you're asking us to take our line of vision away from where we think we should be looking to a screen, but still actually do a physical process. It is a big ask.

It's a new skill though

I think that not having any access surgeons on campus it's been great, you've been able to pre-empt problems with stenosis, and if you've got bifurcations that might need tying off.

It's been slow, but in saying that it's been very positive as with the next piece of technology that we are looking at getting.

It's been about 12 months for our new technology to be accepting

Q: I guess it depends on the level of risk behind why you need that new technology, the question to ask there is has it affected patient care by being twelve months delayed?

I think so, adversely affected, every time that piece of machinery, or equipment has been picked up and used, there has never been any harm that has done to the patient, and you could probably count on one hand how many times you said it doesn't matter, no I don't need that piece of machinery, I can do this. Every time I've been caught out. I think I've used it four times in the last month, and I wouldn't go back, and I would probably pick it up every time now. It's a new skill, getting used to it.

Q: I'm going to mention a sensitive topic now, Chrisp guidelines we're going to talk about that as an innovative concept, talk about that between yourselves, talk about the factors of adopting that sort of guidelines for me.

I think the problem is they are only guidelines, and we are only nurses, so this document is designed to be implemented with your nephrologist overseeing clinical practice, they've got gaps but obviously where a expert nephrologist would come in say, ok, where it says a, b and c in the options, we're going to pick b here, we don't have that support. You've got 3 or 4 nurses standing around saying ok that sounds like the best option so let's do that. To me they're just guidelines, there not definitive.

They could still be refined to be more specific.

Q: So it's missing the specifics?

Like I said, if you look at those without a nephrologist, I'd like to say leave a femoral vascath in for 72hrs, it does not say that, how long to keep the vascath in, it does not say how long to maintain temporary accesses like that.

I think there holes in it, but I still like it though.

Q: Can you think of what might have contributed to that then, the fact that there might be holes in it?

It's because every nephrologist does things differently, they all have different opinions, and that's where the variance comes in.

If you don't a nephrologist there all day every day to make those grey areas black for you, I think we are losing out a little bit when it comes to those things.

Is it lack of EBP and research?

No, I think they have deliberately left those gaps, for nephrologist to put their own spin on things, their own opinion on things, if you try and tell a nephrologist of 30yrs, you're going to leave those vascaths in for 48hrs, or whatever it is, he is going to say I'm not doing that, this is the way I've done it for last how many decades.

Q: So perhaps what you're trying to say in a round-a-bout way that nobody is ever prepared to step forward and say 48hrs or 72hrs, because that might not necessarily agree with another nephrologist. The nephrologist aren't prepared to take that step forward and say this is the way it should be done because.....

That's my perception of the document, I'm not saying that is the case, but maybe that's why they're doing it.

Q: It's an interesting perception though

And again, where you're surgical reflection sights for temporary access, in that if you flashed that under a surgeon's nose he would probably throw it back at you, and say I'll put it where I choose to put it thank you very much, they don't care whether it's evidence based or not.

Q: What drives you as an individual to adopt EBP? Anything specific that drives you?

I think being the patient advocate, and drive to do what's best.

To deliver to them best practice, and causing no harm.

I would love to engage in research, it is a real interest of mine, and I would like to begin by becoming involved in somebody else's research first to learn the ropes, but we are never advised of research activities in the district, so how are we to express an interest if we cant

One recent research finding generating within our own district generated great staff support and significant advances in patient safety, however we were prohibited from adopting this new evidence as a certain member of our executive outlined that the district simply could not afford to make these changes and that it would not be happening. What sort of message does that send to us?, do the research but don't expect your findings if positive to the organization to be adopted? I think that that is a big deterrent to many nurses, and they won't want to be involved if that is the organizations attitude at the end of the research.

Q: Are you driven to adopt EBP?

I think because health care is an industry changing all the time, you don't want to get left behind, so if there are new things happening that are good for your patient,

then you're keeping up with the good unit, with a unit that respects your work, I think that is probably important.

You are driven to use best practice, because that is what you're taught right from uni

Q: Do you always agree with EBP directions that others take?

I think as nurses we are taught to question, and I think that is a good thing.

Q: Do you think that is built into every nurse that you will question no matter what?

No, not necessarily, it's an individual thing.

And then again it's a knowledge and a skills thing

I think as a beginner practitioner in renal you don't question

Q: Is there anything that we haven't mentioned tonight about factors of adoption for EBP that you consider should have been discussed tonight as an issue?

I think the evidence part of the EBP need to be really disseminated so everyone knows why, and understanding why we are changing our practice.

Q: Why do you think we change our practice?

For better care, and maybe utilising resources more effectively too, which is important because everything does have a dollar value on it. I think nurses on a whole if they don't understand why we are doing something, it's fairly well accepted.

Q: Do you think they always understand why?

No, not all the time

Q: So why is that not happening do you think?

I think there is a breakdown in communication between the source of the research or source of the new practice down to the people that are having to use it every day. I think that certainly in management the style changes in practice are never well understood by the nurses at the bedside and there can be a lot of bad feelings lying around because you don't understand why things are done, why things are changed when you don't have budgeting restraints and resource changes and things like that.

Q: That factor that you identified there, that the information is not flowing to the clinicians because of the communication gap, can people get into that in a bit more of a micro detail, why do you think communication is not occurring, what other factors that really put up the shield for communication?

Maybe it comes down to interest value, maybe some of it doesn't show interest to individuals

I think tonight we've addressed some of that by some of your suggestions about actually getting journal articles into the workplace, and I think that in itself makes you stimulate, perhaps people that may have become not necessarily stagnant that just haven't got that passion to keeping up with the changes and new ideas that other places are doing, a bit bored maybe

Q: You mentioned the organisation being reactive instead of proactive, do you think perhaps clinicians have settled down to that as well, and will only be reactive if they need to be and finding evidence rather than been proactive and going out finding it, do you think that might be part of the culture?

I think so, I think that we come up with a great idea that one of our patient's will be better off on nocturnal dialysis, but we can't provide that service, so what's the point in even worrying about that then, or don't even know how to begin. On one hand we want to do the best for our patients, we don't like seeing them washed out and exhausted after dialysis and having trouble with their clearances and their biochemistry and stuff, but on the other hand we're told time and time again that if they're dialysed nocturnally for six or seven nights they nearly sleep all night. But you can't provide that service to them.

I think despite the complexity of the health system and the web of structures, processes and patterns that underpin it, innovation can be successfully adopted.

I am aware that the role of leadership in innovation diffusion is commonly highlighted in the literature. I understand in any process of innovation, a key success factor is the ability of a select group of people to adopt and champion innovation to others. I know to take innovation forward, an important strategy is to identify and invest in people who are willing to test and adopt change early so that others in an organisation will follow.

For sustained learning to be created I think there needs to be a development of a strong infrastructure that provides skill development, and a knowledge bank of information about factors that impact on program effectiveness.

Investment in identifying and spreading effective innovations is vital to me. There is a need to create a system that identifies the programs that are having an impact, understand why they are having an impact, and then share this learning with other nurses.

I think the aim should be to increase the uptake of innovation to become a core competency of the sector, whereby receptiveness for change and improvement becomes a built-in feature of practice, supported by national and district-level structures and process.

Focus Group 2:

Q: What does EBP mean to you as a clinician? You can define it, just tell me what it means to you in your own words

I think that it involves research studies and making them into practice, and improving your practice to comply with the most recent evidence

Looking at the evidence and making sure it is actually worthwhile, it needs to be fairly large based evidence before you would actually incorporate it in

I haven't got anything much to say at the moment

I think similar comments, it's obviously looking at research areas determining whether the results of that research are significant or not and then changing practice based on research that appears to give significant outcome improvements

You're looking at what's out there and how you're going to apply it, look at what you're doing trying to get a better outcome or the best possible outcome

I guess there is always that option of just doing your own evidence based projects, it doesn't have to be research that's published and on a large scale it could just be a simple trial based evidence process within a clinical setting that means you change something quite simple

We have sort of done that with the catheters, we looked at dressings, how long ago I think 2002, because we had a lot of infections at that time and they were changing a few things

Other hospitals not just in Queensland, but NSW, Vic, SA found out that everyone was doing different things, that was with cleaning agents, It's scary isn't it

And it was, but it was good to because we got some feedback we actually looked at what we were doing, and then went looking for alternatives

Q: In what ways do you think you apply EBP, as a clinician?

You probably do every day without even really being aware of doing it, because you always think for the best possible thing that you can do for a patient, their best interests is what guides you I guess

I think if you don't have to identify a problem, you see something and think that looks good we might try that, but if you identify some sort of problem, that's usually where it starts, and you go to see what's out there, it's not necessarily you research people within the unit

I guess day to day you are using policies, and I guess in some sense there is a presumption that that policy is based on evidence, that when it was developed in was based around a body of evidence, so if you joined the work force tomorrow you use whatever policies are in place, it would only be further down the track that you

might start to think that there is a different way or a better way and you may go away and re look at it, but I guess that just all working within an umbrella of certain policies and procedures

These days our standards need to be high with clinical care due to the risk management considerations posed on staff as well as the fact that patients are becoming better informed when it comes to their own care in this modern age

It depends on the level of one's professional knowledge and experiences, and the ability to use them well

Q: Perhaps prompts the staff to question the policy or procedure

I guess just knowledge, again by staff going away and reading new information and seeing new information

You might read something, or see something, or the rep might come around and show you something and you will go well that's alright

Or the patient might tell you something, they might have come from a different renal unit, and they might say well down there they used this or done that, and that might be enough to go and prompt you to go and have a look at what they might be talking about and should we be using that or thinking about that, it could be from all manner of different areas. And then of course you get stuck into system issues where your nephrologist might say that you do it this way, and then you're a bit stuck. I guess sometimes you get stuck on a weird approach that is based on what you're told by somebody that this is how you're going to do it and you don't have a lot of views

Q: Do you think the majority of staff would side step that and do what they think is right?

It would depend on how big the issue was, and what it was, and you thought that there was better evidence around now to what there probably was when they were practicing, even though they probably written all the papers.

It depends what you want to change

And you really have to have them on board, you have to have everyone on board, that's the thing, it's not just a matter of saying this is a good idea, but you've got to have everybody in agreement and consent before anything can go forward, unless you've got that you are never going to succeed

a self-confident nurse can assert oneself and this is the way one can show one's capabilities and implement his decisions in patient care

Q: Do you think there are certain strategies that people can use to achieve that?

I think everybody needs to be involved in it, open discussion

I think the more people that you can get on side with potential projects, the better. I guess not so much on side but the more people you get driving it along and involved the more likely you are to get a successful outcome. You've got to bring on line all the

Q: In the real world, does it happen like that, or is that what you would like it to be?

I think does, and not everybody is going to agree on everything

I think if you've got a good argument, or you've got a good reason for doing it

You can put your suggestions forward in a positive way

And give valid reasons to why you want to change practice, or introduce different practices, if you can validate what you're doing I don't think people ever have an issue with it.

I just think you've got to be careful not to be trying to change things just for the sake of it, I think if people see that that's not the practice, I think where you can fall down with I guess significant change that's sort of evidence based, is if you've been in the sort of work environment that changes something every week because you just feel like it without it being cemented in evidence well then it's going to be more difficult to get people on side when there's a significant change that's got proven benefits, because then you're going to say you're changing stuff all the time and we can't keep up with it. When you are looking to change something you really got to be changing it because it does offer an improved outcome not just because on an individual basis it's going to make life easier, or you've seen one person do it so let's do what they do. You've really got to look and see if other people are doing that, or if there is a real benefit from doing it

Q: Do people have the skills to that though, with what you are referring to?

I think most people do have the skills, it's whether they make them available

If you work in a team, there is always somebody that can help motivate others, I think that is the whole way of getting it really going, working together

I think around a table, at staff meetings and things like that is a good place, so that everybody is involved in the introduction, they have a piece of it, they feel ownership

I think you've got to get, if you want to change something, you've got to get that change champion, the person who is going to go around and talk about it constantly, they have the idea and they are singing and dancing to the same song, you've got to have the time and the ability to invest in being that person who goes around, not necessarily persuades everybody, but it's a good idea and promotes, and spends the time to educate people and give them the resources to read all the time to absorb and take on those issues and resources. It's no good going I've read this piece of research we're going to start this tomorrow, you've got to let people read the evidence for themselves, and have discussions on how the evidence is waited.

I think if you give people stuff to read 9 times out of 10 they won't read it, you have to program time for it

It's no good saying, here this is what we're doing read it

You can present the information to them, have a discussion about it, and then give them something to read, they may or may not read it.

Q: So who finds the information to distribute to people?

Their educators have an important role in their modes of decision making

I guess the person who's putting their hand up, in knowing there is a area that needs to be changed

I need somebody that is a central person to run things, they can say that this is what we would like to do how about you help me do this and you help me do that. Everybody needs to be involved some way, if everybody has different tasks, and then you bring it all together, you discuss it then. Otherwise if you leave it to one person it becomes a huge job. And I think the problem with that is you've got to have the time to do it. Unless you've been given the time to do it, it won't happen.

How are we suppose to make a choice with such large quantities of people offering us an opinion on what is right. I feel overloaded.

Q: If you've got new information coming in to the clinical area, let's say it's a new staff member, they might be bringing some new knowledge from overseas or interstate, how well do you think that new information is received?

I think it depends on the person a lot of the time, and how they bring it across. If they come in and say this is the way we did, you've got to do it subtly and feel your way, you've got to get people on side, before you get them off side.

People have got to have time to get to know the new person, I guess it's about developing some credibility, you come in to a place and say you've got to change all this, if you haven't established yourself and established some credibility for yourself, because we can all arrive somewhere and on paper be x, y, and z, but that doesn't transfer into the day to day stuff. People need to see that you know your business and what you're saying is true experience and relevant. I certainly wouldn't be accepting of someone coming in saying you are doing all that wrong.

Q: If the individual doesn't allow some time for transition is that going to be a problem with most staff?

I think so

When staff come in with new ideas, and they've come from another unit, and they've come in and said this is how we do it there, you might say ok well I'll look

that up and you just see what other units are doing and what evidence is out there, you might say well yes that is a great idea, or I've looked in to it and this is what we've found and talk to the new staff member about it.

I can think of staff that I've met where they might come up and say that you're doing that wrong you should be doing this, and you might say that we've tried that previously and that didn't work for reasons x, y and z. But that still is not enough to move them on, they still go round to everybody and say that's wrong you shouldn't be doing it like that, even though you have given them an explanation of why that is not in practice in your particular area.

Q: Do you see renal nursing as a society? Do you think there is a society amongst the nurses?

Yes probably, I think it is pretty strong within Queensland, it's a pretty strong network, it's probably the most supportive networks that I've ever worked with. Everybody is always willing to share and be helpful, probably more so than any other that I've worked with before, that strong networking

I think that is possibly translated across the states, I think there is a similar situation happening in the others, it's quite a close knit group renal nursing

Q: So how do think that enhances EBP adoption?

In Queensland we've got a particularly strong senior nursing network, which means you get to meet with senior colleagues quite regularly, so you can discuss practices within individual units, and get shared ideas and shared exposure from that, plus we also have our own renal society which is different to a lot of other specialities where they don't have a specific society of their own where they can access information and be exposed to new ideas, so I think they are some of the key features that makes it very difficult. If you are a member of the RSA we are getting a journal that has a degree of evidence based articles in it which gives you another direct exposure to new things, which you wouldn't see in other specialities

With renal nursing people tend to stay with it, the people I first met ten years ago I still have contact with because there is something about it that keeps people

I remember when I first started renal my boss told me that people can stay in it for life, and I've found that generally to be true, renal nurses generally appear to stay for a long time

Q: Can you explain why?

The hours are good, no night duty

Colleague support is another big thing that keeps people, because there is that supportive network there that keeps people together

There is no one listening to our tale of sufferings; those who are in charge of us never support us." "If something goes wrong in the hospital, the senior nurse manager supports others rather than the nurses

I think there is a unique environment, I think the nursing staff work as a team in the renal unit better than in other units, and you've got that interactions of the patients as well, you've got that long term connection

Q: Thinking about your society, and thinking about if there is a new innovative idea that comes from overseas, if you could rate for me between 0-10, 10 being early adoption and 1 being laggards (late adoption, or hardly being adopted at all) where in that society do you think your unit sits?

It depends which point you are talking about

It depends what you've learnt

It depends what is coming in new, a lot of the American data is new its not necessarily the sort of stuff you would want to Australians

And there is probable a bit of disparity across even Queensland

I think when you dig deep particularly into American data some of their practices are less preferable to practices that are already in Australia, so I think you have to look quite significantly at their other practices. I guess the difficulty is if you've got research coming over from overseas you are unlikely to implement it at a local level unless it has been validated somewhere with Australia by something like Carey or within the RSA format if it's been talked about or spoken about at conferences or published in a more local journal. I don't think I would pull something off the internet that came from overseas and think that I'm going to think about doing this, I'd be more prone to wait for some Australian validation of its relevance to practice. I think every country is doing things differently, and are at different stages, even the model of care is different and it's funded differently. You can certainly read something and think that that looks really interesting, but then if you dig deeper and find out more about it, you find there are gaps in it or something lacking in certain areas

Q: Who do you think takes that initiative in Australia, to say that this need to be trialled here in Australia to see whether it's worthwhile?

Probably the bigger hospitals, the tertiary hospitals because they have more resources to be able to do that

I guess if it's a nursing specific role it might be the sort of thing that might be discussed at QNC and picked up. I think of some of the documentation work that has been done within Queensland, that has been picked up by nurses and talked about at nursing forums and grown out of that. I guess medically, clinical data is more likely to be picked up by the bigger hospitals with research staff or doctors doing PhDs and research, I don't think in our sort of area we're going to be doing it

Q: In the majority of cases do you think you are waiting for those larger hospitals to give you advice?

It's hard. It depends what you are talking about, smaller things we can certainly implement, but larger things can't.

Q: Give me an example of a larger thing?

You are looking at the larger hospitals that have got the financial ability to do that sort of thing. HDS has done quite well in Europe, and even relying on machines and nephrologist and things like that, you can't just implement it. Whereas smaller things we can implement as we go

Q: Can you give me an example of a smaller thing?

Button hole cannulation, we had a rep come around and he showed us these and we trialled them and now we use them on our patients. We did a little bit of research into that where we rang other renal units that were actually using them before we actually used them.

Q: Do you think that decision is a gut thing or do you think it is documented somewhere that you don't go here with this sort of thing but this source of evidence we can probably look at that ourselves?

It's a combination of both, you don't just go following on your gut feeling

I think generally most people are pretty sensible in approaching things like that and can see for themselves that something looks reasonable and then you take it a step further and find out who else is doing it, and what they have to say about it

Q: Do you think the your staff are early adopters, laggards or somewhere in between?

In between

Probably a lot of that comes from the nephrologist, he is a very old fashioned man, so we are probably not going to proceed as quickly.

Q: Is he into the group buying where you sit and talk?

No

No

Because he is a doctor and we are nurses

He is very old school, he doesn't even really communicate with the network in Queensland

I guess in some ways that gives you some advantages, because you can potentially do stuff that you don't really have to involve him in the process. Nurse led stuff I wouldn't even bother to ask him about

He has often said that that is a nursing thing and I don't want to get involved in nursing things just as you won't get involved in medical things

Q: Do you see that your nephrologist gets involved in EBP? Do you see that he probably updates his evidence every year?

Yes I think so, he does attend conferences, he's a member of the professional group.

And to be fair he is the one that pushed the sharps project along, if it wasn't for him it wouldn't be happening

I think he is up to speed with clinical research. When you talk to him about stuff like that he is aware of certain elements research and different suggestions for change of practice, but he has also been a nephrologist for a long, long time, so he also uses his memory base and his experiences of situations where he has dealt with a similar patient issue. I think when you talk to him and say why haven't you used x, y and z, he will say in my experience I haven't see that work for me or these patients, I think he is not using the evidence because he doesn't know it's there but because he has a different experience of how that evidence is rated, he's seen something else. People have questioned him why haven't you done x, y and z and will he have a whole history of numerous patients that he could talk to you about where he tried that and it didn't work, so he did this and that did work, so he uses that to cement his evidence

Q: Can you give an example where a patient may have had a positive or negative effect on the adoption of EBP?

I can think of examples where patients can tell you how you are going to do their dialysis, it's not evidence based. You want to suggest to them that you're the people with the knowledge, and we've learnt all these things and our suggestion would be this. You can end in big fights with them because you're only doing x, y and z. I guess it's a form of evidence, we have developed our skill around evidence, we have developed our knowledge of using UF part of treatment or profiling as part of treatment based on evidence, not because the machine came with all these fancy buttons for us to play with them, but the patients aren't always accepting of that. They will argue with you

I would hate to be held liable for a patient incident if I had not maintained my knowledge and skill based on new emerging evidence

Q: Is there ever a time that that inhibits the care that you're giving?

I think so in that sort of circumstance, because if you truly can't persuade and can't talk to a patient and explain to them your rationale of why you want to do something in a certain way and they are still adamant and they won't let you, I think that they are potentially missing out

Q: Does it sometime stem beyond the patient with other parties that might be involved?

I think you can involved in debates with family and relative where they say that I read this, or she shouldn't be having that tablet, you certainly experience all of those types of scenarios

That is probably more so, they are pretty unique patients

The other example is patients that are doing five hours and patients that are doing four hours, and the patient that is doing five says I want to only do four, and trying to explain to somebody why some might do more hours than another is based on evidence of clearance and better outcomes. Half the time they are so focused on the hours they are not really listening to the story of this is going to give you a better outcome and it's been proven that you will live longer if you do it this way. We certainly see thing like that as a regular hindrance. Not a day or a shift goes by that you are not having to argue with somebody about the number of hour that they are doing on the machine

I just say to them how long do you want to live

Probably, we're not able to give them what they want out of it, and that's what we miss a bit what do you really want out of this, I guess that where we all could benefit

Q: You know that there is a set number of hours that they should be doing this and they're just not wanting to meet that. Is there ever an occasion that a patient might refuse treatment?

Yes, they have not turned up because they didn't want a treatment

Or they have turned up, and some little thing might happen, like maybe they didn't get off on the right time.

Q: Does that throw your standard of care out of the window?

Well they will just walk out, but they will come back

It's a juggling act because they are chronically ill

Q: Is there a stereotype for those people? Is there a commonality between these people that are having dialysis?

I think we have institutionalised them, that's what has happened, and we are dictating to them that you will do this, this and this and you do it over, and over again so many times that that is what happens, they are basically brain washed in a way

I think they are all preoccupied with time, it is a big thing, there isn't one patient that isn't obsessed with time

If you are a minute late, my time is..., and you explain all the things in the world, it wouldn't have mattered what would have happened, even if somebody had died, it still wouldn't matter to them because at the end of the day it's about them, they are very selfish

Q: There are some scenarios that you can see inhibits, and those similarities do you think they contribute to perhaps influencing the type of evidence that you are wanting to apply? Do you think that those patients that you deal with every day restrict what you would like to do for them?

Yes, I guess so because we all meet the patient where you would like to offer them more time, to truly understand their perspective on things or to try and offer solutions or assist them in their thinking and sometimes their response to you stops you being able to do that. If the first thing a patient says to you is your late it doesn't give you the opportunity to get passed that and to get round to talking about other issues that might be at the core of the problem. I think the problem with renal units is there is no privacy in them, you can't get private time with a patient to discuss anything, so you are really never able to help them identify what the root cause might be of why they are so focused on time or focused on x, y and z

Basically they don't want to come early to discuss that or stay behind, so it's never really discussed because time, time, time, is the thing again

I think it does injure your ability to talk about stuff, it might be just simple evidence based on if you can manage your fluid allowance appropriately you will reduce the risk of cardiac problems. Who gets time to sit and talk? We get time to say you have drunk too much again, but really we should be spending lots of time with the patient explaining why we get so hung up on fluid. And they may have the same understanding as you but at the end of the day they still are not going to change it because it is just a little bit too hard

It's an attitude that they have in a lot of cases

Q: Do they ever get involved in round table discussions themselves, or in self help groups that you know of?

They don't really have a support group but they tend to about that, may be in the waiting room, sometimes they may get there an hour early and chat

Q: Do you think that the patient opinion is ever included in any of your discussions that you have? Do they ever sit on any discussions that you might have about EBP? Would you merit with that?

No, they don't sit in any discussions

I think it would depend on the patient.

A lot of patients wouldn't want to I don't think

It depends on what it would be

If you and the doctor thought that HDF was going to be useful to a patient, then you would have that type of discussion with the patient and you would talk about what the potential benefits would be. With like transplantation, you would talk to patients about what the benefits are, or working up to going on the actual transplant list

Q: The reason I brought that up is because there are a lot of situations where in order to validate evidence people put together an expert panel and they would often bring the in on it and I just wondered if you had seen that in renal?

If you wanted to do EBP with your patient it would have to be specific to us and with a specific patient, it's got to be something that's relevant, the patient has got to be interested. Some patients just come in and have their treatment and go, whereas other patients are quite interested and they are the ones that you could talk to them about it

I think that it is very much individualised, if you're proposing to change something based on evidence for an individual you might talk to that individual and say that this is what the evidence says, this is why we are proposing these changes because of the evidence. They might get the casting vote on if they want to go along with it, because they might essentially be quite happy with the treatment that they have currently got and then be apprehensive if you change it, it might change the equilibrium for them a bit, they might just think; no, I'll just stick with what I've got even though you are suggestion that if we do this you will get these benefits. I think on an individual basis you discuss it with them. I think if you are making, like with the CVC dressings, you would get a group of patients with CVC and tell them that we are proposing to do your dressings this way for this reason. I think you tell them at the time, if when you come to implement a change you are going to say you are going to notice that this is different to how we did it last week and this is why.

I think most people would be happy with that

If you forget that step, they would say why are you doing it like this, last week you didn't do it like that, and that would lead you into saying because we have read all this new research, and we've changed our practice

Q: Think about the environment that you are exposed to at work that the patients are put in and you are put in as a clinician, does that impact on EBP in any way?

Our working environment impacts on everything because there is no privacy whether you are a patient or a nurse. You could be potentially be standing at the desk trying to talk about something whether it was evidence based or not, and have about twenty sets of ears all listening in, and they having their own discussion behind your back, and saying; they just said..., we get no privacy to do anything, are don't know that puts you off from implementing anything, but it does make it hard.

Q: How does the environment, perhaps impact on your ability to access information?

Lack of internet access in our organisation is a significant issue, we get QUEPS and the allowed internet sites but because you can't just do global searching

We've got it on one computer but between ten people you might get five minutes, either early before your shift. You have to fill in a log sheet, and have to fill in what site and they come back and audit that at any point and if you have been seen to access any inappropriate sites then that whole service can get removed. I don't know why they don't just click on the history, it's all there instead of us filling out a form, they can track it without you filling out paper work

Basically, the only reason we got internet access was because of the doctors, it was really put on for them

Administration will not allow implementation. The organisation is also aware that other staff are not supportive and that physicians will not cooperate

Q: Anything else in your environment, PC's I know is a big issue?

The library resources, time to go to a quiet place to read, there is nowhere, we don't even have a tea room that is our own, it is somebody's office, it's got all our machines in it. There is no where you can go to just sit down with a journal or a book.

People wouldn't probably appreciate you doing that, because they think you're slacking off.

Particularly patients, if you are a nurse in the renal unit and if you sat at the desk reading you're not considered doing any work, and if you're on the computer you're not doing any work

Patients see that you're a nursing staff and if one of those nursing staff aren't putting you on then why is it, you are not doing anything

There is a perception that unless you are dealing with a patient out on a chair, the rest of the stuff that we do is not work, and us managers, we don't do any work as far as the patients are concerned, we are just wandering about going to meetings, that's not work, because we are not actually putting them on. That's what they say "where's the boss today, is she going to do any work today", it's all perception.

One of our staff was dialysing an acute patient in ICU and another patient didn't think she should be down there, he said that she should be up here because I'm waiting.

It's all about attention, and if you are not giving them attention, you're not doing anything

Q: It's their level of understanding about what we need to do to provide them with a service

Yes, absolutely, and they don't want to know. I don't think that they have got no idea I think it is that they still don't think that that's important. They are just very self-centered

Patients have actually said to me that you have been to the tea room four times today, they time how long you have had. There is no privacy. It's like working in a fish bowl

Q: How do you think the organisation goes in supporting EBP?

Research is simply not core business around here and I don't ever see our organisation funding any

I think the organisation wants to support it, and puts it out there that that is what they are moving towards, but actually giving you the time and resources to do that is another issue. They are forever telling you that's the way we want to move and everything has to be evidence based, but it is very difficult from a staffing view point to be able to have people there to do the research

I know my organisation takes serious actions with sentinel events and I trust the solutions they put forward, as I know how much time is dedicated to it. We are never involved in the process of finding the solutions though

I think there is the expectation that you will do it within the confines of your existing role, when they know that nurses are flat chat just getting the clinical work completed in the time allocated

They really at the end of the day aren't interested in clinical demands, even though they say that they have rostered people, but people are off sick, you never really catch up

It's specific to renal and the sort of networks we have and the meetings that we get the opportunity to attend, but then actually getting the sign off approval from the managers for you to attend if very difficult, they don't necessarily see the value in it, they just see that that is you missing from that clinical department for the day rather than thinking that that is highly valuable that that person is away networking with other clinicians. We have huge issues with getting form signed off

I think the issue is not that they aren't supportive of getting staff to conferences, but at the end of the day if someone phones in sick you can't release them because there is nobody to cover

Because they put a lot of work into education this year right across the hospital, and it's fantastic and they have a brilliant professional development thing happening and we try and allocate people every roster, but probably 70% of the time that has been cancelled at the last minute

Q: What is the education model? Do your staff go to a session away from the ward or do you have inhouse education?

We have ward in-service, only because our nursing staff drive it, nothing is offered by the organisation, not that I can see anyway

A bit of both

The hospital is very proactive at the moment and has done a lot work towards keeping people in nursing, and trying to assist them with their own professional development, but at the end of the day you only have x amount of FTE's. Historically their budget is mostly clinical hours, they use the clinical hours that you used last year and that's what you get this year, and you might get two days the professional development per FTE, you can't even get your mandatory competencies done in that two days that they want you have. Even though they are saying this is what we want, they are not meeting the demands

I think overall the lack of support in resources, so if you do identify a research item in your clinical area, you really have to go it alone and do every step of that yourself, there's not necessarily resource people out there to help you, whether they be research staff or whatever. You've got to do all the documentation yourself, you've got to come up with all the concepts on how you are going to implement that. I guess if they are serious about evidence and research it would be good to employ people in specialists ways that help units and areas to facilitate all of that. Even changing a basic policy, you have to format it all yourself, and I don't think as nurses we should have to do that ourselves. You can get some help through library services but you can't go to them with a massive research project, and use up all their time looking all that stuff up for you

In other hospitals for their renal units they have a couple of people for research

I know there are courses and inservices, but we need more focus on educating staff on how you would implement research into your workplace, because I don't have a good sense about that, if there was some sort of package or resource that told you that these are the steps. You do see the odd education session that is focused on EBP, but we need more on the clinical level on how you would implement EBP, and maybe focusing more on the small stuff, I get bogged down thinking that it is always about the big stuff, when really a lot of the smaller stuff we do, if we actually documented why we did it, how we did it and what the outcomes are and potentially that could be valuable to share with other colleagues. It sort of just gets done and then a year later your doing it and it's all over, you haven't had the opportunity to define it, I think that that means that people are missing out on that shared knowledge. We are probably all doing little things, but if we had the time to document the process on how we got there that would be valuable

I don't believe the organization has invested enough time and energy into E-Health, I see this as the future to us accessing information and even learning. I would like them to make accessing information less complicated and to provide us with regular evidence based practice updates. I believe this should be done centrally and generically as we don't have the time, we will use the information if it is given to us in a simple user friendly manner.

Q: I want to discuss financial as a factor, it could be your ward budget, it could be organisationally financing things. Do you think finance is an issue and how much of an issue?

I think it always is, just look at the health budget, it is never enough, it's never going to be enough to meet demands ever, and it's funded historically. We know that the stats are there that it's increasing 7% per year, so what do they do, they fund you on the previous year, even though there is growth there is no adjustment for price increases there is nothing, it is so under funded

Q: Is there ever example where money is forthcoming?

When it hits the media

I you identify a specific area of risk then you are likely to get some money

Q: How far does that have to go before you think you would get money?

It would have to be a fairly critical time, somebody dies almost, when you say that it was either a gap in service provision or equipment failure before you could get equipment replaced

Q: Is it a reactive thing?

Absolutely, it's a band-aid solution

Q: Internally, within your unit are you guys proactive with your findings?

It is hard to be when they are saying that this is how much you are getting this year you can't be proactive.

Q: If there is a fantastic piece of equipment that you know you need, how would you go about that as a unit?

Fundraise

You could potentially put together a business case together that you could push up through your district, but it is likely just to be pushed around forever and a day, and it's a lot of work getting a business case together

The difficulty with finance is what is important to us isn't necessarily important to the next man, and then you get into the fights for equipment

And you can say that by using this we might be able to decrease hospital admissions and save x amount of money, and it still goes to the bottom of the pile

We might put something like that in that would be highly beneficial to us and our patients, but that goes in the same pile as a new ventilator or something for the neonatal unit it just goes to the bottom because all these other areas slip in, they all

push us out because they know you've got your dialysis machines so they think you don't need anything else

They are more likely of getting things because there is surgical waiting lists etc.

Q: Can you think of an example where there has been a political influence that might have made you change the evidence that you were using?

This isn't specific to Queensland, but when I came from the Northern Territory, there was a lot of political influence that made us set up dialysis services that didn't exist, because the patients winged to the government and the government put up the money, and services commenced

They came around all GBI five years ago and said we can't afford to keep funding you so basically the benchmark is that 40% of patients will be going home whether they are able to or not, with the heavys from corporate office saying that they will be going home whether they are a 90yr old blind man, it doesn't matter they will not be offered a service, that is home by themselves. Of course it didn't float, because no one is going to do that

Q: Do you think there was EBP behind their decision making there?

No, at the end of the day they are just looking at it being cheaper to treat people at home

Q: Looking at the clinical area, do you think that it has a negative impact on the nursing staff, when you see at the top that they are just going to make blind decisions. What happens to staff morale then?

It takes a huge dive

There is nothing worse than not being consulted about a big picture issue, whether it's we're going to build a dialysis unit over there or whatever, if you haven't been consulted or discussed with you I think that that is a big issue. It does create barriers and knock back morale, because we would all see ourselves as having a vast renal knowledge that we can share and feed off to people to inform their level of understanding, and I guess sometimes you get people in who think that we don't need to know what they think and just rail road over the top of you and say well it's going to be like this, and you think that it makes no sense

Q: Talk about the culture a little bit, that can be within your unit or the organisation itself, how do you all perceive the culture in relation to EBP?

I think most people in our unit are certainly all for EBP, because at the end of the day it is all about job satisfaction, if you are doing something better and you have the evidence to support that and you are working toward to improving things, there is satisfaction that you have made a difference

I am fairly new to our organisation, but I do get a sense that our organisation is quite proactive about EBP.

Q: Is your organisation generally proactive or reactive?

I think they are reactive

I think they are reactive on some levels but I do think they have a fairly strong research arm and commitment to research compared to other states

They are moving towards being more proactive now then being reactive

Ultimately every state is reactive because nobody has got enough money

I think everywhere is going to be reactive because there is never enough health dollars, you can't meet every service needs, there is always going to be one where growth speeds up and is knocking on the back door before they were ready. You are never going to get right.

Q: Innovation and EBP goes together nicely, think of innovation in the renal setting, the innovation itself have an impact on the evidence that you adopt? That could be open to all topics, or it could be a particular piece of technology, does that impact on your decision making as a clinician, or as a group of clinicians as to whether it is adopted or not? Perhaps think of an example

I'm thinking of machines, when new machines come along we all adopted it because it came and the machines were there, and you had to. Now 5 to 6yrs on most units are using some of that technology and are continuing to do so. That isn't stuff that we didn't necessarily go looking for, it was because it was there, it was well marketed, and it is open to you.

Q: Did that come down from the organisation?

It comes through other channels, from the dialysis companies that are selling and marketing. It does come down to the innovative stuff that you have got, because clearly you could go along and purchase a base model machine that offers you none of the extra stuff. It is about staff wanting to use the evidence, wanting to use the innovation, to improve practice and because you are interested in using that, but you could adopt not to

Q: Do you think that the innovations could ever complicate things?

I think they can if you don't have the time or the resources to educate and train your staff in relation to that. In that sense it can over complicate things, because I think it can be quite scary to users. If tomorrow a new machine comes in and it's got all these extra features, as clinicians that can be quite confronting and a little bit scary and that can put some people off because yesterday you were competent and today you're not. If you don't have the ability to bring in new things in a controlled sort of manner, to allow everybody to develop a level of comfort

Q: Are all staff supported if there are new pieces of technology comes along that may have complicated stuff that is on it?

I think so in renal units, I think you try to

When the new machines came in you had to push some staff to do it, you can get that resistance too. The resistance comes back to time, getting people to go to inservices was like pulling teeth, that's because they didn't have the time. If they had the time, if it was allocated, then it would happen

The thing is we can use all this equipment, we can gather all the data you still have to have somebody higher up to act on all the data

Q: Is there ever a fear of innovation, do you think?

Yes I think so, especially if you have a new machine that has new bells and whistles on it there is a bit of a fear until you become familiar with it

I think there is that fear of appearing incompetent, and I think the problem within renal units is that all the staff work within close proximity, the patient's are within very close proximity, if something does go wrong, a thousand people see it. So I think that does bring fear when there is something new because people are going to see me failing, or what if I look stupid, or what if I can't do that. I know myself that if there is something new and I am still learning it, it is really quite confronting, especially if you have patients questioning you, and you don't know. Patients aren't really accepting of the fact that there is stuff that you don't know

Q: Going back to that original question that I asked you "what does EBP mean to you", the next factor that I want to discuss was the individual clinician, so each of you, just think about yourself and how do you as a person affect EBP adoption. Do you think your personality type or your motivation , or your reasons on going to work impact on the evidence that you adopt as a clinician? Is there anything as an individual that might influence your decision making?

I think from my perspective, I think it is being a bit of an explorer, I would spend some time looking at what's new and what's out there, whether that is reading journals or doing internet searches

I think I am open and willing, I am willing to trial new things, and ultimately is depends on the outcomes from that, so I think I am open and willing

I love change, I like to see

I don't think that I particularly like change, but I am open to it if it is about

Q: Are people familiar with Myers Briggs, I guess that is where this is heading, it's personality type, if you're an extravert, there are people that are innovators, there are people that are thinkers, there are people that are doers. Do people know the type of person that they are, and does that positively or negatively affect what you do in the way of EBP? Is anybody in the unit an innovator?

I think we all are to some degree

I think that I am more of a thinker, rather than an innovator

We're probably not all innovators, there probably are 50% of the staff are innovators, I would think, they are out there and forever looking

There is a good majority that are out there looking for ways to improve things and do things better and are fairly open to change

We encourage people to do that at the unit

Q: Do think that there is ever a time that the individual clinician just does it even though they have questions?

No, they still ask questions

Q: They would all ask questions?

No, not all there would be a couple that wouldn't, because they have always done it that way

I think if we felt comfortable we would ask questions

You are always going to meet staff that don't have enough knowledge to know that what you are suggesting is good, bad or indifferent, those sort of people wouldn't ask questions, they would just do whatever you asked them to do

Q: Getting back to you guys as individual clinicians, what do guys do about that, if you know that those type of people are around?

You make sure that they do understand the relevance

Work within their scope of practice

Some people don't take kindly to you pointing out to them that what they are doing is not quite the right way to do things and they not open

It depends on how you approach it

It is not only staff that are doing things the wrong way, it's having a process of dealing with staff who think they have an innovative idea and just decide that they are going to start doing that from today, without any team discussion and picking that up as a whole unit value.

Q: Are there individuals who never willing to work in a team?

Yes I think so, sometimes there is personality clashes within a team and you can't change people's personalities

Focus Group 3:

Q: What does EBP mean to you as a clinician, you can define it or what does it mean to you?

EBP should be based on evidence where possible, there has been research that shows that's what we need to base our practice on. It is a matter of legal or ethical responsibility to maintain our nursing knowledge and skills

Instead of it being based on the way we have always done it, we need to have the evidence to improve our practice, it need to be good evidence not just here say

What it means to me it that instead of basing your practice on how it has been done in the previous years; that we have always been doing it this way in our hospital, what it means to me is that there has actually been some research or some trial that has been done that proves that doing your practice that particular way is the best because...it gives the best patient outcomes or whatever the specifics show. It changes quite a bit and you are always having to keep up to date with new practices that come in, we are always challenging the way we did things traditionally, there is always new things coming through

I think that it also helps to empower nurses, and we have documented proof of what we have been doing

Q: How well do you think new information is received within your clinical area? So that could be information coming out of a new journal, it could be a new staff member coming into the ward and they are saying that where came from we actually did this a bit different what do you think, how well do you think it is received?

Even if we find high level evidence it is unlikely the MO's will support the change, they don't like being told how to do there job's,

There is one clear reason to me why research is not core business and that is because patient care as a priority will always come first

I think that the staff receive pretty well, we are very open to new ideas more so than 10yrs ago when it was we do it this way and that is the only way we do it, I think that we have come a long way, I think that we are very open to new ideas

A written record of an event with possible or real untoward effects can be an excellent learning exercise for our knowledge and skill when giving patient care

I would agree, that as long as that person clarifies and backs up, and this is why we did it that way, and they have the evidence or statistics to back it up

And it is an improvement on what we have been doing

I know that in PD we have guidelines and they are always getting updated and we are always mindful of being of what those guidelines are, and there is a lot of work that goes into those guidelines so we are open to what comes out of them

I have found some resistant to change. This is the way we do it, this is our procedure, this is our protocol, and I would say that quite a few are resistant to having something new introduced

I see the utilisation of research findings as a building platform to ensuring we have appropriate patient outcomes measures in place

Q: In your opinion are there any reasons why there might have been any resistance?

Because some people like to have it written, they like to be regimented in the way they do things and change is difficult for them

I think there are the personalities that are fairly inflexible and see things in black and white and need to have certain processes put in place

I think a lot of the problem is the change process itself we have very poor change processes. You look at the heparin trial, we were doing it one week and then we were back to what we were doing the week before. We went through four changes in four weeks because we hadn't looked. If you follow the change process, a lot of people are resistant because there is not documentation, or there is not information, education given and that's privy of the change process. I think a lot of staff initiates change for change sake without having that change process to do it properly. You have to look at the implementation of the change as well as the change itself

Q: So does the organisation, have a change process that you can follow?

There is a change process, but where it is?

Q: Does everybody know that process?

Probably no, when you move from one establishment to another, that showed up a big deficit in change process

Q: Do you think people handle it in different ways? How do think the majority of people react to change?

I think the majority are opposed to change, they don't like change

Q: Do you think nurses are a society, do you see them as a society of nurses?

I suppose we are in a way, we are very professionalised, it is such a specialised area of nursing

If someone said to me what is your renal society, I would have to say all people that are known through the RSA that involve PAH and THS because you mix with those

people in your talks and everything, that would be my society. If you have been in renal long enough it is the stayers that are still around

You can say that about each area of nursing because I have been in other areas, you could say it about the neonatal nurses, you could say it about the cardiac nurses

I wouldn't say that it is different from any other area of nursing, that is just the way it is because it is a specialised area

We do share knowledge

I suppose the patients are so familiar, they come back all the time, and I think the staff are a bit the same

Q: How do you find the culture here in this unit, is it a good culture to work in?

I am fairly new to this area and it is a good culture, all the girls are friendly, everyone took me on board when I came in they have helped me a lot and I have been very happy

Q: Has anybody had an experience where they really didn't know something and got overwhelming help for everybody, or have people had an experience where they didn't understand something and found it hard to get information of people?

People are always turning around and saying you had this person last time, what do you think?

I think that we are in a tough independent nursing role, and sometimes we have only got each other that understand what we are talking about and understand the implications of what we are doing

It is the nature of the patients, they are not just black and white

If I didn't know how to do something you always get support from the other nurses

Q: If you had a new piece of innovation come along, innovative technology or innovative information, you have never heard of it before, it is something outside the square, how quickly do think that is adopted here?

We would take it on board

Q: Innovation diffusion is a scale from lagers through to early adopters, where on that scale do you see yourself if it was from 0-10?

I think we are early adopters

When we buy new machines we do it, a lot of the stuff is the perceived benefit, and for us if it is perceived work benefit or especially if it is a perceived patient benefit

We are pretty proactive for our patients and we are an advocate for our patients I think most of us if we see it as a good thing take it on board

And you utilise the new technology, as long as whatever that new innovation is, is backed up with hard core evidence that it can do this, this and this, then that's fine, and everyone has had an inservice on how to use the equipment and are happy with it

I think we are pretty wise to the biases that come through

There wasn't any questions after that presentation for the transonic, because I had some questions about it, because it is based on American data

I think what we do have are a number of champions, and they push it and they provide evidence, and then we have a number that just go along and then we have a number that don't really care, I think that we certainly have those champions that really push it that own projects and take them on

Q: Can you think about the patient and their role in EBP, and can you think of an example where the patient may have impacted on the implementation of EBP or the adoption of EBP?

I feel like the patient acuity and workload is inhibiting my ability to make decisions and improve my practice

Some patients are quite resistant and it has been quite difficult

I think with chronic illness people know what they are doing, they know their routine, and they don't like change

For the patients they sometimes don't see the benefit to them, having longer hours, they just see a little old lady sitting there at 8 o'clock at night. They don't think it relates to them, it's all negative to them, there is nothing that they perceive as positive. Maybe we didn't sell it very well to them. When we moved it is a form of the unknown, they didn't know the nurses, they physically hadn't been ready, maybe a little video introducing them to the staff.

Patient problems often arise where I would like some new evidence to guide my practice, but due to time and no access to computers I often settle on asking someone more senior for guidance

If we were on the receiving end would we be the same

They needed a bit of education before the hard sell, I think education is the key

It is a bit like the transonic monitor, we all went around with that being the new one doing it, a couple of the patients were like you're not going to do that on me, so I would go to the next one, and while I was at the next one they would be asking me questions, and then I would say should I do you now because they saw how easy it was, and then they would say yes

Q: What do think the strongest factors are there in the way that they react?

That they don't like change

They just don't like change, they get set in their ways how they like things and even sometimes particular nurse that they like or don't like to look after them

Is it fear of the unknown though? New equipment, they're thinking what are you going to do with that

Once they have seen it on somebody else they, they like a bit of education on it, asking a few questions while you go along, then they say well that looks pretty easy, you could do that on me

Do you think it is the power thing, what is that nurse going to do to me that I can't have any say to. So when they say yes it is very different to you saying to them that we are going to change your hours. I wonder if it is about choice, tell them the benefits and give them the choice

I think that that does work for some, I think that they like to have a say

Q: Do you think you always include the patients in everything?

No, not necessarily

We like to think we do, but we probably don't

Q: Your work environment, the environment that you're in, that is the lay of the ward, everything about this environment, how do you think that affects your ability to adopt EBP?

We don't have a library, we don't have a place where the journals and resource materials are kept within the clinical area

We used to have one, but it all got disseminated and made into a consult room. All the journals that we did have, have all been disseminated and shoved into boxes

I spent the last few months in pre dialysis, and we work in an incredibly tiny room, probably 2m by about 7m maybe, and there can be up to six people in that room, and research is at the bottom end of that room and pre dialysis is the top end and it is a struggle, you are working in a tiny little area, you might want to get patients charts out and get information, you might be wanting to work them up for transplant and you need heaps of stuff out, you are almost on the floor trying to sort out what you are doing. The other area previous to that, which I am going back to you have five members in that which we call a fish bowl, and again it is very difficult for accessing charts and information, it can be an issue

Q: Do you all have access to the larger library on campus here if you need to?

Yes but you don't have time, not during your work time. It is the fact that you have to get over there is the issue

Q: What about electronic information, do you access to that sort of thing?

We don't have internet access, so we can't get hold of those journals on the internet. I only know two people that have internet access and you can't always get hold of them

The organisation is very tight with the cost of it too

The other thing is that we don't have suitable access to the computer, sometimes finding the basic blood results, getting time to get the blood results let alone sit and ponder, if you are going to do something on the internet you need time to get where you need to go, you don't get that, you don't get the time. You just sit down and you are told to get off, or you walk around and everyone is on the computers

I would agree it is a fight to get to the computers

We simply don't have enough computers in our working environments to cater to every health professionals needs, essentially we nurses need our own computers that only we access when needed, and believe me we would use these a lot

We could really do with a position on our staffing roster that just deals with research and evidence based practice

Q: If people are bringing new information to the unit, where do you think that likely source for that new information is? Obviously you can't access computer here then, and you are not accessing journals because you don't have your library resource anymore, so where do you think you get your information from to bring to the table

We have formalised our inservice time, for our professional development, including our performance planning and inservice stuff, it is a busy time of day and it is not always available to everybody. We have the companies bringing in information, but we have to be very wary of biases. If you haven't had the professional development and exposure to looking at research you can believe all of that without having a critique of it. When companies bring something in I am always cynical, because the companies are there to make money, that's their job.

They are pretty good at selling it, I must admit I am not experienced enough to critically analyse the goodies that they have given me

But you would know enough to say that this is the company rep, putting forward a company product, so already you have got your mind ticking over, you may not have those particular skills to critique the article but you are aware that there is a slant to it

We use guidelines that are unbiased, we refer to them in our unit, we heavily use them

Q: So to some extent there are you perhaps relying on some external bodies to synthesize all of this information for you and to say that this is the best evidence, this is what you should be doing. Do you have anybody in-house that tries to do that?

I think we all try a bit, I have done EBP courses at uni, but I just don't get time to look at the resources, and there is very little written for renal, there is very little research.

In regards to the studies, there has been a study that introduced some cultural stuff, another study that brought in learning to do with self care but because the environment couldn't support that that tittered out, another study has been done on cannulation that a lot is based on EBP, but those staff members are doing a lot of that in their own time. We don't have a dedicated personnel that looks at our common nursing practices and say we do this because the evidence says that, look our cannulation I would say that the evidence is there to support our knowledge, you are aware that a lot of the clinical knowledge is very good knowledge but there is not the data to back that up, and we don't have those resources here in this unit, it is just if someone is here doing a study, or if one of the guys is doing there grad Dip. and they take on a project

Q: How do you think the organisation affects your ability to adopt EBP?

I think that clinicians are devalued, sometimes you find yourself on the bottom of the heap

I don't believe our quality department are very focus on best evidence, they appear to be only focused on accreditation

I don't think our organisation really values a management day to look into extra things, you have got to be so accountable for your time, and you have got to be so productive it is all about nurse patient ratios, if I put up my hand because I wanted to explore an area in nursing that I was interested in I wouldn't get anywhere

I think there is a lot of paperwork generation, and I think that it comes out that the patient is not the pinnacle of care. The patient should be the pinnacle and those people closest to the patient which is usually the doctor and clinical nurse because they are the ones that spend most of the time with them. You look at the number of nurse specialists, we are a specialty unit so we have a lot of specialist, but you go out into the wards, the number of wards that are run with 1st and 2nd year nurses, you can't tell me that they have the experience or the background

What we are saying is that we think our organisation doesn't really support us front liners.

Q: Those 1st and 2nd year nurses that are out there now sinking or swimming, do you have any solutions on how we could support them better with their EBP and improving their knowledge and skills?

A lot of the stuff that I based that on is when we went to a talk a lot of the 1st and 2nd years admitted to us at how frightened they were, and they were left in the wards alone, that's what a lot of that stuff is based on. I just think that you have enough support

I think the experienced nurses in the ward don't really want to stay there, because it is just too hard

And it is too much work, you can't do quality work. A lot of it that has changed is the quality thing, if you get a patient in and out and off you have gone through your numbers then that is good. And you do need numbers, to do the best practice or quality care is frowned upon

That is not necessarily here, but there is a time pressure

I think that is what has changed in nursing we don't get that professional satisfaction, and I think that is why a lot of people have left

I think that with a lot of the new grads time management is drummed into them, it's a huge thing and it can be quite stressful for them I can imagine

There is a time to question is that what has gone out of the door, you don't question you just do

Where I used to work we employed new graduates, they were very closely supervised, they had plenty of time to learn off the ward and ask questions and they were well supported

I think last year here it was difficult because there was a shortage of nurses, and unfortunately even though the plan was to support the new grads better in reality it didn't happen on many occasions because there was no staff to support them

Our new grad system hasn't really worked for us very well, and I don't think it can

Q: Look at the financial factors around the adoption of EBP, how much of a factor is that here? For example; if there was a fantastic piece of equipment that you know that this unit could really use what is the likely hood that the organisation would fund it?

Last year up until just now we wouldn't had had any problem, but funding is an issue for the next financial year and purchasing any new equipment would have to be very carefully looked at, and it wouldn't happen just like that

Q: What about raising money yourselves, are you proactive with fundraising here?

We do raffles, but nothing full scale.

But why should you fundraise to do something with professional development, we all want to, the hospital wants to value us. I think being professional is a two way street, I think that sort of fundraising for EBP, I don't see it in the light of if we want

to be muted professionals, it doesn't sit in with the expectation that we will do charity fundraisers to develop an evidence based course, I think that is totally different to wanting a new piece of equipment that will benefit the patient

Q: How much of an influence on EBP do politics have, and can you think of an example where some political influences have probably impeded you achieving something?

I don't think I could say impeding, certainly political influence has opened up dialysis, and that is patients using political influences, so it has actually been more proactive then negative. That doesn't necessarily mean that is has been a good influence in that particular area, it hasn't necessarily been thought out, it has been political power that has been generated

Q: Do you think it is affecting your ability to deliver care the way you want to deliver care?

Yes it is because we don't have any funding, it has halted because the politicians have decided to wait for more information, however I understand that other units have had funding and are financial

Even though the planning of these units was well advanced

We try to be as proactive as we can without

Once an area has been given to you then taken away, not taken away but on hold. They built one building where it was supposed to be and then it wasn't given to you and then it was going to be another building

Q: Think about yourselves as an individual, how do you think the clinician themselves can affect EBP adoption? And if so how, and in what ways?

Once when I was working in a neurological surgery unit, a discopathic patient was brought from the operating room, one of his primary signs was leg pain. When he was brought in, I noticed the patient's frequent complaining of leg pain. I went to his bedside and removed the blanket. Previously, he had complained of pain in the right leg but now, he was complaining of the pain in the left leg. I felt the left leg's temperature was lower than the right one. His pulse was slow. I immediately called the concerned doctor and also called and arranged for the operating room. The patient was taken to the operating room and an embolectomy was done. The doctor said that any delay in the operation would have led to the loss of the intact leg. Anyway, if my knowledge had been poor, something would have happened. It was at that time that I felt my proper knowledge and on time decision could save the patient

I think the most important thing is that you have to do something significant that is of value, if it is something that you don't perceive as going to be of benefit, the nurse or the patient has to benefit, and it may be a big change

Q: What would be the major benefits that a nurse would be looking for?

For example if it is a new type of cannula to cumulate with, different techniques, if it makes it easier for me to use or safer, or it takes less time, or it has big patient benefits that you can see. It has got to be a change for a purpose not a change for change sake, or supporting somebody that is doing something. If you have been there and been through a survey and all the things that were meant to happen didn't, you get a bit annoyed

Q: Can you think of a project that someone has tried to do in this unit that may have fallen over and the reasons why?

We did an education tool for the satellite training of our patients, and that was resources a lot of the time because we couldn't petition off that area for learning and we couldn't have dedicated staff for that area, so that was resource limitations. We all perceived the benefit of it we just didn't have the power or the resources

In the PD unit they were having a lot of exit site infections, so a nurse did a study on introducing a cream, an antibacterial cream, the study went very well and the nurse won an award. The nurse did a really well thought through research project that has influenced our practice and we have continued to use the antibacterial cream in the prevention of exit site infections and possible complications down the track

There was also a study on the intrasite dressings that we use for central lines, that is a once a week dressing now versus doing something three times a week, the patients benefited because their skin wasn't so sore, it's comfortable, it costs a bit more but you are only doing it once a week versus three times a week so that counteracted the cost, everyone adopted that and it's fantastic, and our infection rates have dropped

Q: What was it about that one in particular?

It meant you didn't need to do a dressing every time the patient came in, so that saved us time, it was see through so you could still see your exit site if you needed to and you could see if you needed to take it down or not

Q: Was there overwhelming evidence for that dressing, do you know?

There wasn't evidence in the form of a random control trial, there might have been one or two from the companies with small numbers

It would have been nice to have someone write it up, about the infection rates

I think one of the reps rang up and said that I have a new dressing do you want to have a look at it

that due to inexperience and freshness of most of the nurse educators, they lacked self confidence and could not educate a good new nursing generation, and this includes research knowledge

FOCUS GROUP 4

Q: What does EBP mean to you as a clinician?

It's looking at where there is demonstrated evidence or clinical trials that show us what is the most appropriate way to practice rather than looking at things that are historical or that somebody has told us, or something like that, so it's actually using the data that is available and the literature and other areas to, to make our practice better

It is the use of documented outcomes that have already been researched to save time and money, that allows people to adjust to the clients' needs as well rather than that's what is written, that is what we do, it is always ongoing looking at the best outcomes for the patients

Looking to practice what is appropriate and looking at what the results are and what the outcomes are and what is best, and adhere to those outcomes and share with others about the EBP

And also looking at what is best for the patient

The use of clinical trials and literature to improve standard of care to patients

Q: As a clinician, or a group of clinicians how do you apply EBP?

Quality activities, implement them and see what the outcomes are

Evaluation, ongoing evaluation

Benchmarking to us is a tool that identifies best practices. It allows our renal units to compare their performance within the organization and with other external organizations

We tend to look at an aspect of health care process or outcome that signals whether or not the appropriate interventions were provided and generally these are a good guide, however I do question if some are now relevant

Q: Are there any models that you use to apply it?

I suppose in a way our standards have been researched, the organisations standards and sterilisation standards, Australian standards have all been based on research therefore to be best practice, and there is ongoing review of that

Q: If a new staff member or a company rep came in with a really great piece of innovative technology, something that you have not seen before, how quickly do you think that is adopted in your unit?

If it has been evidence based and has been trialled else where I guess you would have to trial it first to see whether it is good you wouldn't go straight in and do it

Q: Have you ever had any frustrations with that before?

There are time constraints, patients acceptance of it, you have to explain to patients all the time why you are doing it and getting consent, and also staff willingness to participate, that is really important to educate them as to why you are doing it and whether the outcomes are going to have any effect on patient care

I think one of the things you asked the other day and that was what makes a project fall down, one of the risks is staff being compliant

There are always time constraints more than anything else

It is very difficult to try and get somebody to change something that they have been doing for the last 20yrs. It's difficult to change a habit, you have to really focus on doing something that was totally different to what you had been taught and had done for many years, and even if you knew that it was evidence based and it was more appropriate

I have worked in a few different units now and I have seen other ways that perhaps might work better in our unit but you have got to have the staff acceptable to change as well, otherwise it just doesn't work

It is the way you approach them, if someone new comes in and tells you what to do it is more of an insult, that you are wrong

It is not that you are wrong, it is that there is a different way

People who are set in that way of routine don't like change too much

Q: Has anyone ever been that new staff member before, where you have questioned the way that things are been done and you are not that happy, do you say something?

Very slowly introduce it or put your point across, there are more ways to skin a cat just because it works there it doesn't mean it will work here, if they have done something for the last ten years and it is working for them well then why change it

From my perspective if you have got good evidence it seems to be easier, if you can say that this is what is happening and give the evidence, then you know that you have got to do this because it is evidence based, and this is what we should be doing and people were quite happy with that because it was well researched, but there is huge gaps, where there is a lot of evidence except anecdotal, it may not be a presentation at a conference, but if it has not been published you can't get hold of it and it is really hard then to say that this is a really good idea, and I find myself that people say well we could do this and you ask them there evidence that that is better than what we are doing, and if there is none it is almost impossible to convince people to change if there is no evidence available for them to see that that has worked for them

Q: So hypothetically if that person comes to the table and they say this is what I think we should be doing and here is all the evidence, how well is that received?

Getting people involved gives people ownership of that project, so everyone can see, you are giving information out while trying to get people to receive it, it is a two way process and people will change because they are participating, if you get people more involved they are more willing to change

Giving people information like staff meetings and emails, there is stuff that we are doing with vancomycin at the moment, someone found a problem and we decided to set up a program or a little trial to see if that was telling us what it was really telling us, is it true for our patients

We did have a graph and people input, where everyone was involved

I think with the vancomycin everyone could see as they were doing it they could see what the results are, and they can actually see that there is a need for change

Sometimes if there is a lot of evidence it is really hard for example with a the button holing project everyone wants to do it and it was really inappropriate because a lot of the people that were contributing didn't have the proper guidelines, they just had this idea, and they hadn't read all the literature even though it had been provided they just got the idea and said well it's been research and that is a good thing and everyone should have it, which was not quite how it should have happened. There are some distinct guidelines that need to be followed, it was probably because it was such a good idea and such a good job had been done researching it everyone thought that that was great and everyone just wanted to be doing it

Q: Do you see your unit as a society, how do you see that social structure within your unit?

Clicky, in a way, more so the units not the people, currently the PD unit is very separated to the main unit because of the location, there are certain groups that will go out for dinner and not invite the rest

They are still living in their day and time when they were on the wards, so they still advise us from what was right back then, not necessarily what may be right for now

Q: Does that scenario ever effect the dissemination of information, the sharing of information in the unit?

No not really, I don't think so

In another way the unit is very close, sometimes too close because you have got long term nurses, they all know each other, they know everything about each other for the last 20yrs good, bad and indifferent

It is probably the same type of environment as the nephrology nurses network, there is a core group of the same nurses that have been around for a long time, there are always new people there but you have still got that original core and when people come on, it is a really good group and you have got people that you can talk freely

and people will listen, so you get impression right from the beginning, so that is what makes it a close knit group

Q: Does that translate back to the clinical areas?

I think it does, I think that communication is sometimes an issue within the unit as it is anywhere, but I think that most people are certainly good at sharing stuff or talking about stuff, especially about clinical stuff, I think people are quite open and upfront about what their opinions are and sharing those with each other

Q: If there is an innovative idea that the RBH have done, and have done it for the last three months and have shown some good outcomes, where does Townsville sit from an adoption perspective are you early adopters or are you laggards when it comes to adopting things that another organisation has been doing ?

I think it depends on what it is, because if we don't have any problems with whatever it is for example our cannulation

I think that we are on par with all the other units within Australia

When you go to conferences and you have discussions on research and you think well we have done all that

Q: Is there ever an example where you lead the rest of Australia?

Self-care dialysis in hospital settings in indigenous communities

Having worked at the RBH and PAH, what works down there with an entirely different population of patients may not work up here, there are cultural boundaries. We would be more interested in what Cairns are doing

Q: Do you ever look to overseas?

We were a piloted site for a Canadian based program

Q: Has the patient ever impacted on your ability to put in place EBP?

If you want to implement any change the patients question whether you are doing the right thing, because they are so used to things being done this way, they have seen it, they have been doing it for quite a while and if someone comes in and does a procedure another way they question it and you have to explain

Q: Is there anything that has succeeded or failed because of the patient?

I think we have had trials that have succeeded, it was just a matter of telling the patients all about it and the outcomes and how it works for them and what is best and they were willing to have a go at it

I think you have to explain really well to the patient, when I was working at the PAH and had come over from the RBH they didn't flush their needles with saline, as

a cost saving measure they withdrew blood out of the cannula and then flushed it back in and this patient cracked a wobbly at me because I hadn't flushed her needle

That is what I mean, change their habits they don't like change, the chronic disease patients, they are so used to seeing the same thing over and over again, they don't like any change. For example, today I went back to the main unit and I saw a patient, he suddenly lost confidence in me totally because he has not seen me for a long time, because I decided that I would put two needles instead of one, I made a change, because they had been using single needles. I kept reassuring him, it took me a while to reassure him nearly half an hour, I managed to put two needles in with no problems. I tried to explain to him the two needle thing that it is better dialysis than the single needle

Q: So what you are leading to there is the patient perhaps affects the nurses' confidence?

Yes, definitely, for me I have been in renal dialysis for 15 years, but the patient can knock your confidence. If I wasn't a good cannulator I would have been very hesitant

I think sometimes we do it to ourselves, for example if I cannulate a patient I might say to him this is how you should have your cannula and this is how I will strap it for you, and next time someone does it you should tell them how to do it, and then the next person comes along and you may think well that is not exactly right, and we create it, we shouldn't be so black and white, just because I do it this way doesn't mean it is the only way to do it. I still do it now, it is happening all the time

Q: Are nurses creating their own barriers?

Sometimes, not intentionally but sometimes

Because we tell the patients that what we are doing is gospel

Patients grab on to any little thing, they have a perception that even though you don't say that one particular way is wrong that if you are the person that they trust, the next person should do the exact same thing the exact same way

Patients become so ingrained in their own treatment

Q: Is there a common theme amongst the patients that you see on a regular basis that might be a barrier? Someone mentioned culture before is that a big barrier for EBP?

Yes definitely

I don't think that that is a barrier for EBP

Q: Would this restrict you from getting something in place that you would like to?

I think it is a barrier for the actual research not implementing, culturally it doesn't make any difference, if you say to your patients that this is better for them and explain to them why, and do it properly, you might have to use simpler language especially if English is not their first language, then they will get it. In terms of EBP, I guess it is coming back to the catheter stuff that we were looking at, is that if you don't strap that down like there is no tomorrow and you are sending somebody out in an area where there is no running water, no electricity and a dirt floor you have got to expect that it is going to get infected. You have got to go about it with EBP, which is why we were really keen to put our hands up in that project. What we see is that most of the evidence comes from in hospital, inpatients where it is all a controlled environment, if you live in a park it is not a controlled environment

Q: Are the clinical trials that we do realistic?

Depending on the area that is being done

When you do a literature search you read it and look at the patient group, and think that that does not apply to me, if it is done in an ICU with unconscious patients it does not apply to me. If I am going to have to send my patient out in to the park and I am not going to see him for four days I have got to know that that dressing is going to stay intact

If you do statistics and say for example that Townsville got 95% infection compared to PAH who only got 45% infection and you haven't documented that the control group was mostly indigenous that live in different areas then of course they are going to be different, you are not going to be able to use it as an analysis. It is not that one group are getting better results they are getting different results because you are looking at different people

Q: How does your work environment affect you ability to adopt EBP?

The workplace is busy, extremely busy, I think time constraints are going to be impeccable to any successful research. You really need a lot of time to get it all right, research has to be done just right, you have your control group where you compare against your other group then you can see the results properly, but when you don't have time you can't

The other thing is that with environment with nursing staff, if you had a Mt Isa group you are going to have the same two nurses that are going to do that same dressing every time, compared to a big city hospital where you have lots of nurses that move between different units within renal. People read instructions differently, some people might do things really quickly and some might do things really slowly and make sure they dry it. They change with the amount of nurses will effect it to, and how consistent it is

You have some patients that are really good and do all the right things, then you have some that you tell them one thing and they go and do exactly what they want to do

A lot of the patients in the renal unit, their health is not the best they are extremely fragile, their immune system is more compromised than some from the satellite unit. You are definitely going to get a higher rate of infection, because their immune system is so compromised. If you are well you get sent to the satellite unit because you are well but if you are not then you are at the renal unit

The learning environment is almost non-existent because you are so busy, you cannot get people of the floor to do education because we are running so many patients, there is no gap. The learning environment at the moment is far from what it should be

Specific written statements of nursing behaviours that further define what a nurse in a specific area of nursing should be doing don't appear to include research, in fact my performance appraisal has never included this

I don't intend to focus on research, why should I?, the organisation never encourages it

Q: What about your access to information?

There are never enough computer resources, we need more

Computers are scarce and when we do need one they are occupied

There is the computer system, there are books, there is quite good literature that is updated every month, we are the closest unit to the library, every computer in the hospital has got access to CKN on it so you can get access to medline from anywhere, and getting access to it is never a problem. There are time constraints depending on how busy the unit is. There are enough computers and when I go out on the floor someone has always got CKN up and they might be looking at mims, or looking up things that they don't know what they mean and people do use it all the time. We are all very good at accessing stuff

I am the only level one here, but from my perspective we do have a very good core of very knowledgeable level twos that even though I am not a novice anymore and I am competent the level twos are excellent resources

Q: How do the level two nurses keep their knowledge up to date?

Further education, doing research. Although I don't believe our quality unit do real research. They collect data and do exercises, but it is not rigorous, it is just not in their processes

Not very well as they are limited to giving the drugs and doing the doctors' orders

All the level twos have to annually submit an action research project to the DON

Q: How does the organisation inhibit or drive your ability as a clinician to do your job and apply evidence?

We get a lot of support from everyone, I find that the doctors are quite proactive, the NUMs, I can say that the research that I have done so far I have been given a lot of support. The ethics committee was really good. Everyone was so willing to help out and make sure that thing got done on time.

Our hospital does help you, they run sessions and workshops on EBP

Under E learning there is a program for research as well

I found that the librarians were very supportive when I was doing some research, they showed me how to access things and look at databases

Q: Is there anything negative with the organisation?

After you have done it, acknowledging what you have done. It is always do, do, do and once you have done it there is no acknowledgement

I did get a letter, so I can't say that

I didn't get one

The annual research is part of your job

We do get access to funding to go to things

We have a renal fund where you give \$2.00 a pay and then for anything you can go to them and ask for funding, for personal development

We got SARAS leave when we went to uni, I thought everyone got SARAS leave because that is part of our organisation, but other hospitals don't give it out

On the flip side: I know our patient care standards are excellent in fact I am very confident, however I don't believe I have the so called evidence to back it up.

I think nursing is just getting busier, with our workloads growing as the nurse to patient ratio starts to widen. This is a real issue as we would like to do some of these activities as we really do enjoy them

Q: If you wanted some financing from the organisation to purchase some new equipment how would you get that?

It would be very difficult

They are good with some things, but when it comes to big purchases it is difficult because there are so many other priorities

Q: What would be considered a big purchase for the organisation?

Equipment wise we looked at getting a ultrasound machine for vascular access, you can map flows, you can map a lot of things on it, but we couldn't get funding for the

proper 'you beaut' one, three years later we got money for this little one that was three years out of date

We have to write business cases

It depends on how they are at the moment too, and it depends on how much money is available too, sometimes you get a feedback from a business case that they say that they will support this but there is no money, in principal they support it but if there is no money there is no money

The hospital has done so much in opening the new hospital. It depends what is the hot spot. The Oncology unit is now the far North Queensland cancer service where they have put all these project officers on, extra doctors, extra social workers, they have put millions of dollars towards cancer which is needed but other areas tend to lose out because the extra funding goes to other areas. The Emergency Medical Unit is another one because the publicity was negative about the waiting time in ED, so they put another unit that they travel to from ED so patients are not stuck in a hallway. Any excess money you have got to really fight for it

When we have only two nurses for 37 patients, certainly they cannot provide a good care. They can only monitor the blood pressure and give the drugs, there is so much work, sometimes the patient is discharging and I don't know his/her name and history. I only have done routine for him/her. We are running throughout the shift, but always something sounds me that things are left undone

Q: Is there any political influences that might be a barrier to adopting EBP?

I think that you have to go through so many channels now to get anything, you have to go along so many stepping stones before you get a yes or no answer

You might get it through the institute but then you have to get it through the executive after that, each institute or executive have many different decision makers along the way

I have just come back from Mt Isa and we were looking for someone to do the stores so the staff didn't have to do the sores. The staffing is under Townsville and all the other support services are under Mt Isa, it has gone on for twelve months to decide who was going to support the staff to get these stores off the trolley, unpacked and into the shelves. It was very political, it was through the DON there to the executive here to their finance person who wouldn't speak to their DON. People wanted written documentation, a written agreement

In saying that I think nurses themselves can do some damage in that process, you can't just go to who you think is the most important person and demand that this is what you want, there is a process to follow, you have to go through all the channels you have got to know how to play the game

Sometimes that works for you and sometimes it works against you, in politics it is often the squeaky wheel that gets the most money, because politics don't like bad things to be talked about

We initially had a position that was .4 and funded through our institute budget, no one else had that, we actually kicked it off, the unit kicked it off by putting a part time position, showing that we did have success but we did definitely needed a bit more, it went through a business case through our institute to try and get it increased to full time, it possibly would have happened but because we showed that yes we do need it and we can do so much we got it, everyone wanted to know how we got it and where was the business case. That is part of it too, I guess you have got to help yourself, where ever the power is, is where gets more money. When it comes to the Zonal thing if you don't have people to represent you at the bigger meetings where, you can have ten people all saying that this is important and I have got to have this, you can't have one person from Townsville saying we would like this, you are not going to get anything. It is happening, even though we have got the same population, the same numbers we still missing out because of the political side of it.

Q: I want to move on to culture, that is organisational, your clinical area, the culture between staff, is it a good or bad culture?

Mostly a good culture

There is a percentage of staff that come and go

I think there are other factors that contributes to that, at the moment the workload is horrendous and increasing, and puts more pressure on you when you are at work

Q: How is the sick leave?

At the moment it is pretty high because we have been doing a lot of double shifts for a long time and I think people are at the point where they are run into the ground. We are not a unit that takes a lot of 'sickies' most people can swap shifts and reorganise their shifts around there other commitments outside of work

People are quite willing to help other staff if they need a shift change, staff are happy to get in and help each other out

We are about to have a huge loss of staff, but a lot of that is not to do with the culture, it is because people are retiring, and going overseas etc.

There would be very minimal staff that has left because of bad culture, people have left and gone to other wards but have come back to us permanently

I think people realise that other units have the same culture

I have been to the wards and they have a high turnover of staff, getting new people every day, it's ridiculous, we are not that bad at all

A lot of the level twos have been here for years, and I think the level one's are given the opportunity for discussion, and being involved, and this is where frustration comes in, and it wasn't in the main unit, it was in Mt Isa, and I did come back ready to leave, you weren't given the opportunity to discuss anything, nobody could do

anything, if you suggested should you do this, it was no, no, no, if you are given that constantly about everything, if you suggested to do anything you were told no, that is not worth it, or that won't help, it's frustrating, it's scary. That was the minority of the unit, it was frustrating, it was rude, that is a one of incident and it is rare

Q: I sense there, that there are a few situations that do frustrate staff, and it is not always an internal influence, it is an external influence that is beyond the control of the clinicians of the unit.

I we do have internal frustrations, obviously every unit has them, and I think that is to do with the type of personalities that tend to gravitate towards a renal unit, no matter where you go, it is because it is a predominately a nurse driven profession. Doctors come in here and there and write a few things and do a few things, but predominately the nurses do everything else. You tend to accumulate very strong people who want to be in control, and who like to be in control, and I can say that because I am one of them, so therefore you have a very strong group of people. You do get some frustrations when you get two very strong, determined people who both want to do something different, you get that, and that sometimes gets frustrating within the unit, and I'm sure we have all been there when you thought that this is the way it should have gone, and it didn't go that way. Renal attracts people that like to be in charge, and who like to do their own thing

Q: Has the ward ever profiled personalities before?

We did a workshop that looked at the different personalities

There was a course that our organisation put all the NUMS and Nursing Directors through, it is only the second time this one has been run and it is actually surprisingly highly recognised. The first day of that was at the army, like a boot camp, it was full on, you climbed through obstacles, under things, swinging on ropes. I found that really interesting, how different people coped with it and to see how your boss coped. It was non-stop physical group work all day as well as these obstacle courses. At the end of that we had these take home things and it was personality tests that we did. And it was quite amazing the differences between everyone.

Q: Do you think you have any innovators in your unit, that are always looking for something new?

We have got a few, they come to work and say look what I've found

Q: What about thinkers, do you have any?

I can think of one

Q: Then you have other people who are at the other end of the spectrum who are quiet, they are quiet achievers that may have good ideas, and are usually really good clinicians, but just don't speak up as often as they should, is there anybody like that?

Yes there I some people like that

Q: Do you think that that quiet person ever impacts on EBP adoption?

They have a huge potential to. For example we have a staff member that not many people would have thought of as a person that would get out there and go hey everyone I'm doing this, but when she is actually doing things in the unit, for example doing the access, everyone respected the fact that you were doing it because you did do such a good job, you got it up, you got it going, and I don't think that many people would have given this staff member the credit prior to that, that she had the initiative that she had because she is not out there showing initiative all the time, she was a quiet achiever. It was pretty good how that came off, because I personally wouldn't have thought that that staff member would have been suitable to do that, I might have put someone else there who is probably more out spoken

Q: Is there anything negative about you as an individual that you believe might restrict EBP from going ahead for yourself and others?

Time constraints, I know the thing that we should do, I look at things and think we have to do this because it is really good, and then I think that I just don't have the time to do that because it is going to take so many hours, and I just don't have the time, and it goes in the too hard basket. I could restructure the way I do things so that I do it.

I was alone on the medical floor when a case of cardiopulmonary arrest occurred. I called the code, prepared the CPR trolley, began CPR and inserted an endotracheal tube before the doctors arrived. Fortunately the patient rescued. I was certain of my own knowledge and ability, but many nurses wait for doctors, because they lack self-confidence

I just feel like there is too much information for me to handle

Q: Are you talking about your self-drive, to go beyond that point and say no I just have to do it?

Yes, but staying up to 2.00am in the morning, I just don't want to do it anymore, what about your family

You have always got to put your patients first, so sometimes it doesn't matter what you think is important, you have to prioritise

And there is some of the organisational stuff that could be put on the back burner

And sometimes it is about the motivation, sometimes you just don't have the motivation and you think that that can be done tomorrow, you want to you just don't

You know you are going to need assistance with big projects and you know you are going to need a lot more people to get it on board

I think sometimes communication is a big issue, if somebody says that this is the right way to do something, this is EBP, this is what is going to be brought in, I'm going to say this is how we are going to do it, this is how it is to be done. I am thinking that if it is the right way to do it, then this is how it should be done, if you tell me that my way is not right well that is fine you go ahead and do it your way. That is what frustrates me

Q: So if you are over enthusiastic about something, is that reflected negatively on people, so people think that of someone being just pushy?

Yes

Q: Is there anybody in the unit that has a more calming effect, lets just take a step back and settle down, because yes you want to do that, but we need to take small steps?

I don't respond well to people who tell me just to settle down and don't worry about it, but it is a worry to me if something is not done. Whereas if someone comes to me and says come on I'll help you, or let's do it after we have done this that is much more calming to me, whereas to someone else they might need someone different

Q: If you can think about communication within the unit, particularly from an information flow perspective of EBP, how you share information, how do you get your message across, anything about communication flows that you can think about, positive or negative, and it doesn't have to be nurse to nurse?

I think that we need to utilise teleconferencing more when you are implementing something new, to make sure all areas are not left out of the loop

Particularly that we are away from other units

Q: Do you have a communication book where everything that is going on within the unit at that particular time staff can come and have a read of it

Sometimes you are so busy that it takes time to get the information through

I read the minutes from the ward meeting and because there were just points, I didn't know what had been talked about, and that is because we had an AO staff member that didn't have any renal background taking the minutes

Q: What about information flow from the perspective of journals, are there journals ready for people to pick up if they can?

There are journals but if you pull them out, they go missing, there are also a few textbooks that have also gone missing. Everything is there in an office, but they are only available when the office is open

It would be better if there were journals on the table in the tearoom, so they were there when you were having your break

They used to be on the tea room table and we lost more than anyone ever read, which was unfortunate, then they were in the cupboard in the tea room, and we lost a lot of them including one of the really good textbooks, because the cupboard was not locked, so that is when it went into my office. People can just walk and take things, because when I'm not there it is an open office, and they are sitting on an open book shelf, but when I'm there at least I know who is taking things. We do have a problem with things going missing

I don't even think that it is intentional, I think that people might pick up a journal and take it but forget to bring it back

FOCUS GROUP 5:

Q: What does EBP mean to you as clinician?

Where there is some research being done, and you have been provided with some evidence, and that is decided that that is best practice, and then that best practice is then instigated in your area of work

Much the same, it is where a lot of research has to be done first, and from there you have a consensus is drawn that this is the best practice and then that is implemented in certain practices

There is proof that what you are doing is the correct way, and you have got evidence to show that it is correct

It is the guidelines that in our setting we follow. It is a body of evidence that we can to where it has been agreed on by consensus and research that that is the best way to do something

The same as what everyone else has said plus, often in nursing practices revolves around old ways of doing things, it is anecdotal, this worked for me why don't we try this, which often works but I think we have often relied on what people say and historical anecdotal stuff. I must say, I don't know a great deal about EBP but I do get the feeling there's more pressure to explain why, it's not just good enough that we have done it before, why are we doing it

The reason we do it is to improve standard of care and ultimately to improve patient outcomes

Many nurses have a general belief that if something works and is not broken it should not change. They can't see that there may be room for improvement or a need to update knowledge or skill

Q: What ways do you apply it, are there particular methods at the Gold Coast that you use to apply EBP, does it vary between clinicians or is it all fairly standard?

There are guidelines that we use to provide our care, and our working procedures

We don't have guidelines for everything, there are some things that are handed down from a person that taught you how to do stuff

Usually it comes from our district policy and procedure, as long as it is the same principal as our main guidelines or policies then that should be ok, it could probably be modified a little bit but applied within our context of our policies and procedures it should be fine

In nursing a lot of things that we do, there aren't policies and procedures and guidelines for that, they actually come as a directive. For example the doctors might say that I want you to do this, and you say ok, so you are relying on them to practice within those evidence based principals. I think in nursing particularly people on the floor will defer to people who are considered experts, things come up that you are not expecting

Experts are even nurses like our education facilitator, and some are experts in other areas

Q: So you have got written policies and procedures and you have got expert opinions at the bedside, are there any other ways that you think as clinicians that you apply EBP?

I think there are experiences that count. Sometimes when you are practicing for so many years you learn what works really well and stick to it

Journals and current literature

We did start a journal club some time ago, people would bring journal articles and discuss it

Sometimes we did have different outcomes from that, I remember that an article that one of the staff presented on parathyroidectomies and injection of the parathyroid gland and we discussed that with our doctors, and a patient had it done, and prior to that we would have never thought about that

Recently we introduced the care plan that was based on an article in a journal, we adapted it suit our patients

Q: That is another form of evidence, is that care plan written day to day or is it a structured care plan

It is basically the guidelines that we look at every month when caring for our patients

Q: I want you to think of innovative ideas and innovative technology, how long would it take your renal unit to adopt a new innovative idea that was beneficial to the patient?

Months. It depends what it is, it depends, if it is something that is nursing orientated I think we could get things quite quickly

I think everybody likes to be involved in the decision as well, a lot of the time if you say that's going to happen, a lot of people want to know why, people want to see the evidence and know why they should be doing it. I don't want to do something if no one is going to tell what the benefit is to the unit or the patient, I don't want to be told that I just have to do it

And also there is the safety aspect, you want to make sure that it is safe. I think the thing with the button hole cannulation, that was pretty innovative to do that, whilst we had all heard about it previously it wasn't something that we just jumped in, and we thought about it, and even when we thought we could do it, we still thought about the pros and cons of introducing it. When we realised that there were more advantages than disadvantages that was when we thought it was worth introducing it

I lack confidence in other nurses, particularly new nurses as I know the information we are currently using to guide practice lacks substance, and I fear they will be lead astray. I know I make decisions based on my experience rather than what is in the text book, but they lack this experience

Q: Is there a formal process here that you go through to introduce something new?

The government committee, which is very new, because in the past the person who cried the loudest maybe got their own way

And now all the key stake holders now get to have a say, and everyone can say how it impacts

In my experience, unless you have people to drive it forward it can sometimes just sit for a while, so I think people need to take ownership of ideas and meaning it

I have felt frustrated many times, when I have made decisions and have needed to be supported by the higher managers, but they didn't support me

Q: Think about new staff that start in your unit, if they come along and say I don't do something that way, I've never done it that way, I think we should do it this way, how is that received in your unit?

A lot better than it used to be

Everyone values experiences that people bring with them

Ideas are welcome and then we might investigate if it is really good

It will be questioned, if you can show me, I might try it

You would want to look at our guidelines and the evidence and search out why it might be better than the way we are already doing it

our academic education is held well but when the students enter the practice environment, they are faced with some particular organizational behaviors that are task oriented and inhibit independent decision-making, particularly related to new research evidence

Q: Has anybody ever experienced that during their career?

I have, not in renal, but I have come in and said that that is something that I am not used to, why do you do it like that or you could do it like this, and you are told that you don't do it like that

I think that if you go into an area where they are doing it differently, you do question, maybe because in the past the way you have done it you think that is the best

I think that would be a really positive way to look at it, but I think that a lot of people look at it as if they are being told that there way is wrong. I think that will change with time because I think you just have to jump on the train really, don't you, otherwise you will just get left behind. You have to question.

Q: Do you think your staff are supported really well with their transition here?

Yes, they are

A formal educator's position has just been created here, and that helps new staff, and they are really well supported

I have had a staff member come to me and say that her transition here was a breeze compared to what she had anticipated, she had come with no prior experience and she was so thankful

Q: A lot of the literature refers to nursing as a society, do you view renal as a society and do you view your unit as a society, and if yes why, what makes a society and what is good or bad about a society?

A society is sharing common themes and goals, and norms as in what is Ok, and a lot of unwritten and written rules, I think that we are a quite tightly knit group

We are separate from ward nurses, our patients are more outpatients, they are a different clientele, I think that makes closer as a unit

Q: Do you think anybody ever feels left out in the sharing of information in renal circles that you can see, or do you think fairly open where if you want to learn, you can learn?

I think there are certain people that might say that they do feel left out when they first start because of the fear of other people, especially when some of the nurses that work here are really very knowledgeable in the area and they have been in renal for a really long time, it can be a bit daunting, people might think how am I ever going to fit in, and that you won't feel like you are part of a team, and that is sad

Q: What do you think makes them feel that way?

I think that is lack of knowledge and I think that is the feeling that you will never be as good as them. I think renal is one of the harder areas to move into

The one thing that I notice is that people tend to stay in renal for a long time

We were at a function last night and you look around and you know everyone's faces, you might not know everyone's name but you see the same faces

Coming from another area, this is the one place that I have been to that you people that have been here for such a long time

So many people advance in renal, and you get to the stage where you all are as experienced as each other and you almost get to "too many chiefs" syndrome, because we are all on the same level

If you look at the staff turnover, it is not huge and people do stay on, once you get to a certain level you can't move on then you have all the new staff get to that level too, and you have all these people at the same level, providing the same level of expertise. In the ward areas where there is a constant turnover of staff you always have the chief and Indian

I think people are getting to that level quicker because there are greater opportunities now, culture has really changed. Particular getting a director in renal has got us all together really thinking, having the right person in that role that encourages you to think laterally, and all these other opportunities seemed to open up. We have new positions within the unit and the unit is expanding and we are all growing with it

Q: Getting back to innovation and adoption of innovation, if you could think about it on a scale; you have got lagers on one end of the scale and innovators at the other end of the scale, and you have got early adopters and late adopter, where on that scale if you rate your unit?

I can say that there are some lagers maybe because they are young

I think that we could be more innovative but we are held back by funding, and people don't tend to put themselves out on a limb, you might think that something is a great idea but you don't have the support, and it is such a timely exercise thing to do. You need the right education, you really need to know what you are doing, if you were to read a article there are certain things that you need to know so you get the right information out of it, and that takes time, education and practice. I think that we have recently received some funding for a research nurse, so that will coming soon

Q: If you had to benchmark against PAH and RBH where do you think you sit?

Better

If we benchmarked against a tertiary hospital in Melbourne we probably wouldn't be up to their standards

Just adding my thoughts on the society issue, we work as a society within our district, but there is also that competitive nature, say between GCH and PAH, I think we are on par given the resources that we have got

Q: Does patients in your unit impact on EBP adoption?

It is like the HDF patients, you put them on it and they say it makes them sick, there is no proof as to why they would be getting sick from it but they refuse to let you put them on it anymore, and you want to bring it on because you know that that is the best thing for that particular patient at that time

They are used to the norm and they don't want to change

And also getting conflicting opinions from different nephrologists, and often refer to some of the ideas that we have as witchcraft. So there is that lack of communication and respect. For him, his evidence is the best evidence, and I think that is what people that agree with EBP do, because you can't you, you can read something and get something from it that you want to prove and support what you want to do, interpret the way you want to, and there will be another body of evidence to say something else

There is so much evidence out there people do better to dialyse longer hours or home patients, you can talk until you are blue in the face but if it doesn't suit the patient they won't do it

Q: Have patients ever come to you with evidence?

We have had one patient that had researched over the internet, and found that he could be dialysed more efficiently with a different dialyse

Q: How was that received?

Where do we get it from? Because we know that that is the evidence, because we can dialyse more efficiently, I think we did, we put him on a different dialyse

There is so much stuff out there, you hear it all the time, watch the internet, so if you don't know how to critically analyse something, for me I don't know enough about it

Q: Do you think nurses don't know how to interpret or critique something?

I had to do a presentation, I wrote it myself but I knew that I could go and find something to support it, you can find something to support whatever you want to say

How it is interpreted by people that conduct the research depends on what particular result you want, you go about it a certain way to get that result

Q: It is a pretty big barrier, there a lot of journals published every day, how do we filter through it, how do we get that information to the clinicians, how do we get the clinicians understand and trust that information, and how do you know that that is good information?

You need to find exactly what you want to know

When articles come up, does anyone make a recommendation as to how you would mark an article on its validity, is there any process that we can see if a category has reached a certain value, so we know that it is strong here but weak here

Q: There is, in systematic reviews there are different levels, and you are critiquing the journals yourself and it is a skill that you can develop, but how do we get that skill to all nurses?

That is a good point, to be able to pick up a journal article and be able to critique it and determine its reliability then that would be a good skill

A lot of nurses weren't educated in university, I wasn't, and I haven't done any clinical education since that university level, and I think that a lot of the nurses coming out have had more

There is someone at the hospital that we can get training from in doing proper literature searches, but we just don't get the time to get there

Q: How do you get access it?

He has a speed dial number, he runs clinics, but we don't have the time to access him

You would have to set aside dedicated time to access him, possibly the nurse educators/facilitators might be able to access him, but it is more difficult for the nurses on the floor

It is practice time, you need time to practice

It depends on your level of interest

You're in no man's land, for most nurses they don't have a clue

Q: Is it put in the too hard basket for the majority of nurses?

There were workshops to learn how to research evidence, but they found that there was so much effort went into that, in preparing for the workshops, with very little outcome, no one was attending, so it was scrapped

EBP requires a significant investment of time and energy, so I don't know priority wise where most nurses see it, I don't think that it is up there, even though it should be because it is linked to best practice and best outcomes so its changing that culture

I think we are simply overloaded with too much information, we can't absorb it all

And sometimes it is nice to have the more senior people to make the guidelines and you just do it, and they obviously know what they are doing they have done the guidelines

Q: Does the environment impact on finding EBP and implementing EBP?

We do have access through QHEPS to access journals, but it is limited

We only have a few computers in the unit and we have limited internet access

You can get access the libraries electronic catalogues through our desktops

But for those journals you have to import them from other organisational libraries and it could take two weeks, that would be quick

I don't understand why our organisation can't let us access relevant sites on the internet

Q: Anything else with environment?

Lack of office space, we could use more space for people to be able to do computer work, at the moment we have three people sharing one office

There are clinical education courses that you can do online, and EBP is one of those, but not many people know about that

I think that if the organisation wants it to be part of your practice then they have to make it a priority and feed it down. Historically the really well financially resourced disciplines of medicine that have had really good research teams, for example cardiac get all these trials and all this money, because people die from that, so that is the motivation to investigate stuff, and PAH is a good example with their renal because they are a tertiary hospital and they conduct a lot of research, they have data managers, research assistants, if you want something you can call somebody up on the phone and ask them for help, and you can make an appointment to see somebody the next day.

Q: Tell me a little more about the organisation, how are they in supporting EBP?

I have given up on trying to do research or start some form of quality improvement, the organisation is just never supportive

I don't see equality in it

I think they do support it as long as it goes along with their goals, as long as it is financially orientated. They are interested in patient outcomes but it is hard to get the money for these things, you might be able to show that is great to do daily dialysis, but how do you do it. I was looking at a thing today, the NT has no home haemodialysis and reason that I think that is because it is so much more expensive to

get the indigenous population home, and keep them home, it is cheaper to dialyse them in a centre, but Your organisation would never admit that, they always say that the reason we get people home is because of their outcomes, but if it is more expensive would we be doing it, no, I don't think so

I think in some ways they are supportive and other ways they have their own agenda

I think it depends how they cope, the organisation is made up of individuals of different levels, so what are there view about it, are they from a clinical background where they might understand what you are talking about or are they in administration where it is not something that they would really think about it and maybe they don't work on it. Nursing directors don't necessarily have a lot of nursing experience that is current, they should be up to date with what is going on, but often they don't

Q: You have bridged over to financial. Financially how does that have an affect on your ability to adopt EBP?

Somebody needs to come up with some solutions that will free our time and provide us with the funding, resources, and time to do these things, only then will we have the capacity to consider research in our core business

I think you will never have enough money to do everything that you have to do to make the best outcome because you have a limited amount of money, the big picture is that you have to make things work within a budget, because people might end up dying because you don't have enough money, you can't put all your money into one area because that would be the best thing for those patients, because it is not the best thing for all patients. So you can say that they are not supporting our unit, but is that because they are supporting someone else that needs it more

Q: If there was a piece of equipment that you really needed and without it you were putting patients at risk how do you think it would be received in the organisation?

I think once it affects the patients and the patients take it further then yes

It depends on who is asking for it, how they push it and how they sell it

It is sort of like you know what is coming and you know is you don't do this that it will have an affect but because the government works in cycles we don't look long term like clinicians do, these patients in five years time are going to be in a bad way but in five years time the politicians might not be here, so I get that feeling that they only look at the immediate things, as you go higher up you get that feeling Sometimes you have to do it before you can prove it to them, you have to go through the motions, you actually have to sometimes do it and be sneaky and say well now we are actually doing it so look, you have to use the back door, which is really wrong

Q: Can you think of an example where political gain has influenced something in your own unit or in renal?

What about the last election where they said they were going to put more dialysis chairs at Robina, they make a big public announcement, and then we got these chairs but we had nowhere to put them, there in a shed. When they came down to speak to us you think do you want to hear what you want to hear of do you want to hear the truth, and you try and tell the truth and you are told to keep your mouth quiet

Q: Tell me about your culture here, is it a good culture to work in?

I think it is a great culture

Q: Does that have a positive influence on EBP do you think?

Yes I think so because people open and are accepting and trusting of everybody here so you are more open to ideas

It is a positive culture

If everyone around you are excited and innovative

Q: Do you think you are part of a learning organisation?

Yes

Part of that EBP is taking risks, the fact that you are changing things and you might make mistakes and you can only do that if you feel safe to do that, and I think that that comes from a no blame culture

I think there is a process that if you do put something in place and it doesn't work, you can stand back and learn from it, and something good usually comes out of it you just have to fine tune it a bit more

Q: Do you think the process of innovation affects you ability to adopt EBP?

I don't think that dialysis machines get changed that quickly, and we have not had a problem keeping up, I think that it is easy to keep up with what is going on

Q: What about the outflow of information, new information, is that an issue, are you able to keep up with that?

We are probably a little bit late but we do catch up

We have got new charts, and that all came at once, and some people said that they were having trouble

Because it is a more prevalent concept now, you hear it more, you see it more, everybody is talking about it more, it is a bit more like jumping on the band wagon because everyone is doing it, so you have to do it too

I find it is a whole lot better now that you all decide what needs to be doing, because people ask if they have missed out on anything and you can do group information sessions

I think emails are a vital part of communication, because so many of the staff are part time you need to get the information out to them, we have communication books, care plans, I guess sometimes they are not used to their full potential

Q: Can you think of any barriers that affect communication between staff, not just between nurses but all clinicians involved?

The medical record system, so much paperwork

I think it is up to the individuals, some are better at communicating than others

I have had staff members say to me that they didn't know about something and I have said that I have sent them an email, and they have said that they have deleted it and not read it

I think that sometimes we rely too much on verbal communication, and I think that is a reflection on time management, and with the expanding service, we have so many people that we have to inform at once

There is a lot of information that is freely available to us, but people choose to not know that it is there or not learn, I get a lot of questions about patients and the information is there you just have to go and look it up and some people expect that someone should have told them but the information is there they just have to look, so there is that choice to not inform themselves

FOCUS GROUP 6:

C: What is your general understanding of what EBP means to you as a clinician?

I think it is the developing of procedural point of view, it is quite useful to consult literature so that you feel that you are on the right track with something, and that someone else has done it before you, and it is also nice to develop things that you theoretically believe to be correct. Maybe try and create your own evidence, and I think for a small organisation like us we really need to write our procedures on evidence based stuff so that we cover ourselves so we actually comply, and we have taken the best course of action for that procedure

My understanding is that it is research that is being done that is put throughout committees so that we can implement it to get best patient outcomes

C: How do you think you apply EBP, in what ways do you apply EBP in a day to day practice?

We have to follow what the work place policies are, if the policy is one thing then unless you have other data, you have to follow the policies that are based on EBP. It makes it hard for you to implement EBP without the support from the management

You have to follow a procedure that has looked at the evidence, having said that if you come to me with an idea and you might think that we should be doing something different then I have another avenue to consult with other managers and say let's give this a trial and these are the parameters that we will look at. If that works and it all points in the right direction and we get a better outcome and we achieve what we wanted to achieve and it has improved and then we will change our practice across the network

The policies are always being updated because of new research. We have got the channels available to say to the manager that we need to change and update our policy manual, it is not set in cement, it is open to interpretation and if a new result has come about then we adopt it

C: How do you become aware of EBP?

Inservice and training

We are constantly keeping up to date, I am a member of a journal and am looking on the internet, and because you are on their mailing list they are constantly sending you things because you are in the field

We have access to an internal web site that looks at all articles that come out and all media releases and everyday they will release a synopsis, some of that might be completely irrelevant to you, it is quite unique because we have international evidence coming through

A competent and powerful nurse is the one who has rich knowledge and skill, and is expert in his/her own job

I believe that self-confidence provides the nurse with the feeling of control and ability to influence the situations and increases the possibility of making independent decisions

Q: What degree do you believe social context can affect the acceptance of evidence based practice?

I think it can have a real impact, ours tends to be a positive social context and very sharing.

We as a group are very cohesive and work well together, however externally I feel we could collaborate more on EBP and any generic problems we may encounter.

Q: How do you think patient context affects the acceptance of evidence based practice.

Patient context can have a real bearing on what we try to achieve. Particularly if they are not agreeable to changes.

I think even family members can become barriers and distractions

I have had one patient that insisted we did for him exactly what was performed during his last episode of renal failure. He said if he didn't get the same treatment he would leave.

Q: What degree do you believe the organisational context affects the acceptance of evidence based practice by nurses.

Despite the complexity of our health system and the web of structures, processes and patterns that underpin it, innovation has been successfully adopted in it .

For sustained learning to be created there needs to be the development of a strong infrastructure that provides skill development, and a knowledge bank of information about factors that impact on program effectiveness. I don't think we yet have this

Investment in identifying and spreading effective innovations is vital. Again we don't do this.

There is a need to create a system that identifies the programs that are having an impact, understand why they are having an impact, and share this learning with other organisations across the primary health sector. Again we don't do that

I just don't simply believe that our organisation is supportive of research full stop. I actually view current organisational practices as the biggest obstacle to change in practice

On one hand we are encouraged to ensure we operate by best practice and update our standards, on the other we are informally discouraged as the organisation takes away more resources and impedes any time we once may have had to devote to research utilisation

If we are to increase the amount of time we devote to research utilization then the organization needs to support us by funding offline time. They need to release us and backfill our roles, otherwise it will never happen

I mean that I should have the authority and permission to do my job, to be able to do what I can do in my territory, and I must have the right to do nursing care based on my diagnosis

I don't believe the organisation is controlling the amount of information flow for new research, we feel bombarded

Q: To what extent does economic and political context will affect the acceptance of evidence based practice by nurses?

Q: To what extent do you all believe the innovation itself affect the acceptance of evidence based practice by nurses?

Q: To what extent do you all think the individual professional affects the acceptance of evidence based practice by nurses?

Physicians are seen as major obstacles to implementation of research. We may have clear evidence that we should change practice, but if they don't want they won't change it, it's that simple

I am entitled to a study day once a month apparently, but I am yet to ever have one after three years. Patients' demands come first and there are never any staff for backfill

I understand the need for formal review of our practice standards, and I understand the need for regular audit of this practice, I just can't see where as an individual nurse I can fit it into what is already a very demanding workload

Appendix 2: Survey Instrument

Evidence Based Practice Utilisation in Nursing Questionnaire:

Demographic Data:

Age:	Gender: M / F	Years of Experience: 1-5, 5-10, 10-15, 15-20, 20-25, >25	Health Service District:
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Survey Questions	Please tick appropriate response	Agree	Partially Agree	Undecided	Partially disagree	Disagree	Not sure
© Research reports/ articles are not readily available							
©I am made aware of research outcomes							
©Statistical analysis are not made clear in the literature							
©The relevant literature is not compiled in one place							
©I am isolated from knowledgeable colleagues with whom to discuss research evidence							
©The literature typically reports conflicting results							
©The research is not reported clearly and readily							
©The amount of research findings being produced is overwhelming							
(S) Implications for practice are made clear in the literature							
(S) There is a fear to try something new							
(S) Other staff are never supportive of new evidence							
(S) Doctors will never cooperate with suggested changes							
(S) The clinical unit itself appears to have a negative affect on the way staff make decisions based on new evidence							
(S) Unit norms appear to influence staff behaviour towards evidence adoption and research utilisation							
(I) The research has never been replicated							
(I) Research being conducted is not relevant to nursing practice							
(I) The research has methodological uncertainties							
(I) The majority of conclusions drawn from the literature are not justified							
(I) There is not a documented need to change practice							
(I) You are uncertain as to whether to believe the results of research							
(I) You feel the impact of changing practice will be minimal							
(I) Our clinical unit adopts new evidence on a regular basis							
(I) Our clinical unit produces new evidence							
(I) Change management practices influence the adoption of new innovations							
(I) New innovations are risky							
(I) There is widespread confidence in using new research							
(I) Innovative research is appealing to nurses							
(I) New innovations are beneficial							
(I) We have access to new innovations							
(P)The consumers knowledge affects research utilisation in my work setting							
(P)The consumers skills affects research utilisation in my work setting							
(P)The consumers attitude affects research utilisation in my work setting							
(P)The consumers lack of compliance affects research utilisation in my work setting							
(P)The consumers family influences their compliance							
(P) The consumers condition is know to affect research utilisation							
(O) The facilities are adequate allowing research utilisation							
(O) Executive will not allow implementation							
(O) There is insufficient time on the job to implement new evidence							
(O) I feel supported in my endeavours to change practice based on new evidence							
(O) The organisation has a positive research culture							
(O) The organisation has an authoritarian approach to research							

(O) The organisation has good change management practices						
(O) Communication channels are effective						
(N) I see little benefit in using research findings						
(N) Research is never published fast enough						
(N) I do not have time to read research						
(N) I do not have enough authority to influence a change a clinical practice						
(N) I do not see that value for implementation						
(N) I do not feel that the results are generalisable to own setting						
(N) I do not feel capable of evaluating the quality of research						
(N) I have a good understanding of research utilisation models						
(N) I find research utilisation models to be nurse friendly						
(N) I have received adequate training on research and the utilisation of research evidence						
(N) I find research utilisation models to assist with evidence based practice adoption						
(N) I have the necessary skills to find evidence						
(N) I see research utilisation as a necessary step to continue quality improvement						
(N) New research stem from risk identification						
(N) I regularly benchmark my practice						
(N) Time is a major factor for me						
(N) Accessing new research materials is easy for me						
(N) Research Information overload is a major issue for me						
(N) Embedding new evidence is essential for me to maintain my practicing certificate						
(E) There is a lack of resources for research which affects my capacity to think as a clinician						
(E) Corporate governance supports our capacity as a clinician to utilise research						
(E) Nursing services are costed appropriately to allow for research						
(E) Activities are evaluated for cost effectiveness						
(E) There is sufficient funding for research						
(L) We are slow to adopt new evidence						
(L) New research is viewed as a risk to patients						
(L) Patient errors increase because our practices never change						
(L) Staff fear new technologies						
(L) Staff embrace change						
(L) Our staff generate their own research evidence						
(L) Senior staff lead innovative change						

Appendix 3: Reliability analysis

Figure 14: All variables measured

Case Processing Summary			
		N	%
Cases	Valid	180	100.0
	Excluded ^a	0	.0
	Total	180	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.331	74

Scale /VARIABLES= Related to communication

A# Research reports articles are not readily available
B# I am made aware of research outcomes
C# Statistical analysis are not made clear in the literature
D# The relevant literature is not compiled in one place
E# I am isolated from knowledgeable colleagues with whom to discuss
F# The literature typically reports conflicting results
G# The research is not reported clearly and readily
H# The amount of research findings being produced is overwhelming

Reliability Statistics	
Cronbach's Alpha	N of Items
.672	8

Scale /VARIABLES= Related to Innovation Context

I The research has never been replicated
P# I Research being conducted is not relevant to nursing practice
Q# I The research has methodological uncertainties
R# I The majority of conclusions drawn from the literature are

S# I There is not a documented need to change practice
T# I You are uncertain as to whether to believe the results of
U# I You feel the impact of changing practice will be minimal
V# I Our clinical unit adopts new evidence on a regular basis
W# I Our clinical unit produces new evidence
X# I Change management practices influence the adoption of new
Y# I New innovations are risky
Z# I There is widespread confidence in using new research
AA# I Innovative research is appealing to nurses
AB# I New innovations are beneficial
AC# I We have access to new innovations

Reliability Statistics

Cronbach's Alpha	N of Items
.376	15

Scale/VARIABLES= Related to Social Context

I# S Implications for practice are made clear in the literature
J# S There is a fear to try something new
K# S Other staff are never supportive of new evidence
L# S Doctors will never cooperate with suggested changes
M# S The clinical unit itself appears to have a negative affect
N# S Unit norms appear to influence staff behaviour towards evidence utilisation

Reliability Statistics

Cronbach's Alpha	N of Items
.372	6

Scale/VARIABLES= Related to Individual Nurse Context

AR# N I see little benefit in using research findings
AS# N Research is never published fast enough
AT# N I do not have time to read research
AU# N I do not have enough authority to influence a change to clinical practice
AV# N I do not see that value for implementation
AW# N I do not feel that the results are generalisable to own setting
AX# N I do not feel capable of evaluating the quality of research

AY# N I have a good understanding of research utilisation models
AZ# N I find research utilisation models to be nurse friendly
BA# N I have received adequate training on research and the utilisation of research
BB# N I find research utilisation models to assist with evidence based practice
BC# N I have the necessary skills to find evidence
BD# N I see research utilisation as a necessary step to continuing good practice
BE# N New research stems from risk identification
BF# N I regularly benchmark my practice
BG# N Time is a major factor for me
BH# N Accessing new research materials is easy for me
BI# N Research Information overload is a major issue for me
BJ# N Embedding new evidence is essential for me to maintain my practice

Reliability Statistics

Cronbach's Alpha ^a	N of Items
-.203	19

a. The value is negative due to a negative average covariance among items.

Scale /VARIABLES= Related to Economic Context

BK# E There is a lack of resources for research which affects
BL# E Corporate governance supports our capacity as a clinician
BM# E Nursing services are costed appropriately to allow for research
BN# E Activities are evaluated for cost effectiveness
BO# E There is sufficient funding for research

Reliability Statistics

Cronbach's Alpha ^a	N of Items
-.180	5

a. The value is negative due to a negative average covariance among items.

Scale /VARIABLES= Related to Laggards

BP# L We are slow to adopt new evidence
BQ# L New research is viewed as a risk to patients
BR# L Patient errors increase because our practices never changes
BS# L Staff fear new technologies
BT# L Staff embrace change
BU# L Our staff generate their own research evidence

BV# L Senior staff lead innovative change

Reliability Statistics

Cronbach's Alpha	N of Items
.370	7

Scale /VARIABLES= Related to organizational context

AJ# O The facilities are adequate allowing research utilisation
AK# O Executive will not allow implementation
AL# O There is insufficient time on the job to implement new evidence
AM# O I feel supported in my endeavours to change practice bas
AN# O The organisation has a positive research culture
AO# O The organisation has an authoritarian approach to research
AP# O The organisation has good change management practices
AQ# O Communication channels are effective

Reliability Statistics

Cronbach's Alpha	N of Items
.148	8

Scale/VARIABLES= Related to Patient context

AD# P The consumers knowledge affects research utilisation in my work area
AE# P The consumers skills affects research utilisation in my work area
AF# P The consumers attitude affects research utilisation in my work area
AG# P The consumers lack of compliance affects research utilisation in my work area
AH# P The consumers family influences their compliance with new innovations
AI# P The consumers condition is known to affect research utilisation

Reliability Statistics

Cronbach's Alpha	N of Items
.849	6

Appendix 4: Descriptive Statistics

Context/provisional question

Key:
O= Organisation
C=Communication
N=Individual Nurse
I=Innovation
E=Economic
S=Social
L=Laggards
P=Patient

Survey Questions: N 180		Context	Range	Min	Max	Mean	St Dev	- or +	Barrier, Facilitator, or Unsure
1.	Research reports/articles are not readily available.	O/C	4.00	1.00	5.00	1.4667	.72774	■	Barrier
2.	I am made aware of research outcomes.	C/N	2.00	2.00	4.00	3.3167	.68074		Unsure
3.	Statistical analysis is not made clear in the literature.	C/I	3.00	1.00	4.00	1.5444	.80725	■	Barrier
4.	The relevant literature is not compiled in one place.	O/C	2.00	2.00	4.00	3.3167	.68074		Unsure
5.	I am isolated from knowledgeable colleagues with whom to discuss	N/C	5.00	1.00	6.00	1.4889	.80146	■	Barrier
6.	The literature typically reports conflicting results.	I/C	4.00	1.00	5.00	1.4667	.66349	■	Barrier
7.	The research is not reported clearly and readily	N/C	4.00	1.00	5.00	1.4667	.72774	■	Barrier

8.	The amount of research findings being produced is overwhelming	N/C	4.00	1.00	5.00	1.4667	.72774	■	Barrier
9.	Implications for practice are made clear in the literature	S/C	2.00	2.00	4.00	2.9722	.75065		Unsure
10.	There is a fear to try something new	N	5.00	1.00	6.00	2.2056	1.91056	■	Barrier
11.	Other staff are never supportive of new evidence	S	5.00	1.00	6.00	3.0556	1.82693		Unsure
12.	Doctors will never cooperate with suggested changes.	O	5.00	1.00	6.00	1.9556	1.16668	■	Barrier
13.	The clinical unit itself appears to have a negative affect.	S	4.00	1.00	5.00	2.1056	1.10103	■	Barrier
14.	Unit norms appear to influence staff behaviour towards evidence.	S	4.00	1.00	5.00	2.1889	1.18080	■	Barrier
15.	The research has never been replicated.	I	5.00	1.00	6.00	3.2056	1.68031		Unsure
16.	Research being conducted is not relevant to nursing practice.	I	5.00	1.00	6.00	1.9111	1.08463	■	Barrier
17.	The research has methodological uncertainties.	I/C	5.00	1.00	6.00	5.0556	1.59161	+	Facilitator
18.	The majority of conclusions drawn from the literature are not justified	I	5.00	1.00	6.00	3.0389	2.00937		Unsure

19.	There is not a documented need to change practice	I/S	5.00	1.00	6.00	2.7056	1.6433 3		Unsure
20.	You are uncertain as to whether to believe the results of research	I	4.00	1.00	5.00	2.1778	1.2151 5	-	Barrier
21.	You feel the impact of changing practice will be minimal	I	3.00	1.00	4.00	2.5278	1.2346 5	-	Barrier
22.	Our clinical unit adopts new evidence on a regular basis	S	3.00	1.00	4.00	2.2889	1.0436 8	+	Facilitator
23.	Our clinical unit produces new evidence	S	5.00	1.00	6.00	4.2333	1.0628 3	-	Barrier
24.	Change management practices influence the adoption of new research	I/O	5.00	1.00	6.00	4.1722	1.0822 6	-	Barrier
25.	New innovations are risky	I	5.00	1.00	6.00	4.4722	1.2391 7	+	Facilitator
26.	There is widespread confidence in using new research	S	5.00	1.00	6.00	2.8611	1.3813 0		Unsure
27.	Innovative research is appealing to nurses	N/I	5.00	1.00	6.00	2.4000	1.3765 8	+	Facilitator
28.	New innovations are beneficial	I	5.00	1.00	6.00	1.8444	1.2808 1	+	Facilitator
29.	We have access to new innovations	I/O	4.00	1.00	5.00	2.8000	1.0644 1		Unsure
30.	The consumers knowledge affects research utilisation in my work setting	P	5.00	1.00	6.00	1.8556	1.1439 5	-	Barrier
31.	The consumers skills affects research utilisation in my w	P	5.00	1.00	6.00	2.6722	2.0682 0	-	Barrier

32.	The consumers attitude affects research utilisation in my work setting	P	5.00	1.00	6.00	2.8944	1.9817 5		Unsure
33.	The consumers lack of compliance affects research utilisation	P	5.00	1.00	6.00	3.1667	2.0346 2		Unsure
34.	The consumers family influences their compliance	P	5.00	1.00	6.00	3.2944	2.1290 7		Unsure
35.	The consumers condition is know to affect research utilisation	P	5.00	1.00	6.00	2.8389	2.0199 1		Unsure
36.	The facilities are adequate allowing research utilisation	O	1.00	3.00	4.00	3.5889	.49341	■	Barrier
37.	Executive will not allow implementation	O	5.00	1.00	6.00	2.2556	1.5175 8	■	Barrier
38.	There is insufficient time on the job to implement new evidence	N/O	1.00	1.00	2.00	1.6278	.48475	■	Barrier
39.	I feel supported in my endeavours to change practice	O/S	2.00	1.00	3.00	2.4222	.90902	■	Barrier
40.	The organisation has a positive research culture	O	3.00	2.00	5.00	3.1556	.94439		Unsure
41.	The organisation has an authoritarian approach to research	O	5.00	1.00	6.00	1.6833	1.3180 1	■	Barrier
42.	The organisation has good change management practices	Ot	4.00	1.00	5.00	2.5056	1.4318 7	+	Facilitator
43.	Communication channels are effective	C	4.00	1.00	5.00	3.0222	1.2549 6		Unsure
44.	I see little benefit in using research findings	N	5.00	1.00	6.00	2.2278	1.3152 8	■	Barrier

45.	Research is never published fast enough	I	5.00	1.00	6.00	2.0889	1.48846	■	Barrier
46.	I do not have time to read research	N	2.00	1.00	3.00	2.0278	.75065	■	Barrier
47.	I do not have enough authority to influence a change to clinical practice	N	1.00	2.00	3.00	2.5611	.49764	■	Barrier
48.	I do not see the value for implementation	N	2.00	1.00	3.00	2.2611	.70405	■	Barrier
49.	I do not feel that the results are generalisable to own setting	N	3.00	1.00	4.00	2.9278	.93373		Unsure
50.	I do not feel capable of evaluating the quality of research	N	5.00	1.00	6.00	3.0889	1.13496	■	Barrier
51.	I have a good understanding of research utilisation models	N	2.00	2.00	4.00	3.4389	.74116	■	Barrier
52.	I find research utilisation models to be nurse friendly	N	1.00	3.00	4.00	3.4389	.49764	■	Barrier
53.	I have received adequate training on research and the utilisation of evidence	N	4.00	1.00	5.00	2.7111	1.08050		Unsure
54.	I find research utilisation models to assist with evidence based practice	N/I	3.00	2.00	5.00	3.3667	1.22771	■	Barrier
55.	I have the necessary skills to find evidence	N	4.00	1.00	5.00	3.5000	1.15066	■	Barrier
56.	I see research utilisation as a necessary step to continuing good practice	N	5.00	1.00	6.00	1.5500	.86052	+	Facilitator

57.	New research stems from risk identification	O	5.00	1.00	6.00	1.8944	1.01661	■	Facilitator
58.	I regularly benchmark my practice	N	5.00	1.00	6.00	1.9889	1.46081	+	Facilitator
59.	Time is a major factor for me	N	5.00	1.00	6.00	1.3778	.77788	■	Barrier
60.	Accessing new research materials is easy for me	N	4.00	1.00	5.00	4.2556	.57043	■	Barrier
61.	Research Information overload is a major issue for me	N	5.00	1.00	6.00	1.6333	.90868	■	Barrier
62.	Embedding new evidence is essential for me to maintain my practice	N	2.00	1.00	3.00	1.5333	.87421	+	Facilitator
63.	There is a lack of resources for research which affects implementation	E	5.00	1.00	6.00	1.5500	1.26524	■	Barrier
64.	Corporate governance supports our capacity as a clinician	O	3.00	1.00	4.00	2.7611	1.01036	■	Barrier
65.	Nursing services are costed appropriately to allow for research	E	3.00	3.00	6.00	3.7389	.88667	■	Barrier
66.	Activities are evaluated for cost effectiveness	E	3.00	3.00	6.00	4.2333	.62624	■	Barrier
67.	There is sufficient funding for research	E	3.00	3.00	6.00	4.2389	.61056	■	Barrier
68.	We are slow to adopt new evidence	L	5.00	1.00	6.00	2.4000	1.47076	■	Barrier
69.	New research is viewed as a risk to patients	L	2.00	2.00	4.00	3.4611	.70405	+	Facilitator
70.	Patient errors increase because our practices never change	L	5.00	1.00	6.00	2.0944	1.38506	■	Barrier

71.	Staff fear new technologies	L/I	5.00	1.00	6.00	2.4167	.99650	-	Barrier
72.	Staff embrace change	L	5.00	1.00	6.00	2.6222	1.6174 9	+	Facilitator
73.	Our staff generate their own research evidence	L	5.00	1.00	6.00	2.9278	1.4417 2		Unsure
74.	Senior staff lead innovative change	L	4.00	1.00	5.00	3.1500	1.2483 5		Unsure

Appendix 5: Correlation Tables

Innovation context correlations

Pearson Correlation Sig. (2-tailed) N	O#	P#	Q#	R#	S#	T#	U#	V#	W#	X#	Y#	Z#	AA#	AB#	AC#
O# I The research has never been replicated	1.000	-.036	.351**	.132	.121	-.067	.211**	.014	.508**	.438**	.299**	.017	-.096	.038	-.002
		.632	.000	.078	.105	.370	.004	.855	.000	.000	.000	.819	.199	.610	.980
	180.000	180	180	180	180	180	180	180	180	180	180	180	180	180	180
P# I Research being conducted is not relevant to nursing pract	-.036	1.000	.061	-.193**	-.378**	.254**	.265**	-.708**	.067	.032	.073	-.232**	.065	.207**	.314**
	.632		.415	.009	.000	.001	.000	.000	.375	.668	.330	.002	.385	.005	.000
	180	180.000	180	180	180	180	180	180	180	180	180	180	180	180	180
Q# I The research has methodological uncertainties	.351**	.061	1.000	-.160*	-.032	-.147*	.011	-.060	.455**	.374**	.301**	-.118	.076	-.029	-.063
	.000	.415		.032	.668	.049	.888	.422	.000	.000	.000	.113	.307	.703	.403
	180	180	180.000	180	180	180	180	180	180	180	180	180	180	180	180
R# I The majority of conclusions drawn from the literature are	.132	-.193**	-.160*	1.000	-.147*	.054	.496**	.232**	.077	-.013	.046	.457**	-.395**	.018	.116
	.078	.009	.032		.049	.469	.000	.002	.305	.859	.536	.000	.000	.815	.121
	180	180	180	180.000	180	180	180	180	180	180	180	180	180	180	180
S# I There is not a documented need to change practice	.121	-.378**	-.032	-.147*	1.000	-.116	-.240**	.320**	-.050	-.062	-.154*	.066	-.266**	-.163*	-.222**
	.105	.000	.668	.049		.120	.001	.000	.505	.405	.040	.382	.000	.029	.003
	180	180	180	180	180.000	180	180	180	180	180	180	180	180	180	180
T# I You are uncertain as to whether to believe the results of	-.067	.254**	-.147*	.054	-.116	1.000	.302**	.490**	-.080	-.091	.197**	.511**	.071	.032	-.067
	.370	.001	.049	.469	.120		.000	.000	.286	.222	.008	.000	.345	.668	.369
	180	180	180	180	180	180.000	180	180	180	180	180	180	180	180	180
U# I You feel the impact of changing practice will be minimal	.211**	.265**	.011	.496**	-.240**	.302**	1.000	.219**	.221**	.116	-.098	.417**	-.437**	.243**	.485**
	.004	.000	.888	.000	.001	.000		.003	.003	.122	.190	.000	.000	.001	.000
	180	180	180	180	180	180	180.000	180	180	180	180	180	180	180	180
V# IOur clinical	.014	-.708**	-.060	.232**	.320**	-.490**	-.219**	1.000	-.041	-.109	-.084	.024	-.135	-.125	.052

unit adopts new evidence on a regular basis	.855 180	.000 180	.422 180	.002 180	.000 180	.000 180	.003 180	180.000	.585 180	.147 180	.260 180	.748 180	.070 180	.095 180	.486 180
W# I Our clinical unit produces new evidence	.508** .000 180	.067 .375 180	.455** .000 180	.077 .305 180	-.050 .505 180	-.080 .286 180	.221** .003 180	-.041 .585 180	1.000 180.000	.907** .000 180	.713** .000 180	.007 .926 180	-.037 .618 180	.031 .680 180	.116 .122 180
X# I Change management practices influence the adoption of new	.438** .000 180	.032 .668 180	.374** .000 180	-.013 .859 180	-.062 .405 180	-.091 .222 180	.116 .122 180	-.109 .147 180	.907** .000 180	1.000 180.000	.785** .000 180	-.066 .378 180	.066 .379 180	.019 .796 180	.079 .294 180
Y# I New innovations are risky	.299** .000 180	.073 .330 180	.301** .000 180	.046 .536 180	-.154* .040 180	-.197** .008 180	-.098 .190 180	-.084 .260 180	.713** .000 180	.785** .000 180	1.000 180.000	-.210** .005 180	.190* .011 180	.096 .201 180	.013 .866 180
Z# I There is widespread confidence in using new research	.017 .819 180	-.232** .002 180	-.118 .113 180	.457** .000 180	.066 .382 180	.511** .000 180	.417** .000 180	.024 .748 180	.007 .926 180	-.066 .378 180	.210** .005 180	1.000 180.000	-.397** .000 180	-.053 .477 180	-.342** .000 180
AA# I Innovative research is appealing to nurses	-.096 .199 180	.065 .385 180	.076 .307 180	-.395** .000 180	-.266** .000 180	.071 .345 180	-.437** .000 180	-.135 .070 180	-.037 .618 180	.066 .379 180	.190* .011 180	-.397** .000 180	1.000 180.000	-.174* .020 180	-.113 .131 180
AB# I New innovations are beneficial	.038 .610 180	.207** .005 180	-.029 .703 180	.018 .815 180	-.163* .029 180	.032 .668 180	.243** .001 180	-.125 .095 180	.031 .680 180	.019 .796 180	.096 .201 180	-.053 .477 180	-.174* .020 180	1.000 180.000	.354** .000 180
AC# I We have access to new innovations	-.002 .980 180	.314** .000 180	-.063 .403 180	.116 .121 180	-.222** .003 180	-.067 .369 180	.485** .000 180	.052 .486 180	.116 .122 180	.079 .294 180	.013 .866 180	-.342** .000 180	-.113 .131 180	.354** .000 180	1.000 180.000

** . Correlation is significant at the 0.01

level (2 tailed).

*. Correlation is significant at the 0.05 level

(2-tailed).

Patient context correlations

Pearson Correlation Sig. (2-tailed) N	AD#	AE#	AF#	AG#	AH#	AI#
AD# PThe consumers knowledge affects research utilisation in m	1.000 180.000	-.410** .000 180	-.413** .000 180	-.417** .000 180	-.320** .000 180	-.312** .000 180
AE# PThe consumers skills affects research utilisation in my w	-.410** .000 180	1.000 180.000	.958** .000 180	.766** .000 180	.653** .000 180	.617** .000 180
AF# PThe consumers attitude affects research utilisation in my	-.413** .000 180	.958** .000 180	1.000 180.000	.784** .000 180	.692** .000 180	.636** .000 180
AG# PThe consumers lack of compliance affects research utilis	-.417** .000 180	.766** .000 180	.784** .000 180	1.000 180.00 0	.827** .000 180	.845** .000 180
AH# PThe consumers family influences their compliance	-.320** .000 180	.653** .000 180	.692** .000 180	.827** .000 180	1.000 180.00 0	.701** .000 180
AI# P The consumers condition is know to affect research utili	-.312** .000 180	.617** .000 180	.636** .000 180	.845** .000 180	.701** .000 180	1.000 180.00 0

** . Correlation is significant at the 0.01 level (2-tailed).

Organisational context correlations

Pearson Correlation Sig. (2-tailed) N	AJ#	AK	AL#	AM#	AN#	AO#	AP#	AQ#
AJ# O The facilities are adequate allowing research utilisation	1.000 180.000	.081 .277 180	.081 .281 180	.115 .124 180	-.569** .000 180	.331** .000 180	-.558** .000 180	.249** .001 180
AK# O Executive will not allow implementation	.081 .277 180	1.000 180.000	-.121 .107 180	.083 .266 180	-.075 .319 180	.250** .001 180	.048 .521 180	.293** .000 180
AL# O There is insufficient time on the job to implement new e	.081 .281 180	-.121 .107 180	1.000 180.000	-.237** .001 180	-.044 .561 180	-.308** .000 180	-.194** .009 180	-.133 .075 180
AM# O I feel supported in my endeavours to change practice bas	.115 .124 180	.083 .266 180	-.237** .001 180	1.000 180.000	-.480** .000 180	.331** .000 180	.226** .002 180	.540** .000 180
AN# O The organisation has a positive research culture	-.569** .000 180	-.075 .319 180	-.044 .561 180	-.480** .000 180	1.000 180.000	-.153* .040 180	.132 .078 180	-.446** .000 180
AO# O The organisation has an authoritarian approach to research	.331** .000 180	.250** .001 180	-.308** .000 180	.331** .000 180	-.153* .040 180	1.000 180.000	-.089 .233 180	-.009 .902 180
AP# O The organisation has good change management practices	-.558** .000 180	.048 .521 180	-.194** .009 180	.226** .002 180	.132 .078 180	-.089 .233 180	1.000 180.000	.099 .184 180
AQ# O Communication channels are effective	.249** .001 180	.293** .000 180	-.133 .075 180	.540** .000 180	-.446** .000 180	-.009 .902 180	.099 .184 180	1.000 180.000

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Individual nurse context correlations

Pearson Sig. (2- N tailed)Correlati on	AR#	AS#	AT#	AU#	AV#	AW#	AX#	AY#	AZ#	BA#	BB#	BC#	BD#	BE#	BF#	BG#	BH#	BI#	BJ#
AR# N I see little benefit in using research findings	1.000 180.0 00	.436** 180	-.012 180	.154* 180	.346** 180	-.046 180	.514** 180	-.275** 180	-.017 180	.074 180	.073 180	-.076 180	.012 180	.118 180	-.272** 180	-.128 180	-.190* 180	-.023 180	.146* 180
AS# N Research is never published fast enough	.436** 180	1.000 180.0 00	.003 180	-.015 180	-.198** 180	-.072 180	.474** 180	.126 180	-.076 180	.016 180	-.027 180	.055 180	.132 180	.062 180	.245** 180	.246** 180	.052 180	-.149* 180	-.019 180
AT# N I do not have time to read research	-.012 180	.003 180	1.000 180.0 00	.033 180	-.246** 180	.266** 180	-.023 180	-.263** 180	-.018 180	-.148* 180	.025 180	-.016 180	.011 180	.026 180	.347** 180	-.018 180	.153* 180	.023 180	.037 180
AU# N I do not have enough authority to influence a change a c	.154* 180	-.015 180	.033 180	1.000 180.0 00	.759** 180	.052 180	-.079 180	-.278** 180	.196** 180	.230** 180	.137 180	-.141 180	-.098 180	.195** 180	-.068 180	-.089 180	.102 180	.000 180	.528** 180
AV# N I do not see that value for implementatio n	.346** 180	-.198** 180	-.246** 180	.759** 180	1.000 180.0 00	-.362** 180	.167* 180	-.521** 180	.086 180	.357** 180	-.073 180	-.245** 180	.011 180	.304** 180	-.198** 180	-.151* 180	.042 180	.037 180	.626** 180
AW# N I do not feel that the results are generalisable to own	-.046 180	-.072 180	.266** 180	.052 180	-.362** 180	1.000 180.0 0	-.115 180	.312** 180	.105 180	-.381** 180	.121 180	.117 180	-.062 180	-.143 180	.053 180	.084 180	-.081 180	.094 180	-.124 180
AX# N I do not feel capable of	.514** 180	.474** 180	-.023 180	-.079 180	.167* 180	-.115 180	1.000 180	-.113 180	.069 180	-.065 180	.037 180	-.017 180	.047 180	-.079 180	-.050 180	-.121 180	-.225** 180	.005 180	-.014 180

evaluating the quality of resea	.000 180	.000 180	.763 180	.292 180	.025 180	.124 180	180.0 00	.131 180	.357 180	.382 180	.626 180	.820 180	.532 180	.292 180	.506 180	.107 180	.002 180	.950 180	.849 180
AY# N I have a good understanding of research utilisation mode	-.275** .000 180	.126 .091 180	-.263** .000 180	-.278** .000 180	-.521** .000 180	-.312** .000 180	-.113 .131 180	1.000 .000 180	.671** .000 180	-.469** .000 180	.350** .000 180	.246** .001 180	-.170* .022 180	-.791** .000 180	.340** .000 180	.098 .189 180	-.121 .104 180	-.058 .437 180	.794** .000 180
AZ# N I find research utilisation models to be nurse friendly	-.017 .821 180	-.076 .313 180	-.018 .812 180	.196** .008 180	.086 .253 180	.105 .162 180	.069 .357 180	.671** .000 180	1.000 .000 180	-.417** .000 180	.384** .000 180	.063 .398 180	-.175* .018 180	.780** .000 180	.537** .000 180	-.041 .584 180	-.063 .403 180	-.025 .738 180	.528** .000 180
BA# N I have received adequate training on research and the u	.074 .323 180	.016 .831 180	-.148* .047 180	.230** .002 180	.357** .000 180	-.381** .000 180	-.065 .382 180	-.469** .000 180	-.417** .000 180	1.000 .056 180	-.143 .207** 180	-.243** .001 180	.333** .000 180	.335** .000 180	-.002 .975 180	.157* .036 180	-.080 .285 180	.253** .001 180	
BB# N I find research utilisation models to assist with eviden	.073 .333 180	-.027 .718 180	.025 .736 180	.137 .067 180	-.073 .333 180	.121 .107 180	.037 .626 180	.350** .000 180	.384** .000 180	-.143 .056 180	1.000 .001 180	.245** .300 180	.078 .340** 180	-.230** .002 180	.000 .996 180	.105 .162 180	-.084 .262 180	.282** .000 180	
BC# N I have the necessary skills to find evidence	-.076 .313 180	.055 .460 180	-.016 .829 180	-.141 .058 180	-.245** .001 180	.117 .118 180	-.017 .820 180	.246** .001 180	.063 .398 180	-.207** .005 180	.245** .001 180	1.000 .910 180	-.008 .009 180	.193** .825 180	-.017 .868 180	.012 .256 180	-.085 .053 180	-.144 .002 180	.228** .002 180
BD# N I see research utilisation as a necessary step to contin	.012 .872 180	.132 .078 180	.011 .885 180	-.098 .188 180	.011 .888 180	-.062 .412 180	.047 .532 180	-.170* .022 180	-.175* .018 180	-.243** .001 180	.078 .300 180	-.008 .910 180	1.000 .000 180	.258** .864 180	-.013 .129 180	.114 .797 180	.019 .000 180	.309** .000 180	.306** .000 180
BE# N New research stem from risk	.118 .114	.062 .411	.026 .731	.195** .009	.304** .000	-.143 .055	-.079 .292	-.791** .000	-.780** .000	.333** .000	.340** .000	.193** .009	.258** .000	1.000 .000	-.403** .000	-.027 .719	.114 .127	.024 .745	.761** .000

identification	180	180	180	180	180	180	180	180	180	180	180	180	180	180.000	180	180	180	180	180
BF# N I regularly benchmark my practice	-.272**	.245**	.347**	-.068	-.198**	.053	-.050	.340**	.537**	-.335**	.230**	-.017	-.013	-.403**	1.000	.014	.077	-.041	-.293**
	.000	.001	.000	.363	.008	.483	.506	.000	.000	.000	.002	.825	.864	.000	180.000	.857	.303	.585	.000
	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
BG# N Time is a major factor for me	-.128	.246**	-.018	-.089	-.151*	.084	-.121	.098	-.041	-.002	.000	.012	.114	-.027	.014	1.000	-.055	-.048	-.035
	.086	.001	.810	.236	.044	.263	.107	.189	.584	.975	.996	.868	.129	.719	.857	180.000	.462	.523	.640
	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
BH# N Accessing new research materials is easy for me	-.190*	.052	.153*	.102	.042	-.081	-.225**	-.121	-.063	.157*	.105	-.085	.019	.114	.077	-.055	1.000	.096	.084
	.011	.488	.040	.173	.579	.283	.002	.104	.403	.036	.162	.256	.797	.127	.303	.462	180.000	.202	.264
	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
BI# N Research Information overload is a major issue for me	-.023	-.149*	.023	.000	.037	.094	.005	-.058	-.025	-.080	-.084	-.144	.309**	.024	-.041	-.048	.096	1.000	.093
	.757	.046	.757	.996	.622	.211	.950	.437	.738	.285	.262	.053	.000	.745	.585	.523	.202	180.000	.215
	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
BJ# N Embedding new evidence is essential for me to maintain m	.146*	-.019	.037	.528**	.626**	-.124	-.014	.794**	.528**	.253**	-.282**	.228**	.306**	.761**	-.293**	-.035	.084	.093	1.000
	.050	.795	.623	.000	.000	.098	.849	.000	.000	.001	.000	.002	.000	.000	.000	.640	.264	.215	180.000
	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Economic context correlations

Pearson Correlation Sig. (2-tailed) N	BK#	BL#	BM#	BN#	BO#
BK# E There is a lack of resources for research which affects	1.000 180.000	-.093 .213 180	.079 .292 180	.006 .933 180	-.041 .586 180
BL# E Corporate governance supports our capacity as a clinicia	-.093 .213 180	1.000 180.000	-.282** .000 180	.044 .554 180	.030 .693 180
BM# E Nursing services are costed appropriately to allow for r	.079 .292 180	-.282** .000 180	1.000 180.000	.080 .285 180	-.060 .427 180
BN# E Activities are evaluated for cost effectiveness	.006 .933 180	.044 .554 180	.080 .285 180	1.000 180.000	-.030 .692 180
BO# E There is sufficient funding for research	-.041 .586 180	.030 .693 180	-.060 .427 180	-.030 .692 180	1.000 180.000

** . Correlation is significant at the 0.01 level (2-tailed).

Communication context correlations

Pearson Correlation Sig. (2-tailed) N	A#	B#	C#	D#	E#	F#	G#	H#
A# Research reports articles are not readily available	1.000 180.000	.050 .508 180	-.178* .017 180	.050 .508 180	.928** .000 180	.044 .558 180	1.000** .000 180	1.000** .000 180
B# I am made aware of research outcomes	.050 .508 180	1.000 180.000	-.254** .001 180	1.000* .000 180	.032 .669 180	-.218** .003 180	.050 .508 180	.050 .508 180
C# Statistical analysis are not made clear in the literature	-.178* .017 180	-.254** .001 180	1.000 180.000	-.254** .001 180	-.181* .015 180	-.039 .604 180	-.178* .017 180	-.178* .017 180
D# The relevant literature is not compiled in one place	.050 .508 180	1.000** .000 180	-.254** .001 180	1.000 180.000	.032 .669 180	-.218** .003 180	.050 .508 180	.050 .508 180
E# I am isolated from knowledgeable colleagues with whom to dis	.928** .000 180	.032 .669 180	-.181* .015 180	.032 .669 180	1.000 180.000	.062 .406 180	.928** .000 180	.928** .000 180
F# The literature typically reports conflicting results	.044 .558 180	-.218** .003 180	-.039 .604 180	-.218** .003 180	.062 .406 180	1.000 180.000	.044 .558 180	.044 .558 180
G# The research is not reported clearly and readily	1.000** .000 180	.050 .508 180	-.178* .017 180	.050 .508 180	.928** .000 180	.044 .558 180	1.000 180.000	1.000** .000 180
H# The amount of research findings being produced is overwhelmi	1.000** .000 180	.050 .508 180	-.178* .017 180	.050 .508 180	.928** .000 180	.044 .558 180	1.000** .000 180	1.000 180.000

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Laggards context correlations

Pearson Correlation Sig. (2-tailed) N	BP#	BQ#	BR#	BS#	BT#	BU#	BV#
BP# L We are slow to adopt new evidence	1.000 180.00 0	.042 .575 180	.091 .224 180	.187* .012 180	.299** .000 180	-.202** .006 180	.454** .000 180
BQ# L New research is viewed as a risk to patients	.042 .575 180	1.000 180.00 0	-.251** .001 180	-.148* .047 180	.281** .000 180	.281** .000 180	-.124 .098 180
BR# L Patient errors increase because our practices never chan	.091 .224 180	-.251** .001 180	1.000 180.00 0	.222** .003 180	.230** .002 180	-.108 .147 180	.131 .080 180
BS# L Staff fear new technologies	.187* .012 180	-.148* .047 180	.222** .003 180	1.000 180.0 00	.012 .878 180	-.193** .010 180	.255** .001 180
BT# L Staff embrace change	.299** .000 180	.281** .000 180	.230** .002 180	.012 .878 180	1.000 180.0 00	-.009 .901 180	.164* .028 180
BU# L Our staff generate their own research evidence	-.202** .006 180	.281** .000 180	-.108 .147 180	-.193** .010 180	-.009 .901 180	1.000 180.0 00	-.121 .105 180
BV# L Senior staff lead innovative change	.454** .000 180	-.124 .098 180	.131 .080 180	.255** .001 180	.164* .028 180	-.121 .105 180	1.000 180.0 0

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix 6: Factor Analysis: Principal Component

FACTOR

```

/VARIABLES A# Research reports articles are not readily available B# I am made aware of research outcomes
C# Statistical analysis
are not made clear in the literature D# The relevant literature is not compiled in one place
E# I am isolated from knowledgeable colleagues with whom to dis F# The literature typically reports conflicting
results G# The r
esearch is not reported clearly and readily H# The amount of research findings being produced is overwhelmi
/MISSING LISTWISE
/ANALYSIS A# Research reports articles are not readily available B# I am made aware of research outcomes C#
Statistical analysis
are not made clear in the literature D# The relevant literature is not compiled in one place
E# I am isolated from knowledgeable colleagues with whom to dis F# The literature typically reports conflicting
results G# The r
esearch is not reported clearly and readily H# The amount of research findings being produced is overwhelmi
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/PLOT EIGEN ROTATION
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Factor Analysis

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Value	Cases Used
Handli	
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Syntax		<p>FACTOR</p> <p>/VARIABLES A# Research reports articles are not readily available B# I am made aware of research outcomes C# Statistical analysis are not made clear in the literature D# The relevant literature is not compiled in one place</p> <p>E# I am isolated from knowledgeable colleagues with whom to dis</p> <p>F# The literature typically reports conflicting results G# The research is not reported clearly and readily H# The amount of research findings being produced is overwhelmi</p> <p>/MISSING LISTWISE</p> <p>/ANALYSIS A# Research reports articles are not readily available B# I am made aware of research outcomes C# Statistical analysis are not made clear in the literature D# The relevant literature is not compiled in one place</p> <p>E# I am isolated from knowledgeable colleagues with whom to dis</p> <p>F# The literature typically reports conflicting results G# The research is not reported clearly and readily H# The amount of research findings being produced is overwhelmi</p> <p>/PRINT UNIVARIATE INITIAL CORRELATION SIG</p> <p>EXTRACTION ROTATION</p> <p>/FORMAT BLANK(.50)</p> <p>/PLOT EIGEN ROTATION</p> <p>/CRITERIA FACTORS(4) ITERATE(100)</p> <p>/EXTRACTION PC</p> <p>/CRITERIA ITERATE(100)</p> <p>/ROTATION VARIMAX</p> <p>/METHOD=CORRELATION.</p>
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Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
A# Research reports articles are not readily available	1.4667	.72774	180
B# I am made aware of research outcomes	3.3167	.68074	180
C# Statistical analysis are not made clear in the literature	1.5444	.80725	180

D# The relevant literature is not compiled in one place	3.3167	.68074	180
E# I am isolated from knowledgeable colleagues with whom to dis	1.4889	.80146	180
F# The literature typically reports conflicting results	1.4667	.66349	180
G# The research is not reported clearly and readily	1.4667	.72774	180
H# The amount of research findings being produced is overwhelmi	1.4667	.72774	180

Correlation Matrix

	A#	B#	C#	D#	E#	F#	G#	H#
Correlation A# Research reports articles are not readily available	1.000	.050	-.178	.050	.928	.044	1.000	1.000
B# I am made aware of research outcomes	.050	1.000	-.254	1.000	.032	-.218	.050	.050
C# Statistical analysis are not made clear in the literature	-.178	-.254	1.000	-.254	-.181	-.039	-.178	-.178
D# The relevant literature is not compiled in one place	.050	1.000	-.254	1.000	.032	-.218	.050	.050
E# I am isolated from knowledgeable colleagues with whom to dis	.928	.032	-.181	.032	1.000	.062	.928	.928
F# The literature typically reports conflicting results	.044	-.218	-.039	-.218	.062	1.000	.044	.044
G# The research is not reported clearly and readily	1.000	.050	-.178	.050	.928	.044	1.000	1.000

	H# The amount of research findings being produced is overwhelmi	1.000	.050	-.178	.050	.928	.044	1.000	1.000
Sig. (1-tailed)	A# Research reports articles are not readily available		.254	.008	.254	.000	.279	.000	.000
	B# I am made aware of research outcomes	.254		.000	.000	.334	.002	.254	.254
	C# Statistical analysis are not made clear in the literature	.008	.000		.000	.008	.302	.008	.008
	D# The relevant literature is not compiled in one place	.254	.000	.000		.334	.002	.254	.254
	E# I am isolated from knowledgeable colleagues with whom to dis	.000	.334	.008	.334		.203	.000	.000
	F# The literature typically reports conflicting results	.279	.002	.302	.002	.203		.279	.279
	G# The research is not reported clearly and readily	.000	.254	.008	.254	.000	.279		.000
	H# The amount of research findings being produced is overwhelmi	.000	.254	.008	.254	.000	.279	.000	

Communalities

	Initial	Extraction
A# Research reports articles are not readily available	1.000	.992
B# I am made aware of research outcomes	1.000	1.000
C# Statistical analysis are not made clear in the literature	1.000	1.000

D# The relevant literature is not compiled in one place	1.000	1.000
E# I am isolated from knowledgeable colleagues with whom to dis	1.000	.919
F# The literature typically reports conflicting results	1.000	1.000
G# The research is not reported clearly and readily	1.000	.992
H# The amount of research findings being produced is overwhelmi	1.000	.992

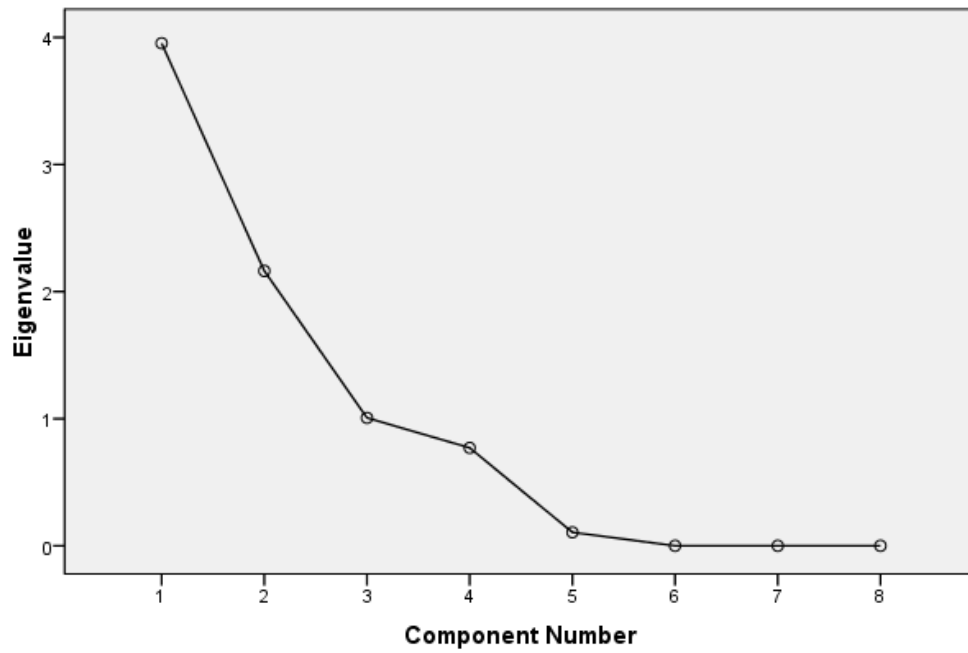
Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.954	49.429	49.429	3.954	49.429	49.429	3.892	48.646	48.646
2	2.163	27.036	76.464	2.163	27.036	76.464	2.010	25.124	73.770
3	1.007	12.582	89.047	1.007	12.582	89.047	.997	12.462	86.232
4	.771	9.632	98.678	.771	9.632	98.678	.996	12.446	98.678
5	.106	1.322	100.000						
6	2.989E-16	3.737E-15	100.000						
7	3.503E-17	4.379E-16	100.000						
8	5.952E-18	7.440E-17	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
A# Research reports articles are not readily available	.991			
B# I am made aware of research outcomes		.968		
C# Statistical analysis are not made clear in the literature			.622	.644
D# The relevant literature is not compiled in one place		.968		
E# I am isolated from knowledgeable colleagues with whom to dis	.954			
F# The literature typically reports conflicting results			-.780	.507
G# The research is not reported clearly and readily	.991			
H# The amount of research findings being produced is overwhelming	.991			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	Access to EBP	Knowledge utilisation	Misleading information	Data interpretation
A# Research reports articles are not readily available	.994			
B# I am made aware of research outcomes		.991		
C# Statistical analysis are not made clear in the literature				.980
D# The relevant literature is not compiled in one place		.991		
E# I am isolated from knowledgeable colleagues with whom to dis	.956			
F# The literature typically reports conflicting results			.990	
G# The research is not reported clearly and readily	.994			
H# The amount of research findings being produced is overwhelmi	.994			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

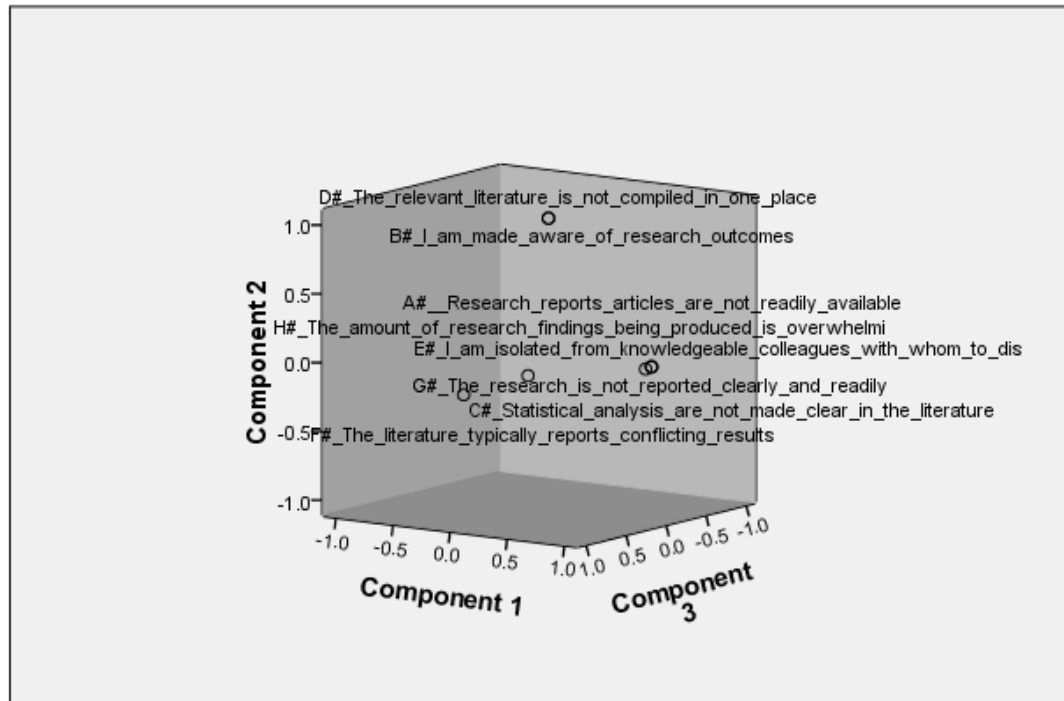
Component Transformation Matrix

Component	1	2	3	4
1	.987	.088	.026	-.131
2	-.108	.934	-.242	-.239
3	.106	-.030	-.778	.619
4	.052	.345	.580	.737

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

```

/VARIABLES I# S Implications for practice are made clear in the literatur J# S There is a fear to try something
new K# S Other sta
ff are never supportive of new evidence L# S Doctors will never cooperate with suggested changes
M# S The clinical unit itself appears to have a negative affe N# S Unit norms appear to influence staff behaviour
towards ev
/MISSING LISTWISE
/ANALYSIS I# S Implications for practice are made clear in the literatur J# S There is a fear to try something new
K# S Other staf
f are never supportive of new evidence L# S Doctors will never cooperate with suggested changes
M# S The clinical unit itself appears to have a negative affe N# S Unit norms appear to influence staff behaviour
towards ev
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	Cases Used	LISTWISE: Statistics are based on cases with no missing values for any variable used.	
Syntax		<p>FACTOR</p> <p>/VARIABLES I# S Implications for practice are made clear in the literatur J# S There is a fear to try something new K# S Other staff are never supportive of new evidence L# S Doctors will never cooperate with suggested changes</p> <p>M# S The clinical unit itself appears to have a negative affe N# S Unit norms appear to influence staff behaviour towards ev</p> <p>/MISSING LISTWISE</p> <p>/ANALYSIS I# S Implications for practice are made clear in the literatur J# S There is a fear to try something new K# S Other staff are never supportive of new evidence L# S Doctors will never cooperate with suggested changes</p> <p>M# S The clinical unit itself appears to have a negative affe N# S Unit norms appear to influence staff behaviour towards ev</p> <p>/PRINT UNIVARIATE INITIAL CORRELATION SIG</p> <p>EXTRACTION ROTATION</p> <p>/FORMAT BLANK(.50)</p> <p>/PLOT EIGEN ROTATION</p> <p>/CRITERIA FACTORS(4) ITERATE(100)</p> <p>/EXTRACTION PC</p> <p>/CRITERIA ITERATE(100)</p> <p>/ROTATION VARIMAX</p> <p>/METHOD=CORRELATION.</p>	
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Descriptive Statistics

	Mean	Std. Deviation	Analysis N
I# S Implications for practice are made clear in the literatur	2.9722	.75065	180
J# S There is a fear to try something new	2.2056	1.91056	180
K# S Other staff are never supportive of new evidence	3.0556	1.82693	180
L# S Doctors will never cooperate with suggested changes	1.9556	1.16668	180
M# S The clinical unit itself appears to have a negative affe	2.1056	1.10103	180
N# S Unit norms appear to influence staff behaviour towards ev	2.1889	1.18080	180

Correlation Matrix

	I# S	J# S	K# S	L# S	M# S	N# S
Correlation						
I# S Implications for practice are made clear in the literatur	1.000	-.261	-.117	-.161	.024	.050
J# S There is a fear to try something new	-.261	1.000	.158	.107	-.058	-.099
K# S Other staff are never supportive of new evidence	-.117	.158	1.000	.145	.244	.210
L# S Doctors will never cooperate with suggested changes	-.161	.107	.145	1.000	.121	.071
M# S The clinical unit itself appears to have a negative affe	.024	-.058	.244	.121	1.000	.960
N# S Unit norms appear to influence staff behaviour towards ev	.050	-.099	.210	.071	.960	1.000
Sig. (1-tailed)						
I# S Implications for practice are made clear in the literatur		.000	.059	.015	.375	.252
J# S There is a fear to try something new	.000		.017	.077	.219	.093
K# S Other staff are never supportive of new evidence	.059	.017		.026	.000	.002
L# S Doctors will never cooperate with suggested changes	.015	.077	.026		.053	.172
M# S The clinical unit itself appears to have a negative affe	.375	.219	.000	.053		.000
N# S Unit norms appear to influence staff behaviour towards ev	.252	.093	.002	.172	.000	

Communalities

	Initial	Extraction
I# S Implications for practice are made clear in the literatur	1.000	.772
J# S There is a fear to try something new	1.000	.656
K# S Other staff are never supportive of new evidence	1.000	.896
L# S Doctors will never cooperate with suggested changes	1.000	.973
M# S The clinical unit itself appears to have a negative affe	1.000	.975
N# S Unit norms appear to influence staff behaviour towards ev	1.000	.977

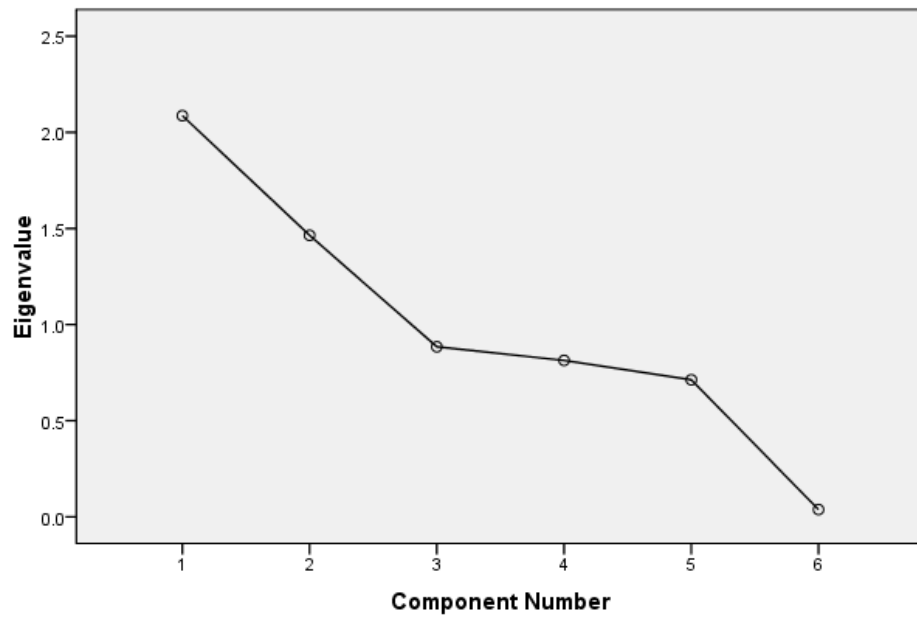
Extraction Method: Principal Component Analysis.

Total Variance Explained

Componen t	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.087	34.779	34.779	2.087	34.779	34.779	1.973	32.885	32.885
2	1.464	24.408	59.187	1.464	24.408	59.187	1.246	20.762	53.647
3	.885	14.745	73.933	.885	14.745	73.933	1.023	17.051	70.698
4	.813	13.557	87.490	.813	13.557	87.490	1.008	16.792	87.490
5	.713	11.882	99.371						
6	.038	.629	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	Clinical Unit	Fear based on interpretation of findings	Support from other health professionals	Support from other staff
I# S Implications for practice are made clear in the literature		-.701		
J# S There is a fear to try something new		.706		
K# S Other staff are never supportive of new evidence				.680
L# S Doctors will never cooperate with suggested changes			.817	
M# S The clinical unit itself appears to have a negative affe	.969			
N# S Unit norms appear to influence staff behaviour towards ev	.957			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

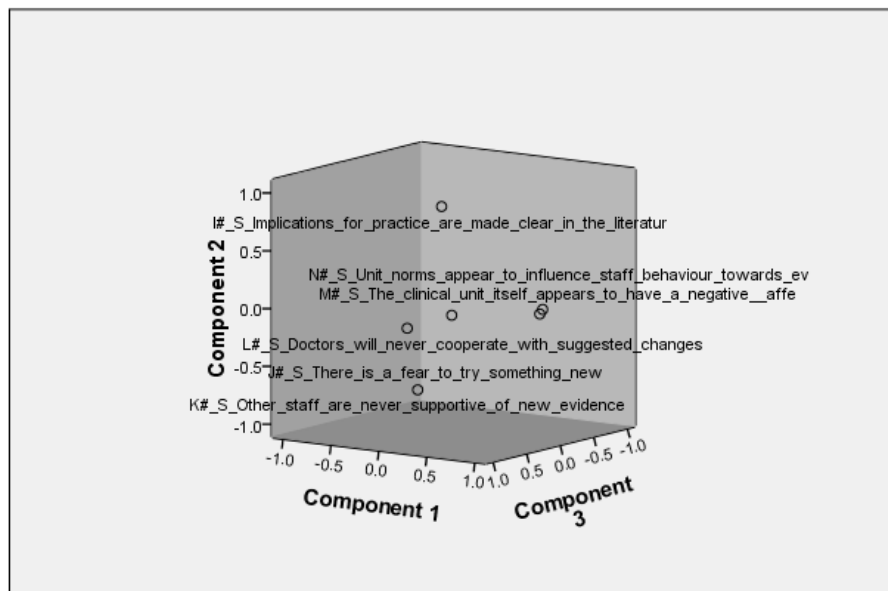
Component Transformation Matrix

Component	1	2	3	4
1	.947	.031	.275	.160
2	-.158	-.808	.403	.400
3	-.066	.294	-.327	.896
4	-.270	.510	.810	.108

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

/VARIABLES O# I The research has never been replicated P# I Research being conducted is not relevant to nursing pract Q# I The research has methodological uncertainties R# I The majority of conclusions drawn from the literature are S# I There is not a documented need to change practice T# I You are uncertain as to whether to believe the results of U# I You feel the impact of changing practice will be minimal V# I Our clinical unit adopts new evidence on a regular basis W# I Our clinical unit produces new evidence X# I Change management practices influence the adoption of new Y# I New innovations are risky Z# I There is widespread confidence in using new research AA# I Innovative research is appealing to nurses AB# I New innovations are beneficial AC# I We have access to new innovations

/MISSING LISTWISE

/ANALYSIS O# I The research has never been replicated P# I Research being conducted is not relevant to nursing pract Q# I The research has methodological uncertainties R# I The majority of conclusions drawn from the literature are S# I There is not a documented need to change practice T# I You are uncertain as to whether to believe the results of U# I You feel the impact of changing practice will be minimal V# I Our clinical unit adopts new evidence on a regular basis

W# I Our clinical unit produces new evidence X# I Change management practices influence the adoption of new Y# I New innovations
 are risky Z# I There is widespread confidence in using new research AA# I Innovative research is appealing to nurses
 AB# I New innovations are beneficial AC# I We have access to new innovations
 /PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION
 /FORMAT BLANK(.50)
 /PLOT EIGEN ROTATION
 /CRITERIA FACTORS(4) ITERATE(100)
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 /CRITERIA ITERATE(100)
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 /METHOD=CORRELATION.

Factor Analysis

Notes

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	Cases Used	LISTWISE: Statistics are based on cases with no missing values for any variable used.

FACTOR

/VARIABLES O# I The research has never been replicated P# I Research being conducted is not relevant to nursing pract Q# I The research has methodological uncertainties R# I The majority of conclusions drawn from the literature are

S# I There is not a documented need to change practice T# I You are uncertain as to whether to believe the results of U# I You feel the impact of changing practice will be minimal V# I Our clinical unit adopts new evidence on a regular basis

W# I Our clinical unit produces new evidence X# I Change management practices influence the adoption of new Y# I New innovations are risky Z# I There is widespread confidence in using new research AA# I Innovative research is appealing to nurses

AB# I New innovations are beneficial AC# I We have access to new innovations

/MISSING LISTWISE

/ANALYSIS O# I The research has never been replicated P# I Research being conducted is not relevant to nursing pract Q# I The research has methodological uncertainties R# I The majority of conclusions drawn from the literature are

S# I There is not a documented need to change practice T# I You are uncertain as to whether to believe the results of U# I You feel the impact of changing practice will be minimal V# I Our clinical unit adopts new evidence on a regular basis

W# I Our clinical unit produces new evidence X# I Change management practices influence the adoption of new Y# I New innovations are risky Z# I There is widespread confidence in using new research AA# I Innovative research is appealing to nurses

AB# I New innovations are beneficial AC# I We have access to new innovations

/PRINT UNIVARIATE INITIAL CORRELATION SIG
EXTRACTION ROTATION

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/PLOT EIGEN ROTATION

/CRITERIA FACTORS(4) ITERATE(100)

/EXTRACTION PC

/CRITERIA ITERATE(100)

/ROTATION VARIMAX

/METHOD=CORRELATION.

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Descriptive Statistics

	Mean	Std. Deviation	Analysis N
O# I The research has never been replicated	3.2056	1.68031	180
P# I Research being conducted is not relevant to nursing pract	1.9111	1.08463	180
Q# I The research has methodological uncertainties	5.0556	1.59161	180
R# I The majority of conclusions drawn from the literature are	3.0389	2.00937	180
S# I There is not a documented need to change practice	2.7056	1.64333	180
T# I You are uncertain as to whether to believe the results of	2.1778	1.21515	180
U# I You feel the impact of changing practice will be minimal	2.5278	1.23465	180
V# I Our clinical unit adopts new evidence on a regular basis	2.2889	1.04368	180
W# I Our clinical unit produces new evidence	4.2333	1.06283	180
X# I Change management practices influence the adoption of new	4.1722	1.08226	180
Y# I New innovations are risky	4.4722	1.23917	180
Z# I There is widespread confidence in using new research	2.8611	1.38130	180
AA# I Innovative research is appealing to nurses	2.4000	1.37658	180
AB# I New innovations are beneficial	1.8444	1.28081	180
AC# I We have access to new innovations	2.8000	1.06441	180

Correlation Matrix

	O#	P#	Q#	R#	S#	T#	U#	V#	W#	X#	Y#	Z#	AA	AB #	AC#
Corr O# I elati The on research h has never been replicat ed P# I Resear ch being conduc ted is not relevan t to nursing pract Q# I The research h has method ologica l uncerta inties R# I The majorit y of conclu sions drawn from the literatur e are	1.00 0	- .03 6	.35 1	.13 2	.12 1	- .06 7	.21 1	.01 4	.50 8	.43 8	.29 9	.01 7	-.096	.03 8	-.002
	- .036	1.0 00	.06 1	- .19 3	- .37 8	.25 4	.26 5	- .70 8	.06 7	.03 2	.07 3	- .23 2	.065	.20 7	.314
	.351	.06 1	1.0 00	- .16 0	- .03 2	- .14 7	.01 1	- .06 0	.45 5	.37 4	.30 1	- .11 8	.076	- .02 9	-.063
	.132	- .19 3	- .16 0	1.0 00	- .14 7	.05 4	.49 6	.23 2	.07 7	- .01 3	.04 6	.45 7	-.395	.01 8	.116

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Z# I There is widesp read confide nce in using new research h	.409	.00 1	.05 7	.00 0	.19 1	.00 0	.00 0	.37 4	.46 3	.18 9	.00 2		.000	.23 9	.000
AA# I Innovat ive research h is appeali ng to nurses	.100	.19 3	.15 4	.00 0	.00 0	.17 2	.00 0	.03 5	.30 9	.18 9	.00 5	.00 0		.01 0	.066
AB# I New innovat ions are benefic ial	.305	.00 3	.35 1	.40 8	.01 5	.33 4	.00 1	.04 7	.34 0	.39 8	.10 0	.23 9	.010		.000
AC# I We have access to new innovat ions	.490	.00 0	.20 2	.06 1	.00 1	.18 4	.00 0	.24 3	.06 1	.14 7	.43 3	.00 0	.066	.00 0	

Communalities

	Initial	Extraction
O# I The research has never been replicated	1.000	.452
P# I Research being conducted is not relevant to nursing pract	1.000	.746
Q# I The research has methodological uncertainties	1.000	.370
R# I The majority of conclusions drawn from the literature are	1.000	.602

S# I There is not a documented need to change practice	1.000	.382
T# I You are uncertain as to whether to believe the results of	1.000	.746
U# I You feel the impact of changing practice will be minimal	1.000	.837
V# I Our clinical unit adopts new evidence on a regular basis	1.000	.813
W# I Our clinical unit produces new evidence	1.000	.889
X# I Change management practices influence the adoption of new	1.000	.855
Y# I New innovations are risky	1.000	.708
Z# I There is widespread confidence in using new research	1.000	.873
AA# I Innovative research is appealing to nurses	1.000	.566
AB# I New innovations are beneficial	1.000	.373
AC# I We have access to new innovations	1.000	.774

Extraction Method: Principal Component Analysis.

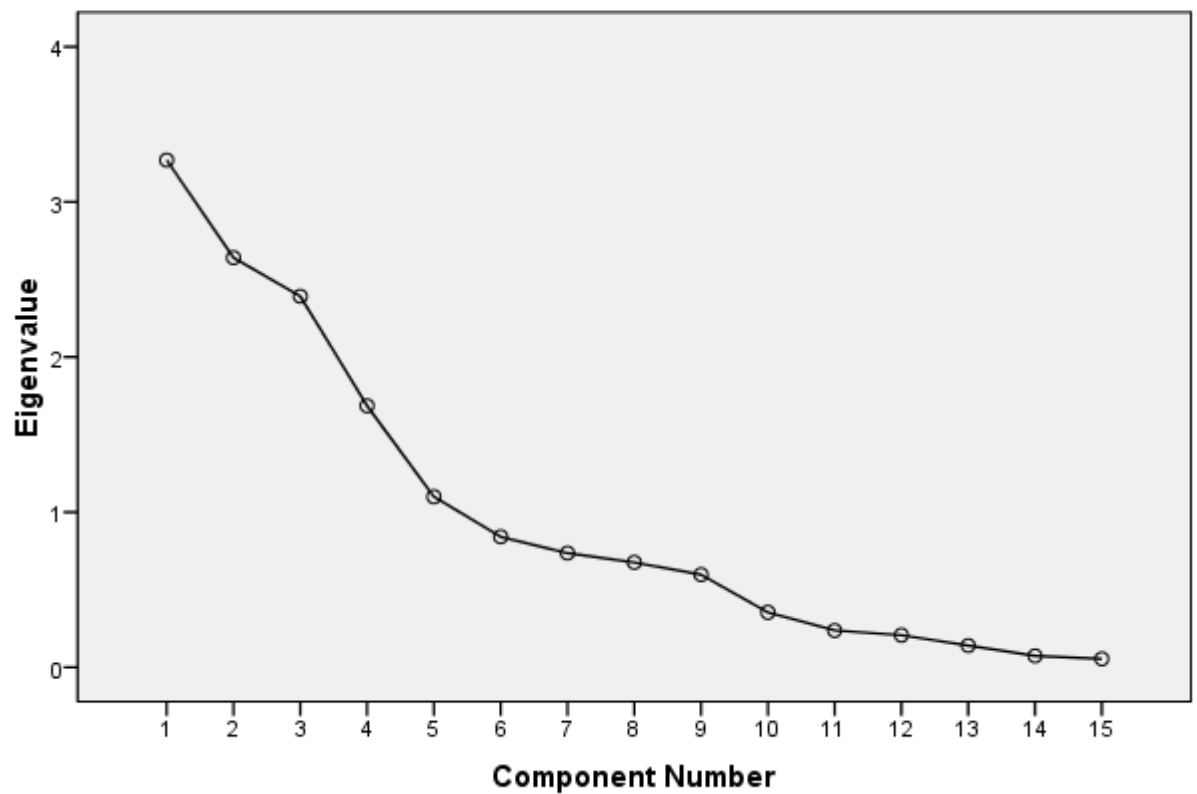
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.269	21.796	21.796	3.269	21.796	21.796	3.184	21.230	21.230
2	2.640	17.601	39.398	2.640	17.601	39.398	2.517	16.783	38.013
3	2.392	15.944	55.342	2.392	15.944	55.342	2.331	15.538	53.550
4	1.685	11.234	66.575	1.685	11.234	66.575	1.954	13.025	66.575
5	1.099	7.328	73.904						
6	.841	5.606	79.510						
7	.736	4.905	84.415						
8	.676	4.506	88.920						
9	.597	3.978	92.899						
10	.354	2.359	95.258						
11	.237	1.581	96.839						
12	.207	1.379	98.218						
13	.140	.933	99.151						

14	.073	.488	99.638						
15	.054	.362	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component: Individual Nurse			
	Confidence in home grown evidence	Confidence in external research	3	4
O# I The research has never been replicated	.576			
P# I Research being conducted is not relevant to nursing pract			-.697	
Q# I The research has methodological uncertainties	.554			
R# I The majority of conclusions drawn from the literature are			.592	

S# I There is not a documented need to change practice				
T# I You are uncertain as to whether to believe the results of			.578	
U# I You feel the impact of changing practice will be minimal			.848	
V# I Our clinical unit adopts new evidence on a regular basis				.645
W# I Our clinical unit produces new evidence	.908			
X# I Change management practices influence the adoption of new	.898			
Y# I New innovations are risky	.809			
Z# I There is widespread confidence in using new research			.512	.544
AA# I Innovative research is appealing to nurses				-.569
AB# I New innovations are beneficial				
AC# I We have access to new innovations				

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	Faith in externally derived evidence	Faith in outcomes	Research utilisation	Belief in new innovation
O# I The research has never been replicated	.629			
P# I Research being conducted is not relevant to nursing practice			.731	
Q# I The research has methodological uncertainties	.587			
R# I The majority of conclusions drawn from the literature are		.754		
S# I There is not a documented need to change practice				
T# I You are uncertain as to whether to believe the results of			.728	
U# I You feel the impact of changing practice will be minimal		.742		
V# I Our clinical unit adopts new evidence on a regular basis			-.890	
W# I Our clinical unit produces new evidence	.932			
X# I Change management practices influence the adoption of new	.923			
Y# I New innovations are risky	.817			
Z# I There is widespread confidence in using new research		.781		
AA# I Innovative research is appealing to nurses		-.699		
AB# I New innovations are beneficial				.585

AC# I We have access to new innovations				.874
--------------------------------------------	--	--	--	------

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

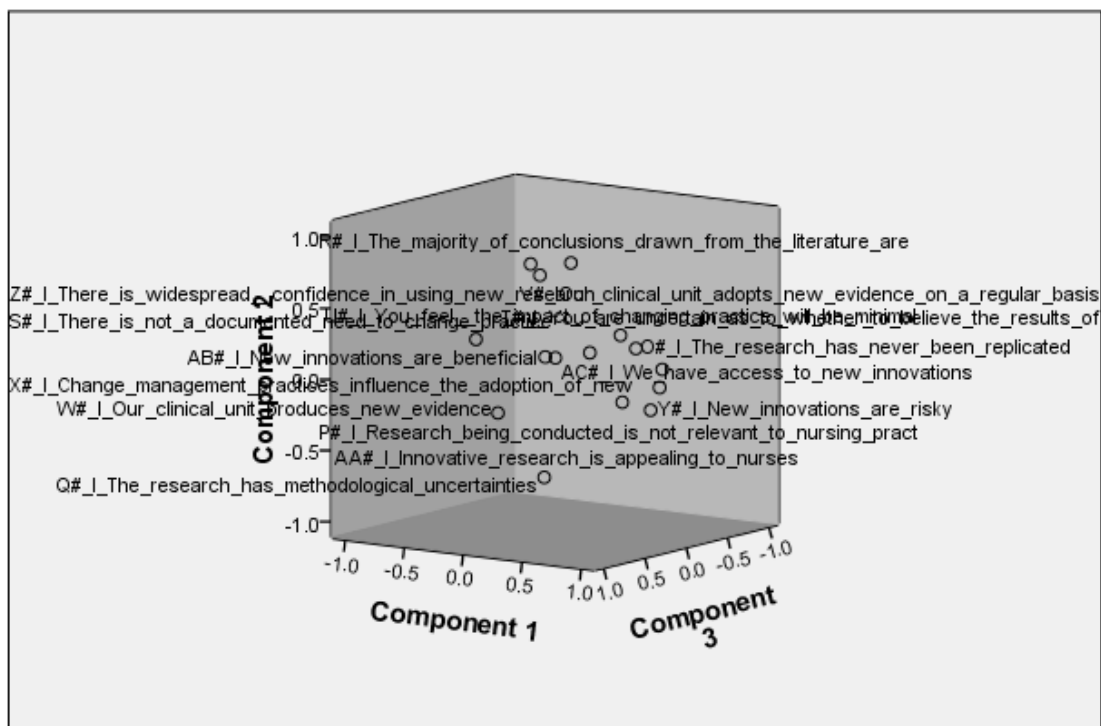
Component Transformation Matrix

Component	1	2	3	4
1	.955	-.028	.161	.248
2	-.168	.717	.580	.349
3	.199	.694	-.633	-.277
4	.143	.059	.487	-.860

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

/VARIABLES AD# PThe consumers knowledge affects research utilisation in m AE# PThe consumers skills
affects research utilisation i

n my w AF# PThe consumers attitude affects research utilisation in my

AG# PThe consumers lack of compliance affects research utilisah AH# PThe consumers family influences their compliance AI# P The consumers condition is know to affect research utili
 /MISSING LISTWISE
 /ANALYSIS AD# PThe consumers knowledge affects research utilisation in m AE# PThe consumers skills affects research utilisation in my w AF# PThe consumers attitude affects research utilisation in my
 AG# PThe consumers lack of compliance affects research utilisah AH# PThe consumers family influences their compliance AI# P The consumers condition is know to affect research utili
 /PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION
 /FORMAT BLANK(.50)
 /PLOT EIGEN ROTATION
 /CRITERIA FACTORS(4) ITERATE(100)
 /EXTRACTION PC
 /CRITERIA ITERATE(100)
 /ROTATION VARIMAX
 /METHOD=CORRELATION.

Factor Analysis

Notes

Output Created		2009-11-13T12:36:36.987
Comments		
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	Active Dataset	DataSet1
	Filter	<none>
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	Split File	<none>
	N of Rows in Working Data	180
	File	
Missing Value Handling	Definition of Missing Cases Used	MISSING=EXCLUDE: User-defined missing values are treated as missing. LISTWISE: Statistics are based on cases with no missing values for any variable used.

Syntax	<p>FACTOR</p> <p>/VARIABLES AD# PThe consumers knowledge affects research utilisation in m AE# PThe consumers skills affects research utilisation in my w AF# PThe consumers attitude affects research utilisation in my</p> <p>AG# PThe consumers lack of compliance affects research utilis</p> <p>AH# PThe consumers family influences their compliance AI# P The consumers condition is know to affect research utili</p> <p>/MISSING LISTWISE</p> <p>/ANALYSIS AD# PThe consumers knowledge affects research utilisation in m AE# PThe consumers skills affects research utilisation in my w AF# PThe consumers attitude affects research utilisation in my</p> <p>AG# PThe consumers lack of compliance affects research utilis</p> <p>AH# PThe consumers family influences their compliance AI# P The consumers condition is know to affect research utili</p> <p>/PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION</p> <p>ROTATION</p> <p>/FORMAT BLANK(.50)</p> <p>/PLOT EIGEN ROTATION</p> <p>/CRITERIA FACTORS(4) ITERATE(100)</p> <p>/EXTRACTION PC</p> <p>/CRITERIA ITERATE(100)</p> <p>/ROTATION VARIMAX</p> <p>/METHOD=CORRELATION.</p>
Resources	<p>Processor Time</p> <p>Elapsed Time</p> <p>Maximum Memory Required</p> <p>0:00:00.360</p> <p>0:00:00.343</p> <p>5544 (5.414K) bytes</p>

[DataSet1] H:\E drive\PhD\Latestversioncontrol\ClintPHDOct2009v1.sav

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
--	------	----------------	------------

AD# PThe consumers knowledge affects research utilisation in m	1.8556	1.14395	180
AE# PThe consumers skills affects research utilisation in my w	2.6722	2.06820	180
AF# PThe consumers attitude affects research utilisation in my	2.8944	1.98175	180
AG# PThe consumers lack of compliance affects research utilis	3.1667	2.03462	180
AH# PThe consumers family influences their compliance	3.2944	2.12907	180
AI# P The consumers condition is know to affect research utili	2.8389	2.01991	180

Correlation Matrix

	AD#	AE#	AF#	AG#	AH#	AI#
Correlation AD# PThe consumers knowledge affects research utilisation in m	1.000	-.410	-.413	-.417	-.320	-.312
AE# PThe consumers skills affects research utilisation in my w	-.410	1.000	.958	.766	.653	.617
AF# PThe consumers attitude affects research utilisation in my	-.413	.958	1.000	.784	.692	.636
AG# PThe consumers lack of compliance affects research utilis	-.417	.766	.784	1.000	.827	.845
AH# PThe consumers family influences their compliance	-.320	.653	.692	.827	1.000	.701
AI# P The consumers condition is know to affect research utili	-.312	.617	.636	.845	.701	1.000
Sig. (1-tailed)						
AD# PThe consumers knowledge affects research utilisation in m		.000	.000	.000	.000	.000
AE# PThe consumers skills affects research utilisation in my w	.000		.000	.000	.000	.000
AF# PThe consumers attitude affects research utilisation in my	.000	.000		.000	.000	.000
AG# PThe consumers lack of compliance affects research utilis	.000	.000	.000		.000	.000
AH# PThe consumers family influences their compliance	.000	.000	.000	.000		.000
AI# P The consumers condition is know to affect research utili	.000	.000	.000	.000	.000	

Communalities

	Initial	Extraction

AD# PThe consumers knowledge affects research utilisation in m	1.000	1.000
AE# PThe consumers skills affects research utilisation in my w	1.000	.980
AF# PThe consumers attitude affects research utilisation in my	1.000	.977
AG# PThe consumers lack of compliance affects research utilis	1.000	.929
AH# PThe consumers family influences their compliance	1.000	.992
AI# P The consumers condition is know to affect research utili	1.000	.983

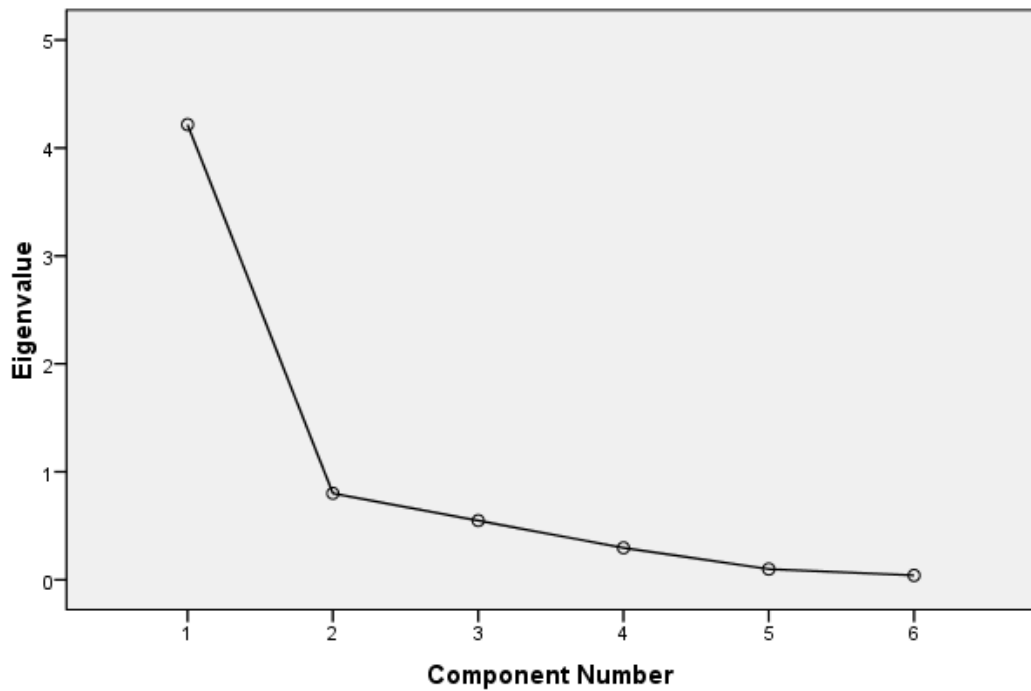
Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.217	70.284	70.284	4.217	70.284	70.284	2.065	34.411	34.411
2	.800	13.338	83.623	.800	13.338	83.623	1.530	25.507	59.918
3	.548	9.133	92.756	.548	9.133	92.756	1.189	19.810	79.728
4	.296	4.926	97.682	.296	4.926	97.682	1.077	17.954	97.682
5	.099	1.644	99.326						
6	.040	.674	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
AD# PThe consumers knowledge affects research utilisation in m	-.519	.834		
AE# PThe consumers skills affects research utilisation in my w	.895			
AF# PThe consumers attitude affects research utilisation in my	.912			
AG# PThe consumers lack of compliance affects research utilis	.942			
AH# PThe consumers family influences their compliance	.854			
AI# P The consumers condition is know to affect research utili	.836			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	Negative affect of consumer on Research utilisation	Negative affect of consumer on Research utilisation	Family influence	Consumer knowledge
AD# PThe consumers knowledge affects research utilisation in m				.968
AE# PThe consumers skills affects research utilisation in my w	.899			
AF# PThe consumers attitude affects research utilisation in my	.878			
AG# PThe consumers lack of compliance affects research utilis		.640		
AH# PThe consumers family influences their compliance			.844	
AI# P The consumers condition is know to affect research utili		.895		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

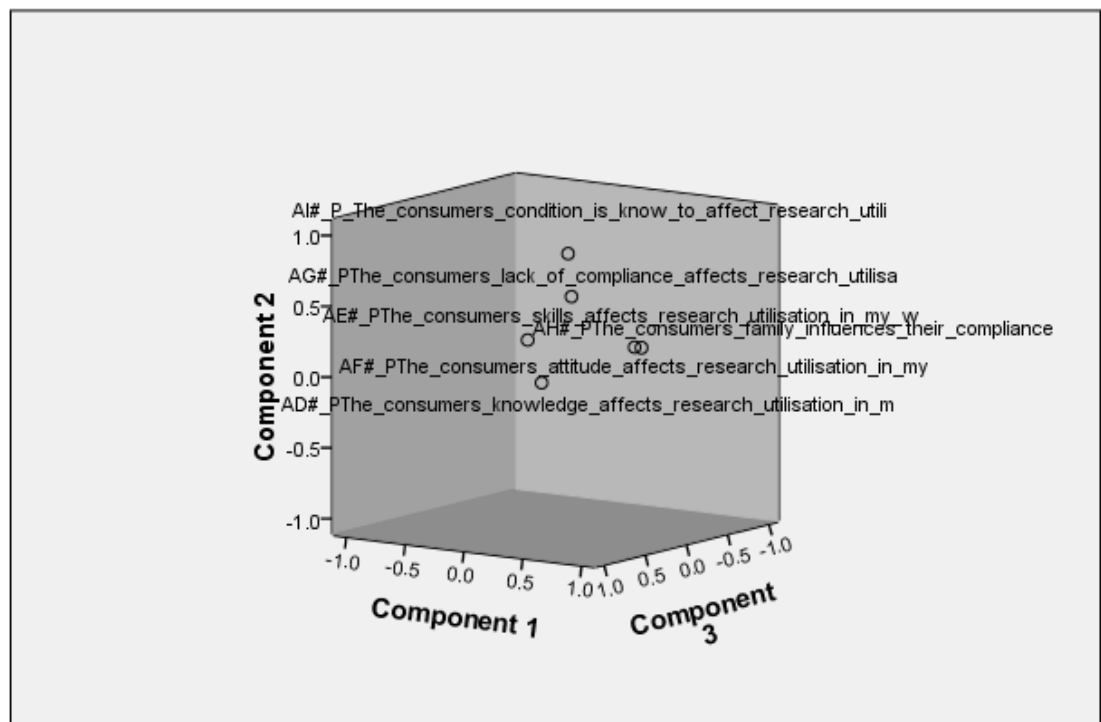
Component Transformation Matrix

Component	1	2	3	4
1	.643	.535	.463	-.292
2	.001	.294	.243	.924
3	.759	-.529	-.290	.244
4	.097	.590	-.801	.023

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

/VARIABLES AJ# O The facilities are adequate allowing research utilisatio AK# O Executive will not allow implementation AL# O Ther

e is insufficient time on the job to implement new e AM# O I feel supported in my endeavours to change practice bas

AN# O The organisation has a positive research culture AO# O The organisation has an authoritarian approach to resear AP# O The

organisation has good change management practices AQ# O Communication channels are effective

/MISSING LISTWISE

/ANALYSIS AJ# O The facilities are adequate allowing research utilisatio AK# O Executive will not allow implementation AL# O There

is insufficient time on the job to implement new e AM# O I feel supported in my endeavours to change practice bas

AN# O The organisation has a positive research culture AO# O The organisation has an authoritarian approach to resear AP# O The

organisation has good change management practices AQ# O Communication channels are effective

/PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION

/FORMAT BLANK(.50)

/PLOT EIGEN ROTATION

/CRITERIA FACTORS(4) ITERATE(100)

/EXTRACTION PC

/CRITERIA ITERATE(100)

/ROTATION VARIMAX

/METHOD=CORRELATION.

Factor Analysis

Notes		
Output Created		2009-11-13T12:38:39.049
Comments		
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		1.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working	
	Data File	180
Missing Value	Definition of Missing	MISSING=EXCLUDE: User-defined missing
Handling		values are treated as missing.
	Cases Used	LISTWISE: Statistics are based on cases with no
		missing values for any variable used.

Syntax		<p>FACTOR</p> <p>/VARIABLES AJ# O The facilities are adequate allowing research utilisatio AK# O Executive will not allow implementation AL# O There is insufficient time on the job to implement new e AM# O I feel supported in my endeavours to change practice bas</p> <p>AN# O The organisation has a positive research culture AO# O The organisation has an authoritarian approach to resear AP# O The organisation has good change management practices AQ# O Communication channels are effective</p> <p>/MISSING LISTWISE</p> <p>/ANALYSIS AJ# O The facilities are adequate allowing research utilisatio AK# O Executive will not allow implementation AL# O There is insufficient time on the job to implement new e AM# O I feel supported in my endeavours to change practice bas</p> <p>AN# O The organisation has a positive research culture AO# O The organisation has an authoritarian approach to resear AP# O The organisation has good change management practices AQ# O Communication channels are effective</p> <p>/PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION /FORMAT BLANK(.50) /PLOT EIGEN ROTATION /CRITERIA FACTORS(4) ITERATE(100) /EXTRACTION PC /CRITERIA ITERATE(100) /ROTATION VARIMAX /METHOD=CORRELATION.</p>
Resources	Processor Time	0:00:00.437
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	Maximum	
	Memory	9080 (8.867K) bytes
	Required	

[DataSet1] H:\E drive\PhD\Latestversioncontrol\ClintPHDOct2009v1.sav

	Mean	Std. Deviation	Analysis N
AJ# O The facilities are adequate allowing research utilisatio	3.5889	.49341	180
AK# O Executive will not allow implementation	2.2556	1.51758	180
AL# O There is insufficient time on the job to implement new e	1.6278	.48475	180
AM# O I feel supported in my endeavours to change practice bas	2.4222	.90902	180
AN# O The organisation has a positive research culture	3.1556	.94439	180
AO# O The organisation has an authoritarian approach to resear	1.6833	1.31801	180
AP# O The organisation has good change management practices	2.5056	1.43187	180
AQ# O Communication channels are effective	3.0222	1.25496	180

Correlation Matrix

	AJ# O	AK# O	AL# O	AM# O	AN# O	AO# O	AP# O	AQ#
Correlatio n AJ# O The facilities are adequate allowing research utilisatio	1.000	.081	.081	.115	-.569	.331	-.558	.249
AK# O Executive will not allow implementati on	.081	1.000	-.121	.083	-.075	.250	.048	.293
AL# O There is insufficient time on the job to implement new e	.081	-.121	1.000	-.237	-.044	-.308	-.194	-.133

	AM# O I feel supported in my endeavours to change practice bas	.115	.083	-.237	1.000	-.480	.331	.226	.540
	AN# O The organisation has a positive research culture	-.569	-.075	-.044	-.480	1.000	-.153	.132	-.446
	AO# O The organisation has an authoritarian approach to resear	.331	.250	-.308	.331	-.153	1.000	-.089	-.009
	AP# O The organisation has good change management practices	-.558	.048	-.194	.226	.132	-.089	1.000	.099
	AQ# O Communicati on channels are effective	.249	.293	-.133	.540	-.446	-.009	.099	1.000
Sig. (1-tailed)	AJ# O The facilities are adequate allowing research utilisatio		.139	.141	.062	.000	.000	.000	.000
	AK# O Executive will not allow implementati on	.139		.053	.133	.160	.000	.260	.000
	AL# O There is insufficient time on the job to implement new e	.141	.053		.001	.280	.000	.004	.037

AM# O I feel supported in my endeavours to change practice bas	.062	.133	.001		.000	.000	.001	.000
AN# O The organisation has a positive research culture	.000	.160	.280	.000		.020	.039	.000
AO# O The organisation has an authoritarian approach to resear	.000	.000	.000	.000	.020		.116	.451
AP# O The organisation has good change management practices	.000	.260	.004	.001	.039	.116		.092
AQ# O Communicati on channels are effective	.000	.000	.037	.000	.000	.451	.092	

Communalities

	Initial	Extraction
AJ# O The facilities are adequate allowing research utilisatio	1.000	.855
AK# O Executive will not allow implementation	1.000	.960
AL# O There is insufficient time on the job to implement new e	1.000	.652
AM# O I feel supported in my endeavours to change practice bas	1.000	.805
AN# O The organisation has a positive research culture	1.000	.775
AO# O The organisation has an authoritarian approach to resear	1.000	.804
AP# O The organisation has good change management practices	1.000	.767
AQ# O Communication channels are effective	1.000	.782

Extraction Method: Principal Component Analysis.

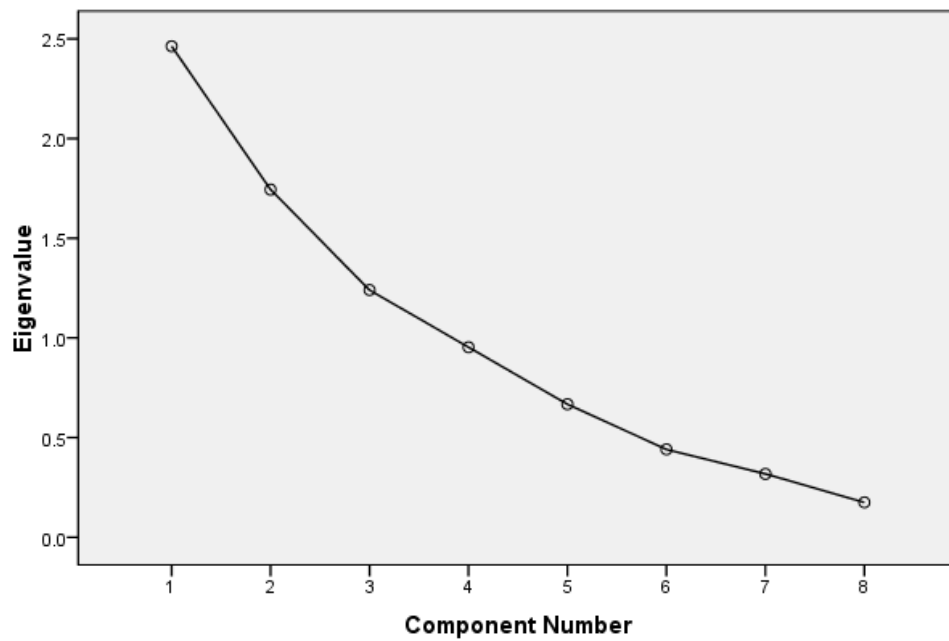
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.463	30.786	30.786	2.463	30.786	30.786	2.063	25.790	25.790
2	1.744	21.797	52.583	1.744	21.797	52.583	1.830	22.879	48.668
3	1.240	15.498	68.081	1.240	15.498	68.081	1.428	17.851	66.520
4	.953	11.917	79.998	.953	11.917	79.998	1.078	13.478	79.998
5	.667	8.338	88.336						
6	.441	5.507	93.844						
7	.318	3.969	97.813						
8	.175	2.187	100.000						

Extraction Method: Principal

Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
AJ# O The facilities are adequate allowing research utilisatio	.653	-.645		
AK# O Executive will not allow implementation				.834
AL# O There is insufficient time on the job to implement new e		-.539		
AM# O I feel supported in my endeavours to change practice bas	.709			
AN# O The organisation has a positive research culture	-.775			
AO# O The organisation has an authoritarian approach to resear	.505		.717	
AP# O The organisation has good change management practices		.834		
AQ# O Communication channels are effective	.689			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	Organisational Influence	Change management resources	Organisational time	Executive influence
AJ# O The facilities are adequate allowing research utilisatio		-.857		
AK# O Executive will not allow implementation				.966
AL# O There is insufficient time on the job to implement new e			-.757	
AM# O I feel supported in my endeavours to change practice bas	.803			
AN# O The organisation has a positive research culture	-.773			
AO# O The organisation has an authoritarian approach to resear			.824	
AP# O The organisation has good change management practices		-.851		
AQ# O Communication channels are effective	.813			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

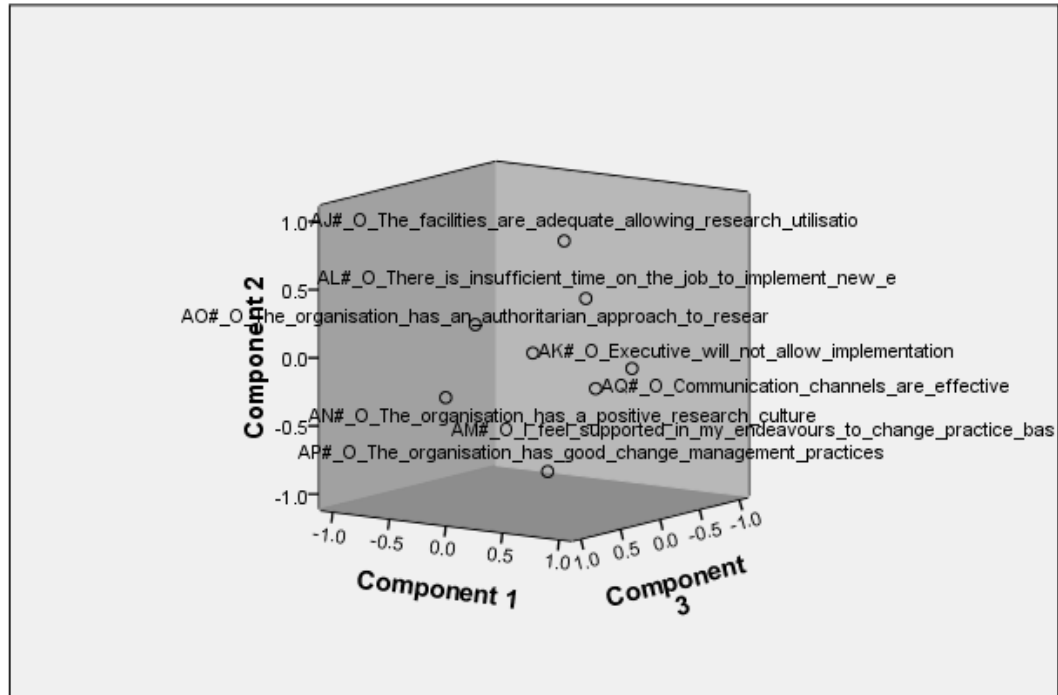
Component Transformation Matrix

Compone nt	1	2	3	4
1	.809	.397	.361	.238
2	.224	-.888	.364	.168
3	-.532	.231	.777	.246
4	-.107	-.003	-.366	.925

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

/VARIABLES AR# N I see little benefit in using research findings AS# N Research is never published fast enough AT# N I do not have
time to read research AU# N I do not have enough authority to influence a change a c
AV# N I do not see that value for implementation AW# N I do not feel that the results are generalisable to own AX# N I do not
feel capable of evaluating the quality of resea AY# N I have a good understanding of research utilisation mode
AZ# N I find research utilisation models to be nurse friendly BA# N I have received adequate training on
research and the u BB
N I find research utilisation models to assist with eviden BC# N I have the necessary skills to find evidence
BD# N I see research utilisation as a necessary step to contin BE# N New research stem from risk
identification BF# N I regularl
y benchmark my practice BG# N Time is a major factor for me BH# N Accessing new research materials is
easy for me
BI# N Research Information overload is a major issue for me BJ# N Embedding new evidence is essential for
me to maintain m

/MISSING LISTWISE

/ANALYSIS AR# N I see little benefit in using research findings AS# N Research is never published fast enough AT# N I do not have
time to read research AU# N I do not have enough authority to influence a change a c
AV# N I do not see that value for implementation AW# N I do not feel that the results are generalisable to own AX# N I do not
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AZ# N I find research utilisation models to be nurse friendly BA# N I have received adequate training on
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N I find research utilisation models to assist with eviden BC# N I have the necessary skills to find evidence
BD# N I see research utilisation as a necessary step to contin BE# N New research stem from risk
identification BF# N I regularl
y benchmark my practice BG# N Time is a major factor for me BH# N Accessing new research materials is
easy for me
BI# N Research Information overload is a major issue for me BJ# N Embedding new evidence is essential for
me to maintain m

/PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION

/FORMAT BLANK(.50)

/PLOT EIGEN ROTATION

/CRITERIA FACTORS(4) ITERATE(100)

/EXTRACTION PC

/CRITERIA ITERATE(100)

/ROTATION VARIMAX

/METHOD=CORRELATION.

Factor Analysis

Notes

Output Created		2009-11-13T12:41:28.626
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	Split File	<none>
	N of Rows in Working Data File	180
Missing Value	Definition of Missing	MISSING=EXCLUDE: User-defined missing values
Handling		are treated as missing.
	Cases Used	LISTWISE: Statistics are based on cases with no
		missing values for any variable used.

Syntax

FACTOR

/VARIABLES AR# N I see little benefit in using
research findings AS# N Research is never
published fast enough AT# N I do not have time to
read research AU# N I do not have enough authority
to influence a change a c

AV# N I do not see that value for implementation
AW# N I do not feel that the results are generalisable
to own AX# N I do not feel capable of evaluating the
quality of resea AY# N I have a good understanding
of research utilisation mode

AZ# N I find research utilisation models to be
nurse friendly BA# N I have received adequate
training on research and the u BB# N I find research
utilisation models to assist with eviden BC# N I have
the necessary skills to find evidence

BD# N I see research utilisation as a necessary
step to contin BE# N New research stem from risk
identification BF# N I regularly benchmark my
practice BG# N Time is a major factor for me BH# N
Accessing new research materials is easy for me

BI# N Research Information overload is a major
issue for me BJ# N Embedding new evidence is
essential for me to maintain m

/MISSING LISTWISE

/ANALYSIS AR# N I see little benefit in using
research findings AS# N Research is never
published fast enough AT# N I do not have time to
read research AU# N I do not have enough authority
to influence a change a c

AV# N I do not see that value for implementation
AW# N I do not feel that the results are generalisable
to own AX# N I do not feel capable of evaluating the
quality of resea AY# N I have a good understanding
of research utilisation mode

AZ# N I find research utilisation models to be
nurse friendly BA# N I have received adequate
training on research and the u BB# N I find research
utilisation models to assist with eviden BC# N I have
the necessary skills to find evidence

BD# N I see research utilisation as a necessary
step to contin BE# N New research stem from risk
identification BF# N I regularly benchmark my
practice BG# N Time is a major factor for me BH# N
Accessing new research materials is easy for me

BI# N Research Information overload is a major
issue for me BJ# N Embedding new evidence is
essential for me to maintain m

/PRINT UNIVARIATE INITIAL CORRELATION SIG
EXTRACTION ROTATION

/FORMAT BLANK(.50)

Resources	Processor Time	0:00:00.437
	Elapsed Time	0:00:00.375
	Maximum Memory Required	43972 (42.941K) bytes

[DataSet1] H:\E drive\PhD\Latestversioncontrol\ClintPHDOct2009v1.sav

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
AR# N I see little benefit in using research findings	2.2278	1.31528	180
AS# N Research is never published fast enough	2.0889	1.48846	180
AT# N I do not have time to read research	2.0278	.75065	180
AU# N I do not have enough authority to influence a change a c	2.5611	.49764	180
AV# N I do not see that value for implementation	2.2611	.70405	180
AW# N I do not feel that the results are generalisable to own	2.9278	.93373	180
AX# N I do not feel capable of evaluating the quality of resea	3.0889	1.13496	180
AY# N I have a good understanding of research utilisation mode	3.4389	.74116	180
AZ# N I find research utilisation models to be nurse friendly	3.4389	.49764	180
BA# N I have received adequate training on research and the u	2.7111	1.08050	180
BB# N I find research utilisation models to assist with eviden	3.3667	1.22771	180
BC# N I have the necessary skills to find evidence	3.5000	1.15066	180
BD# N I see research utilisation as a necessary step to contin	1.5500	.86052	180
BE# N New research stem from risk identification	1.8944	1.01661	180
BF# N I regularly benchmark my practice	1.9889	1.46081	180
BG# N Time is a major factor for me	1.3778	.77788	180
BH# N Accessing new research materials is easy for me	4.2556	.57043	180

BI# N Research Information overload is a major issue for me	1.6333	.90868	180
BJ# N Embedding new evidence is essential for me to maintain m	1.5333	.87421	180

Communalities

	Initial	Extraction
AR# N I see little benefit in using research findings	1.000	.634
AS# N Research is never published fast enough	1.000	.594
AT# N I do not have time to read research	1.000	.413
AU# N I do not have enough authority to influence a change a c	1.000	.797
AV# N I do not see that value for implementation	1.000	.895
AW# N I do not feel that the results are generalisable to own	1.000	.331
AX# N I do not feel capable of evaluating the quality of resea	1.000	.631
AY# N I have a good understanding of research utilisation mode	1.000	.869
AZ# N I find research utilisation models to be nurse friendly	1.000	.901
BA# N I have received adequate training on research and the u	1.000	.614
BB# N I find research utilisation models to assist with eviden	1.000	.329
BC# N I have the necessary skills to find evidence	1.000	.145
BD# N I see research utilisation as a necessary step to contin	1.000	.386
BE# N New research stem from risk identification	1.000	.830
BF# N I regularly benchmark my practice	1.000	.550
BG# N Time is a major factor for me	1.000	.124
BH# N Accessing new research materials is easy for me	1.000	.243
BI# N Research Information overload is a major issue for me	1.000	.238
BJ# N Embedding new evidence is essential for me to maintain m	1.000	.846

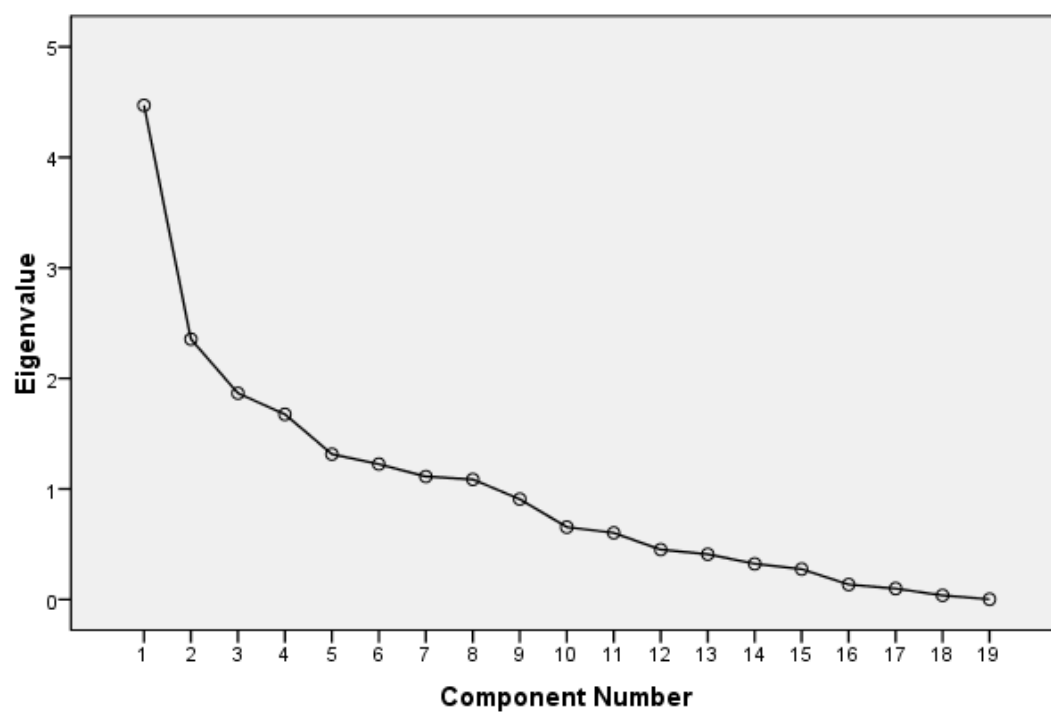
Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.471	23.531	23.531	4.471	23.531	23.531	3.516	18.503	18.503
2	2.355	12.396	35.927	2.355	12.396	35.927	2.868	15.095	33.598
3	1.866	9.820	45.747	1.866	9.820	45.747	2.276	11.977	45.575
4	1.675	8.817	54.564	1.675	8.817	54.564	1.708	8.989	54.564
5	1.314	6.918	61.482						
6	1.225	6.447	67.929						
7	1.112	5.855	73.784						
8	1.086	5.718	79.502						
9	.907	4.776	84.278						
10	.655	3.446	87.724						
11	.603	3.173	90.897						
12	.451	2.374	93.271						
13	.409	2.152	95.423						
14	.323	1.698	97.122						
15	.274	1.445	98.566						
16	.135	.710	99.276						
17	.099	.521	99.797						
18	.037	.193	99.990						
19	.002	.010	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
AR# N I see little benefit in using research findings		.658		
AS# N Research is never published fast enough		-.650		
AT# N I do not have time to read research				.610
AU# N I do not have enough authority to influence a change a c			.698	
AV# N I do not see that value for implementation	.646	.515		
AW# N I do not feel that the results are generalisable to own				
AX# N I do not feel capable of evaluating the quality of resea		.639		
AY# N I have a good understanding of research utilisation mode	-.913			
AZ# N I find research utilisation models to be nurse friendly	-.674	.507		
BA# N I have received adequate training on research and the u	.563			-.522
BB# N I find research utilisation models to assist with eviden				
BC# N I have the necessary skills to find evidence				
BD# N I see research utilisation as a necessary step to contin				.538
BE# N New research stem from risk identification	.838			
BF# N I regularly benchmark my practice	-.532			
BG# N Time is a major factor for me				
BH# N Accessing new research materials is easy for me				
BI# N Research Information overload is a major issue for me				
BJ# N Embedding new evidence is essential for me to maintain m	.859			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	User friendly research utilisation models	Nurses percieved value of research evidence	Nurses percieved value of research evidence	Time- Value- Knowled ge/skill
AR# N I see little benefit in using research findings			-.771	
AS# N Research is never published fast enough			.768	
AT# N I do not have time to read research				.621
AU# N I do not have enough authority to influence a change a c		.875		
AV# N I do not see that value for implementation		-.863		
AW# N I do not feel that the results are generalisable to own				
AX# N I do not feel capable of evaluating the quality of resea			-.791	
AY# N I have a good understanding of research utilisation mode		-.540		
AZ# N I find research utilisation models to be nurse friendly	-.940			
BA# N I have received adequate training on research and the u				-.543
BB# N I find research utilisation models to assist with eviden	-.540			
BC# N I have the necessary skills to find evidence				
BD# N I see research utilisation as a necessary step to contin				.572
BE# N New research stem from risk identification	-.819			
BF# N I regularly benchmark my practice	.618			
BG# N Time is a major factor for me				
BH# N Accessing new research materials is easy for me				

BI# N Research Information overload is a major issue for me				.625
BJ# N Embedding new evidence is essential for me to maintain m		.674		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

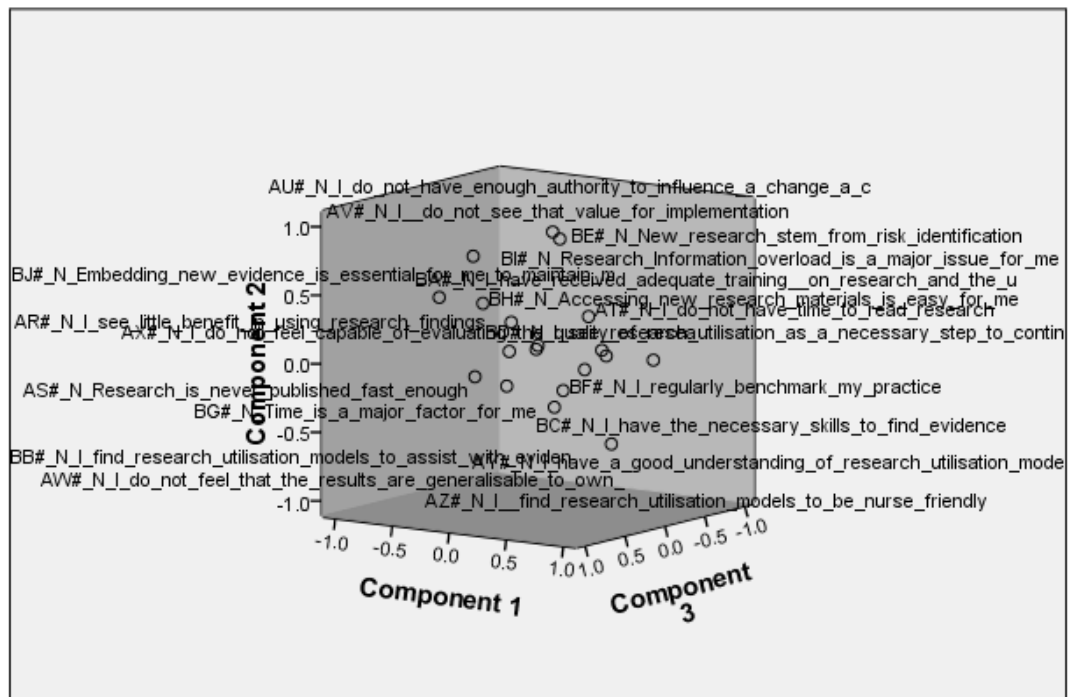
Component Transformation Matrix

Component	1	2	3	4
1	-.775	.608	-.163	-.047
2	.418	.294	-.838	-.192
3	.465	.721	.505	-.090
4	.088	.154	-.126	.976

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

```

/VARIABLES BK# E There is a lack of resources for research which affects BL# E Corporate governance
supports our capacity as a cli
inicia BM# E Nursing services are costed appropriately to allow for r
BN# E Activities are evaluated for cost effectiveness BO# E There is sufficient funding for research
/MISSING LISTWISE
/ANALYSIS BK# E There is a lack of resources for research which affects BL# E Corporate governance
supports our capacity as a cli
inicia BM# E Nursing services are costed appropriately to allow for r
BN# E Activities are evaluated for cost effectiveness BO# E There is sufficient funding for research
/PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION
/FORMAT BLANK(.50)
/PLOT EIGEN ROTATION
/CRITERIA FACTORS(4) ITERATE(100)
/EXTRACTION PC
/CRITERIA ITERATE(100)
/ROTATION VARIMAX
/METHOD=CORRELATION.

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Factor Analysis

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	File	
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Handling		treated as missing.
	Cases Used	LISTWISE: Statistics are based on cases with no missing
		values for any variable used.

Syntax	<p>FACTOR</p> <p>/VARIABLES BK# E There is a lack of resources for research which affects BL# E Corporate governance supports our capacity as a clinicia BM# E Nursing services are costed appropriately to allow for r BN# E Activities are evaluated for cost effectiveness BO# E There is sufficient funding for research</p> <p>/MISSING LISTWISE</p> <p>/ANALYSIS BK# E There is a lack of resources for research which affects BL# E Corporate governance supports our capacity as a clinicia BM# E Nursing services are costed appropriately to allow for r BN# E Activities are evaluated for cost effectiveness BO# E There is sufficient funding for research</p> <p>/PRINT UNIVARIATE INITIAL CORRELATION SIG</p> <p>EXTRACTION ROTATION</p> <p>/FORMAT BLANK(.50)</p> <p>/PLOT EIGEN ROTATION</p> <p>/CRITERIA FACTORS(4) ITERATE(100)</p> <p>/EXTRACTION PC</p> <p>/CRITERIA ITERATE(100)</p> <p>/ROTATION VARIMAX</p> <p>/METHOD=CORRELATION.</p>		
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[DataSet1] H:\E drive\PhD\Latestversioncontrol\ClintPHDOct2009v1.sav

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
BK# E There is a lack of resources for research which affects	1.5500	1.26524	180
BL# E Corporate governance supports our capacity as a clinicia	2.7611	1.01036	180
BM# E Nursing services are costed appropriately to allow for r	3.7389	.88667	180
BN# E Activities are evaluated for cost effectiveness	4.2333	.62624	180
BO# E There is sufficient funding for research	4.2389	.61056	180

Correlation Matrix

		BK# E	BL# E	BM# E	BN# E	BO# E
Correlation	BK# E There is a lack of resources for research which affects	1.000	-.093	.079	.006	-.041
	BL# E Corporate governance supports our capacity as a clinicia	-.093	1.000	-.282	.044	.030
	BM# E Nursing services are costed appropriately to allow for r	.079	-.282	1.000	.080	-.060
	BN# E Activities are evaluated for cost effectiveness	.006	.044	.080	1.000	-.030
	BO# E There is sufficient funding for research	-.041	.030	-.060	-.030	1.000
Sig. (1-tailed)	BK# E There is a lack of resources for research which affects		.106	.146	.466	.293
	BL# E Corporate governance supports our capacity as a clinicia	.106		.000	.277	.346
	BM# E Nursing services are costed appropriately to allow for r	.146	.000		.142	.214
	BN# E Activities are evaluated for cost effectiveness	.466	.277	.142		.346
	BO# E There is sufficient funding for research	.293	.346	.214	.346	

Communalities

	Initial	Extraction
BK# E There is a lack of resources for research which affects	1.000	.999
BL# E Corporate governance supports our capacity as a clinicia	1.000	.687
BM# E Nursing services are costed appropriately to allow for r	1.000	.675
BN# E Activities are evaluated for cost effectiveness	1.000	.949
BO# E There is sufficient funding for research	1.000	.998

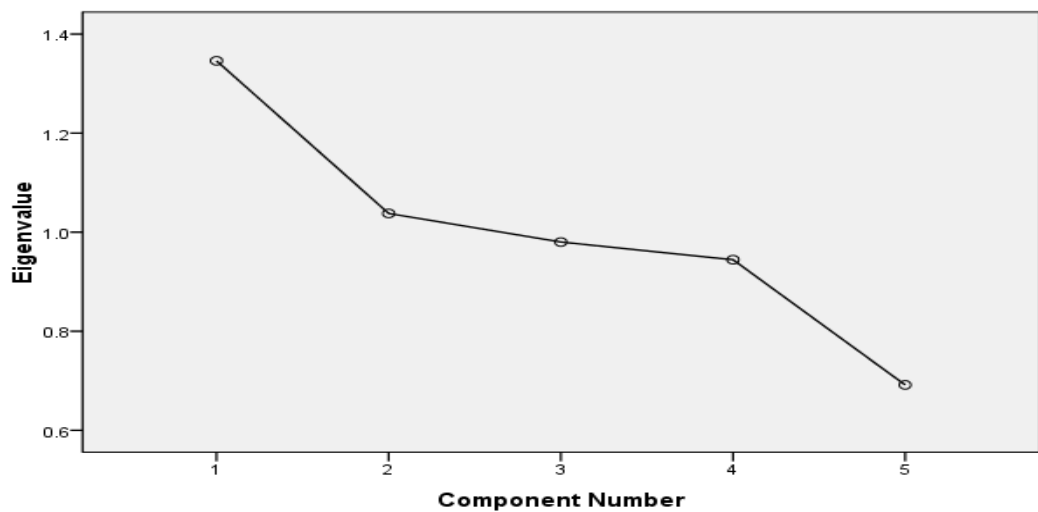
Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.346	26.922	26.922
2	1.038	20.756	47.678
3	.980	19.602	67.281
4	.944	18.887	86.168
5	.692	13.832	100.000

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
BK# E There is a lack of resources for research which affects				.790
BL# E Corporate governance supports our capacity as a clinicia	-.733			
BM# E Nursing services are costed appropriately to allow for r	.757			
BN# E Activities are evaluated for cost effectiveness		.848		
BO# E There is sufficient funding for research			.711	

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	1	2	3	4
BK# E There is a lack of resources for research which affects				.997
BL# E Corporate governance supports our capacity as a clinicia	-.805			
BM# E Nursing services are costed appropriately to allow for r	-.510			
BN# E Activities are evaluated for cost effectiveness		-.974		
BO# E There is sufficient funding for research			-.999	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

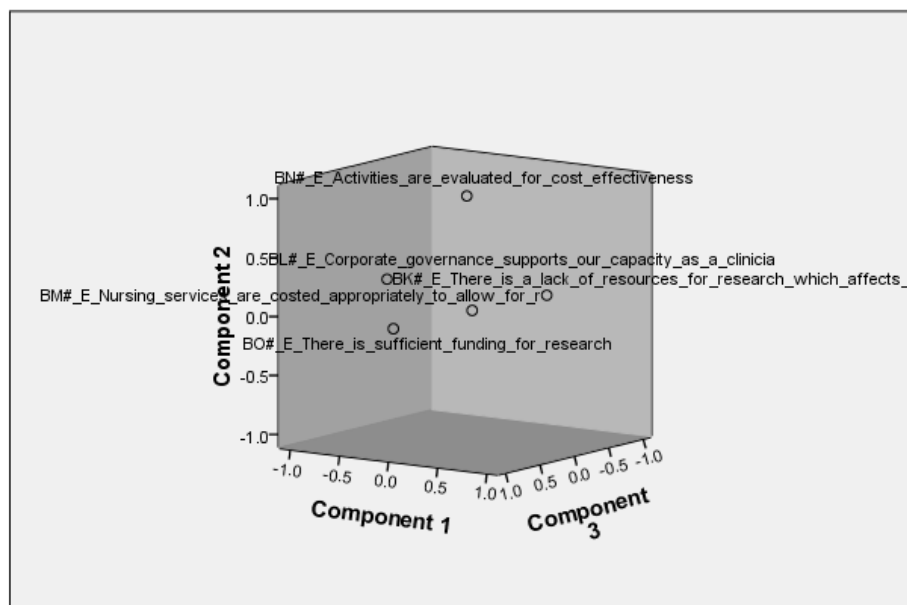
Component Transformation Matrix

Component	1	2	3	4
1	.909	.099	-.215	.344
2	-.187	.868	-.458	-.041
3	.301	.421	.716	-.468
4	-.221	.245	.480	.813

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space



FACTOR

```
/VARIABLES BP# L We are slow to adopt new evidence BQ# L New research is viewed as a risk to patients
BR# L Patient errors increas
e because our practices never chan BS# L Staff fear new technologies BT# L Staff embrace change
BU# L Our staff generate their own research evidence BV# L Senior staff lead innovative change
/MISSING LISTWISE
/ANALYSIS BP# L We are slow to adopt new evidence BQ# L New research is viewed as a risk to patients
BR# L Patient errors increase
because our practices never chan BS# L Staff fear new technologies BT# L Staff embrace change
BU# L Our staff generate their own research evidence BV# L Senior staff lead innovative change
/PRINT UNIVARIATE INITIAL CORRELATION SIG EXTRACTION ROTATION
/FORMAT BLANK(.50)
/PLOT EIGEN ROTATION
/CRITERIA FACTORS(4) ITERATE(100)
/EXTRACTION PC
/CRITERIA ITERATE(100)
/ROTATION VARIMAX
/METHOD=CORRELATION.
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Factor Analysis

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Missing Value Handling	Definition of Missing	MISSING=EXCLUDE: User-defined missing values are treated as missing.
	Cases Used	LISTWISE: Statistics are based on cases with no missing values for any variable used.
Syntax		<p>FACTOR</p> <p> /VARIABLES BP# L We are slow to adopt new evidence BQ# L New research is viewed as a risk to patients BR# L Patient errors increase because our practices never chan BS# L Staff fear new technologies BT# L Staff embrace change</p> <p> BU# L Our staff generate their own research evidence BV# L Senior staff lead innovative change</p> <p> /MISSING LISTWISE</p> <p> /ANALYSIS BP# L We are slow to adopt new evidence BQ# L New research is viewed as a risk to patients BR# L Patient errors increase because our practices never chan BS# L Staff fear new technologies BT# L Staff embrace change</p> <p> BU# L Our staff generate their own research evidence BV# L Senior staff lead innovative change</p> <p> /</p>
Resources	Processor Time	0:00:00.437
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[DataSet1] H:\E drive\PhD\Latestversioncontrol\ClintPHDOct2009v1.sav

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
BP# L We are slow to adopt new evidence	2.4000	1.47076	180
BQ# L New research is viewed as a risk to patients	3.4611	.70405	180
BR# L Patient errors increase because our practices never chan	2.0944	1.38506	180
BS# L Staff fear new technologies	2.4167	.99650	180
BT# L Staff embrace change	2.6222	1.61749	180
BU# L Our staff generate their own research evidence	2.9278	1.44172	180
BV# L Senior staff lead innovative change	3.1500	1.24835	180

Correlation Matrix

		BP# L	BQ# L	BR# L	BS# L	BT# L	BU# L	BV# L
Correlation	BP# L We are slow to adopt new evidence	1.000	.042	.091	.187	.299	-.202	.454
	BQ# L New research is viewed as a risk to patients	.042	1.000	-.251	-.148	.281	.281	-.124
	BR# L Patient errors increase because our practices never chan	.091	-.251	1.000	.222	.230	-.108	.131
	BS# L Staff fear new technologies	.187	-.148	.222	1.000	.012	-.193	.255
	BT# L Staff embrace change	.299	.281	.230	.012	1.000	-.009	.164
	BU# L Our staff generate their own research evidence	-.202	.281	-.108	-.193	-.009	1.000	-.121
	BV# L Senior staff lead innovative change	.454	-.124	.131	.255	.164	-.121	1.000
Sig. (1-tailed)	BP# L We are slow to adopt new evidence		.287	.112	.006	.000	.003	.000
	BQ# L New research is viewed as a risk to patients	.287		.000	.024	.000	.000	.049
	BR# L Patient errors increase because our practices never chan	.112	.000		.001	.001	.074	.040
	BS# L Staff fear new technologies	.006	.024	.001		.439	.005	.000
	BT# L Staff embrace change	.000	.000	.001	.439		.450	.014
	BU# L Our staff generate their own research evidence	.003	.000	.074	.005	.450		.053
	BV# L Senior staff lead innovative change	.000	.049	.040	.000	.014	.053	

Communalities

	Initial	Extraction
BP# L We are slow to adopt new evidence	1.000	.728

BQ# L New research is viewed as a risk to patients	1.000	.711
BR# L Patient errors increase because our practices never chan	1.000	.875
BS# L Staff fear new technologies	1.000	.600
BT# L Staff embrace change	1.000	.827
BU# L Our staff generate their own research evidence	1.000	.871
BV# L Senior staff lead innovative change	1.000	.695

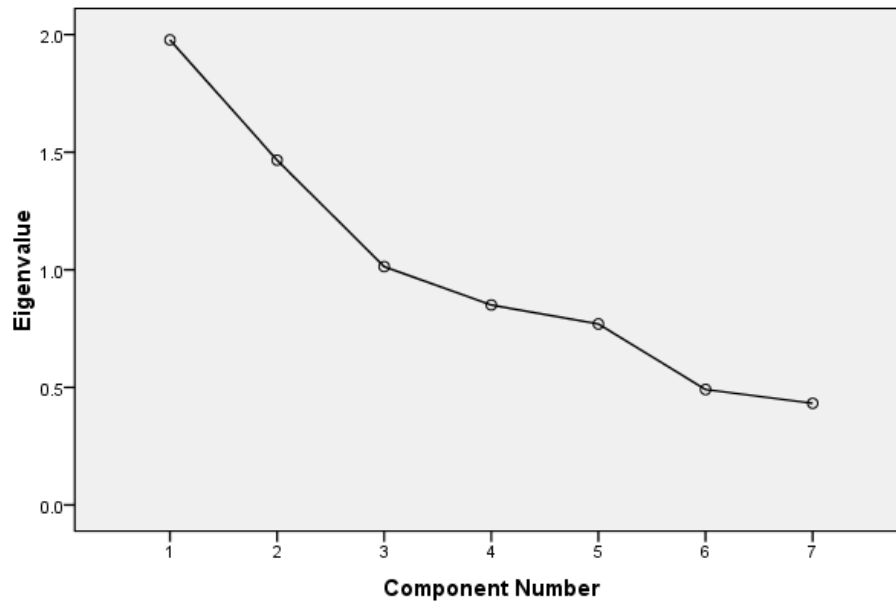
Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.977	28.247	28.247	1.977	28.247	28.247	1.570	22.435	22.435
2	1.466	20.945	49.191	1.466	20.945	49.191	1.362	19.462	41.897
3	1.013	14.477	63.669	1.013	14.477	63.669	1.231	17.581	59.479
4	.850	12.147	75.816	.850	12.147	75.816	1.144	16.337	75.816
5	.770	10.993	86.809						
6	.491	7.014	93.823						
7	.432	6.177	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
BP# L We are slow to adopt new evidence	.675			
BQ# L New research is viewed as a risk to patients		.781		
BR# L Patient errors increase because our practices never chan	.504		.772	
BS# L Staff fear new technologies	.571			
BT# L Staff embrace change		.689		
BU# L Our staff generate their own research evidence				.675
BV# L Senior staff lead innovative change	.690			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Rotated Component Matrix^a

	Component			
	1	2	3	4
BP# L We are slow to adopt new evidence	.686			
BQ# L New research is viewed as a risk to patients		.593		
BR# L Patient errors increase because our practices never chan			.919	
BS# L Staff fear new technologies	.618			
BT# L Staff embrace change		.565		
BU# L Our staff generate their own research evidence				.926
BV# L Senior staff lead innovative change	-.828			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Component Transformation Matrix

Component	1	2	3	4
1	.774	.180	.438	-.420
2	.161	.868	-.281	.376
3	-.423	.260	.842	.210
4	.443	-.382	.141	.799

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Plot in Rotated Space

