FACTORS INFLUENCING RURAL NURSES ATTITUDES AND BELIEFS TOWARDS EVIDENCED BASED PRACTICE

by

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ABSTRACT

The purpose of the study was to explore factors that influence rural nurses' attitudes and beliefs towards evidence-based practice by answering the following questions: Do rural nurses find research easy to understand? Do rural nurses believe the results of the research that they read? Does number of years of experience as a nurse affect rural nurses' attitudes and beliefs about research? Does level of education influence rural nurses attitudes and beliefs toward research? Does the size of facility that a rural nurse works in affect attitudes and beliefs toward research? Does the role of a rural nurse within his or her facility affect attitudes and beliefs towards research? This study was a secondary analysis of survey data collected from rural nurses practicing in Oregon, Montana, and South Dakota. Demographic information and responses to survey questions related to attitudes and beliefs provided from 224 nurses were examined to achieve the aims of this study. Regardless of experience or role, most respondents indicated they were proficient in evaluating research, but over half of the respondents were unsure if they believed the results of the research that they read. Nurses with 1-5 years of experience, those with master's preparation, and nurse practitioners had the best attitudes towards research while nurses with greater than 20 years and charge nurses had the worst. There were no appreciated differences in attitudes between diploma, associate degree, and baccalaureate prepared. Given that nurses constitute the largest group of health care providers and their care influences patient outcomes, the pressure on the nursing profession to strengthen the importance of evidence-based practice for all registered nurses is crucial. Further research is needed to explore the role that education, and role have in determining a rural nurse's attitudes and beliefs towards EBP.

CHAPTER 1

INTRODUCTION

Background

Nurses constitute the largest group of health care providers and their care influences patient outcomes (Aiken, Clarke, Cheung, Sloan, & Siber, 2003). Evidence-based practice (EBP) is a hallmark of professional nursing practice and high quality patient care (Case, 2004).

"Evidenced-based practice (EBP) is a problem solving approach to the delivery of clinical care that incorporates the best evidence from well-designed studies along with a clinician's expertise, and patient preferences" (Melnyk et al., 2006). EBP is further characterized by the American Nurses Association (ANA) as practice that occurs within the context of available resources. It has been suggested that implementing evidence-based practice is especially important in rural and remote practice, to ensure the best outcomes for populations in areas with limited health-care choices and resources (Taylor, Wilkenson & Blue, 2001).

Evidence-based nursing de-emphasizes ritual, isolated and unsystematic clinical experiences, ungrounded opinions, and tradition as a basis for practice. It stresses the use of research findings and other operational and evaluation data, the consensus of recognized experts, and affirmed experience to substantiate clinical practice (American Nurses Credentialing Center, 2005).

The foundation for EBP is the adoption of a large volume of scientifically sound research that has been tested in a way which will allow it to be replicated. Evidence-based practice is valuable to nursing because it involves the problem solving process and allows nurses to (a) clearly identify the issue or problem based on accurate analysis of current nursing knowledge and practice, (b) search the literature for relevant research, (c) evaluate the research evidence using established criteria regarding scientific merit, (d) choose interventions, and (e) justify the selection with the most valid evidence.

The profession of nursing has recognized that research is the basis for knowledge development and evidenced- based practice supports this premise. However, a growing number of research studies (Estabrooks, Midodzi, Cummings, & Wallin, 2007; Funk, Champagne, Wiese & Tornquist, 1991; Hommelstad & Cornelia, 2004; Taylor et al., 2001; Olade, 2003) have identified barriers that interfere with the ability of nurses to utilize evidenced-based nursing in practice. Barriers identified include lack of accessibility of research, poor organizational support of using research, lack of support from colleagues, limited knowledge of research methods, lack of access to technology, and lack of time. Additionally, a small body of research literature has focused on nurses' attitudes and beliefs about research (Olade, 2004; Melnyk, Overholt, Feinstein et al., 2004; Morrison, 1998; Smirnoff, Ramirez, Kooplimae, Gibney & McEvoy, 2007). From the literature available, it is apparent that nurses with positive attitudes and beliefs that EBP can and will enhance their practice are more likely to utilize research and incorporate it into practice than nurses whose attitudes and beliefs towards EBP are negative (Rizzuto, Bostrom, Suter & Chenitz, 1994). Furthermore, positive attitudes

toward research have been found to directly relate to educational levels, and participation in research (Smirnoff et al.).

Numerous authors writing about EBP clearly support the premise that nurses need to be knowledgeable about how to access and use research (Taylor et al; Pravikoff, Tanner, & Pierce, 2005; Parsons, Merlin,Taylor, Wilkenson, & Hiller, 2003; Olade, 2004; Funk et al., 1991). However, limited literature exists regarding rural nurses' access and use of research in practice (Olade). Because of the professional isolation, limited access to colleagues with research backgrounds, limited budgets for continuing education, lack of medical libraries and administrative support for staff involvement in research, and technology resources, rural nurses may be at a disadvantage compared to nurses working in urban settings when it comes to an environment supportive of nurses' access and use of research (Olade, 2003).

It is unclear whether an association exists between nurses' perceived knowledge of and beliefs toward EBP and the magnitude to which practice is evidence-based (Melnyk et al., 2004). No matter how true a person believes a hypothesis to be, it remains a hypothesis because there is always the possibility that it is false (Levi, 1991). Although a person can never completely remove all doubt on every issue, he or she hopes to come closer to doing so by removing more and more doubts and becoming more certain of answers to some questions (Levi). Most people think that what they believe about reality and what they know about reality are the same thing, but this is not true (Paterson, 2002). Beliefs are arrived at through processes of logical deduction or are learned from peers, superiors, and society (Paterson), whereas knowing something, e.g.

understanding reality, (Kazlev, 1998), can be influenced by several factors, such as science, philosophy, rationalism/skepticism, religion, mysticism, gnosis, esotericism and occultism (Kazlev).

Problem

Nurses address human responses to alterations or potential alterations in health. A strong policy emphasis on clinical effectiveness means that health care professionals are increasingly called upon to justify the evidence base for their decisions, both to consumers and those in position to create and support health care policy (French, 2005). Most nursing leaders would agree that EBP should be "usual and customary" in their organizations (Munroe, Duffy, & Fisher, 2006). The Joint Commission (JC) requires nurse executives to ensure quality nursing care including incorporating current research findings into practice. This is a challenging goal because many nurses do not understand nor have the skills to seek and apply evidence to their day to day practice (Pravikoff et al).

Nurses working and living in rural areas may have more difficulty understanding and believing research than those nurses practicing in metropolitan facilities. The further one ventures away from large urban medical centers, the less one hears about research utilization activities for EBP in nursing (Olade, 2004). Isolation from colleagues who are involved in research, limited access to research, lack of technology, and lack of research specific to rural nursing are all factors that could influence rural nurses' attitudes and beliefs about research.

The JC does require nurse executives to ensure quality nursing care including incorporating current research findings into practice. A gap exists between the time research findings are reported and the time they are incorporated into practice. If rural nurses are not familiar with research, how to access research, or do not value research, this gap may be exaggerated, putting patients at a disadvantage. If nursing is to be an evidenced-based profession, improving the use of research findings in clinical practice must occur within urban and rural settings (Olade, 2004).

The Purpose of the Study

The purpose of the study was to explore factors that influence rural nurses' attitudes and beliefs towards EBP. This research addressed these questions:

1. What are rural nurses' attitudes and beliefs about research and evidenced based practice?
2. Do rural nurses find research easy to understand?
3. Do rural nurses believe the results of the research that they read?
4. Does number of years of experience as a nurse affect rural nurses' attitudes and beliefs about research?
5. Does level of education influence rural nurses attitudes and beliefs toward research?
6. Does the size of facility that a rural nurse works in affect attitudes and beliefs toward research?

7. Does the role of a rural nurse within his or her facility affect attitudes and beliefs towards research?

Definition of Terms

For purposes of this study, the following definitions were used:

1. EBP: "A process based on the collection, interpretation, and integration of valid, important, and applicable data, information, and knowledge preferably derived from research findings to define the best approach or solution". (ANA, 2004, p.31).
2. Rural work setting: A nonmetropolitan county with a population up to 19,999, adjacent or nonadjacent to a metropolitan area (U.S.DA Economic Research Service Continuum, Codes 6-9, 2003) (http://www.ers.U.S.da.gov/Briefing/Rurality/RuralUrbCon/).
3. Rural nursing: "The provision of health care by professional nurses to persons living in sparsely populated areas" (Long & Weinert, 1989; 2006).
4. Belief: "A conviction held in the absence of evidence" (Rawnsley, 2003).
5. Attitude: "A mental position with regard to fact or state" (Merrium-Webster Medical Dictionary, 2007).

Significance for Nursing

Understanding rural nurses' attitudes and beliefs towards research has potential to contribute meaningfully to nursing knowledge by providing researchers, educators, and

other nursing professionals the foundational knowledge to influence rural nurses' interest and use of evidence in practice. Understanding the factors that influence rural nurses' will also contribute to our understanding of the uniqueness of rural nursing. Rural nurses often have a wide variety of responsibilities (Olade, 2003, Scharff, 2006) such as (a) providing primary care for an obstetrical, trauma, cardiac and postoperative patient during a single shift, (b) serving as the cook or the respiratory therapist at times, and (c) perhaps doing a little plumbing on the weekend when no maintenance staff is available. The uniqueness of rural nursing practice may influence the nurses' beliefs and or attitudes regarding research and EBP.

Theoretical Perspective

Rural nursing is defined as the provision of health care by professional nurses to persons living in sparsely populated areas (Long & Weinert, 1989). Rural nursing is "a special variety of nursing in which the nurse must have a wide range of advanced knowledge and ability, in combination with commitment, to practice proficiently in multiple clinical areas simultaneously along the career trajectory" (Scharff, 2006, p. 195). Independent decision making is a given in rural practice. Rural nursing theory (RNT), a descriptive middle range theory, originally published by Long and Weinert (1989) was used to guide this study. RNT was developed so that researchers would have a format for describing, explaining and predicting phenomena within the rural nursing culture (Lee & McDonagh, 2006). The theory includes three statements: (a) a rural person's definition of health, (b) rural health seeking behaviors and, (c) the role of rural health care providers

including their lack of anonymity and greater role diffusion than providers in more urban areas. The third statement was used to guide this study because it is the role diffusion coupled with the context in which rural nurses practice that makes use of evidence so critical to rural practice.

Role diffusion may also contribute to rural nurses' attitudes and beliefs towards EBP. Rural nurses have many jobs which can include the role of pharmacist, dietician, respiratory therapist and medical records clerk. Rural nurses often have to "make do" with what is available and may not be as easily influenced by what research or evidence supports or does not support because of decreased exposure to research due to limited resources, professional isolation from access to colleagues with research backgrounds, and lack of administrative support for staff involvement in research (Olade, 2004, Scharff, 2006).

CHAPTER 2

REVIEW OF LITERATURE

This chapter consists of a review of selected literature related to beliefs, attitudes, rural nursing, and rural nursing theory (RNT). The specific aspects addressed included (a) nurses' access and use of research, (b) nurses' education, attitudes and beliefs towards research, (c) nurses' ability to understand and believe research, (d) years of nursing experience as they relate to nurses' attitudes and beliefs about research, and, (e) the impact that nursing position plays on attitudes and beliefs towards research. Key words and phrases used to search the literature included: (a) rural nurses, (b) rural nurse values, (c) rural nurses and evidenced based practice,(d) rural nurses and computer usage, (e) rural attitudes, (f) influence attitudes, (g) rural nurses' understanding of research, (h) associate nurse,(i) diploma nurse, and (j) baccalaureate nursing education.

Beliefs and Attitudes

A considerable amount of philosophical writing is available about attitudes and beliefs including some mathematical equations defining attitudes and beliefs. The definitions used for this paper were chosen because of the ease of understanding and ability to relate to rural nurses. Attitudes and beliefs are often thought of as being the same but an attitude is a behavior toward an object or situation while a belief is a determinant of the attitude toward an object or situation but is not itself the attitude (Albarracin, Johnson, & Zanna, 2005). A belief can be considered as a conviction held in

the absence of evidence (Rawnsley, 2003) while an attitude is a mental position with regard to fact or state (Merrium-Webster, 2007). No matter how complete one is in finding answers to questions, there will always be some aspect of issues under investigation that remain unsettled (Levi, 1991). To believe something, a person does not actively have to reflect on it because an adult has many beliefs and only a few can be at the forefront of the mind at any given time (Schwitzgebel, 2006). Most contemporary philosophers characterize belief as a "propositional attitude" (Schwitzgebel) which is a mental state of having some attitude, stance, take, or opinion about a proposition or about the state of affairs in which a proposition is true. It is common to suppose that belief plays a part or role in the production of behavior. An attitude can be a learned predisposition to behave a certain way towards a given situation or a readiness to react to certain states or classes of object, not necessarily as they are, but how they are *perceived* to be (Biology online, 2005). Attitudes are perspectives that people bring with them to any situation and are influenced by a person's life experiences, genetics and educational level but attitudes are under a person's conscious control (The New Medicine, 2005). Behaviors usually, but not always reflect a person's attitudes and beliefs and ideally, positive attitudes reflect well-adjusted behaviors (Martin, 2001).

Rural Nursing/Rural Nursing Theory

"Knowing rural means knowing that what one knows may be all one has" (Scharff, 2006, p. 181). Rural also means that nurses probably know the people they work with and their families on a personal level as well as a professional level, and they

quite probably know their patients and their families, friends and acquaintances as a healthcare provider. Rural persons are resilient and know how to make do (Scharff, 2006).

The RNT evolved because of a recognized need for a framework for practice that considers perceptions and needs of persons from rural areas. Before the inception of RNT it was believed that care of rural persons was similar to the care of persons living in urban environments (Lee & Winters, 2004). The RNT was developed using quantitative and qualitative data obtained from people who lived in one of thirteen sparsely populated counties in Montana.

The analysis of the data resulted in three relational statements related to definition of health, attitudes and beliefs concerning self-reliance, and health care providers' practice environment. While more work is needed to further develop the RNT (Lee & Winters, 2004), it is generally accepted that nurses in remote areas are more likely to be multi-skilled, independent expert generalists practicing in settings with few healthcare resources and limited access to education, biomedical, and telecommunication technology (Bushy, 2002).

Out of necessity, rural nurses routinely perform functions that are well within the realm of other health care disciplines such as respiratory therapy, pharmacy, and medicine (Scharff, 2006). Health care professionals in rural practice are often called "generalists" because they care for individuals of all ages with a wide variety of health problems. For example, in a small rural hospital the nurses who work there may care for an obstetrical patient, a post-operative patient, and an elderly person with a persistent

chronic health problem, all within the same shift. Considering the wide variety of patients, the independent nature of rural nursing, and distance from professional colleagues (Olade, 2003), it is important that nurses use research findings for EBP decisions at the bedside and have access to resources that encourages the use of EBP.

Nurses' Access and use of Research

For decades, researchers have explored the degree to which nurses use research findings in their practice (Funk et al, 1991). Rodgers (as cited in French, 2005) found that research use in nursing practice is increasing, but there are variations in the level of research use based on nurses' educational levels and the culture within the practice setting.

A study conducted by Rizzuto et al. (1994) explored 1,217 nurses' attitudes about nursing research, perceptions of the extent of support for nursing research at work, their involvement in research activities, and personal and environmental factors that predict nurses' involvement in nursing research. Thirty- three percent (n=401) of nurses in the study were interested in conducting their own research, 41.7% (n=507) were interested in collaborating with others in conducting research and applying findings to practice, and 38% (n=462) indicated that they intended to collect data for research other than their own. The respondents to this study were employed in urban health care settings and had higher levels of education than nurses in the general population.

In a study conducted to assess readiness for EBP, Pravikoff et al. (2005) found in a stratified random sample of 3,000 Registered Nurses (RN) across the United States

(US) that 760 respondents (25.3%) who worked in clinical settings acknowledged that they frequently need information for practice. Pravikoff also found that these nurses were more confident asking a colleague or peer and searching on the Internet for information than using databases such as Pubmed or the Cumulative Index to Nursing and Allied Health Literature (CINAHL) to find the information needed. Sixty- seven percent (n=509) of the respondents said they always or frequently sought information from a colleague rather than from a reference text or journal article.

A qualitative study conducted by Winters, Lee, Besel et al. (2007) for the purpose of assessing access to and use of research by rural nurses, revealed that rural nurses lack the knowledge to appropriately evaluate research. In the study 29 rural nurses from nine communities were interviewed by Montana State University graduate students. The interviews were audio taped, transcribed verbatim and assessed for common themes. Themes that emerged were (a) *Research means gathering information*. Most of the nurses interviewed used the term research to mean 'gather information' and when questioned regarding how often they used research, answers varied from 2-3 times per day to 2-3 times per month. Study participants stated that primary sources of information were colleagues, and the Internet. Their most available sources of information were knowledgeable colleagues, journals available at work, books, on- and off- site workshops, and teleconferences. (b) *Professional isolation*. The nurses acknowledged that the professional isolation that is common in rural areas affects access to other knowledgeable colleagues even though colleagues was listed as one of the primary sources of information. (c) *Common resources*. Seventy nine percent (n=23) of the

nurses stated that they have Internet access at work and eighty six percent (n=25) had Internet access at home. Although Internet was stated to be a primary source of information gathering, several nurses made comments about the computer availability being limited because of computer location, limited time to search for information and lack of overall general computer knowledge. Journals and text books were available at work to most of the nurses as well as on-site in-services and teleconferences originating from larger hospitals within the state. (d) *Facilitators and barriers*. The barriers to research use included lack of (a) knowledge regarding research methods, (b) time at work or home to research or gather information, (c) computer and Internet access in work areas, (d) computer knowledge, and (e) decreasing financial assistance for continuing education from employers (Winters et al.).

Geographic isolation and the consistent lack of human and fiscal resources in rural health care settings (Bushy, 2000) may influence EBP. Kosteniuk, D'Arcy, Stewart & Smith (2006) surveyed 3933 rural Canadian nurses between October 2001 and July 2002 to examine the use of central (colleagues, in-service and newsletter) and peripheral (Internet, library, journal subscriptions, and continuing education) information sources. Nursing colleagues were ranked as the information source most used and the Internet and library ranked the lowest. On average, nurses used a statistically significant greater number of central (99%; n=3894) than peripheral sources (94.4%; n=3713). Peripheral information sources were used more often among nurses who had access to current information, opportunities to share their knowledge with others, higher education levels, were in positions of authority, and worked with healthcare students.

Associated with the problems of geographic and professional isolation is the consistent lack of human and financial resources in rural environments (Bushy, 2000). There are a very limited number of studies available about rural nurses' utilization of EPB (Olade, 2003, Winters et al, 2007).

Education, Attitudes and Beliefs towards Research

Improving knowledge about research methods and skills for critical appraisal of research reports have been identified as means to potentially overcome barriers to individual nurses' research utilization, and ultimately improve nursing practice (McCleary & Brown, 2003). A study conducted by McCleary and Brown, (2003), using the Edmonton Research Orientation Survey (EROS), a two-part measure of research involvement, research utilization, and attitudes towards research, was distributed through the mail to 528 pediatric Registered Nurses (RNs) in a teaching hospital in Ontario, Canada. The objective of the study was to examine independent relationships between nurses' education about research and research utilization. Of the 175 nurses returning the survey, higher levels of education were associated with both (a) positive attitudes towards research and (b) higher levels of self-reported research utilization (McCleary & Brown). Whether or not nurses had university education, completing a course about research design or a course about how to read and use research was associated with positive attitudes towards research.

Farella (2001) conducted a survey in which more than 1.7 million readers of *Nursing Spectrum* magazine and its website were asked how they would solve the US

nursing shortage. A theme that emerged within the hundreds of survey respondent answers was to "integrate more science and computer technology in undergraduate nursing programs and that research evaluation should also be stressed so nurses can lead the development of evidence-based practice" (p.6). A working paper (American Association of Colleges of Nursing [AACN], 2004) on the newly developed Clinical Nurse Leader (CNL) role included the statement that "Most professional nursing education programs have included a course in nursing research but often have neglected the more meaningful pursuit of clinical scholarship, i.e., the application of research to the clinical setting, the resolution of clinical problems and dissemination of results" (p1).

Goode, Pinkerton, McCausland, Southard, Graham & Krsek (2001) found that 72% of chief nursing officers in university hospitals had noted differences between nurses with diplomas or associate degrees in nursing and nurses with baccalaureate (BSN) degrees in regard to critical thinking and leadership skills. Aiken and colleagues' (2003) landmark study found that if the proportion of BSN nurses in all hospitals was 60% rather than 20%, almost 18 fewer deaths per 1,000 surgical patients within 30 days of hospital admission would be anticipated. Reams and Stricklin (2006) also reported data compiled by Kramer (1990) and Aiken (2000) that show health care facilities with higher percentages of baccalaureate prepared nurses enjoy better patient outcomes overall as well as significantly lower mortality rates. These "Magnet Hospitals" are model patient care facilities that typically employ a higher proportion of baccalaureate prepared nurses, with 59% of nurses with BSN degrees as compared to 34% with BSN at non-Magnet hospitals.

In a study of 1,217 nurses designed to predict nurses' involvement in research activities (Rizzuto et al.1994), researchers found that the number of research courses taken was one of the most potent predictors of positive attitudes toward research. These findings support the belief of some nurse researchers that in order to increase the use of research and evidenced -based practice, nursing entry level to practice should be a baccalaureate degree versus an associate or diploma degree since courses in research are not included in most associate or diploma nursing school curricula.

In Australia, where current entry level of practice for registered nurses is a three year undergraduate baccalaureate degree, there is currently a four year undergraduate program being offered by a rural campus of LaTrobe University in Bendigo, Victoria (Kenny, Carter, Martin & Williams, 2003). It is argued that the enhanced knowledge and skills that the students enrolled in this four-year program acquire will prepare them more adequately than a three-year program to face the challenges of a demanding area of practice, rural nursing. In many cases rural nurses are not prepared for the responsibilities they encounter and there have been suggestions of inadequate nursing care being provided due to nurses' lack of knowledge (Lampshire & Rolfe, 1994). The four-year Bachelor of Nursing Science degree offered an opportunity for the rural faculty of LaTrobe University Bendigio to be responsive to the needs of rural and regional health services (Kenny et al.). By providing students with a broader curriculum, one that encompassed additional science, management, leadership, research skills and increased clinical learning opportunities, the program aimed to provide students with enhanced learning that would better prepare them for the complexity of the rural environment

(Kenny et al.). Two graduates of the four-year LaTrobe University program identified the relationship between an increased knowledge of research and clinical practice. One suggested that the extra research increased her ability in interpreting research findings and utilizing these findings in practice and another felt that the four-year program, rather than a two or three-year nursing program gave her a broader, more thorough knowledge of what EBP means and how to utilize it (Kenny et al.).

In a sample of 106 rural nurses (Olade, (2004) studied the extent to which the nurses use evidenced- based practice guidelines in their practice. Over 26% of the participants reported that they had heard about nursing research in their associate degree programs. However, their accompanying comments revealed that they did not learn the research process in any specific course. Only 20.8% (14 out of 22) were BSN prepared and currently involved in utilization research at that time. The remaining 79% of the sample gave various reasons for not using research in their everyday practice, including isolation from nurse researchers and from nurses with experience in research utilization.

Ability to Understand and Believe Research

In 1991, Funk et al. published the findings of their study, Barriers to using Research Findings in Practice: The Clinician's Perspective. Questionnaires were mailed to 5,000 nurses selected randomly from the ANA membership roster. Included were nurses that worked full time from five educational strata (diploma, associate, bachelor's, master's and doctoral degrees). Of the 1,989 respondents, 924 who reported that their primary job functions were clinical formed the sample for the study. The questionnaire

included the BARRIERS SCALE to research utilization, developed by the research team of Funk, Champagne, Tornquist, and Wiese in 1987 (Funk et al., 1991). The purpose of the scale is to assess clinicians', administrators' and academicians' perceptions of barriers to the utilization of research findings in practice. The 28 item BARRIERS Scale requires respondents to rate the extent to which they think each item is a barrier to nurses' use of research to alter or enhance practice. Responses are circled on a 4 point scale (1= to no extent; 2= to a little extent; 3= to a moderate extent; and 4= to a great extent). Barriers were classified as being characteristics of the nurse, the setting, the research, or its presentation. There were eight items that addressed nurses' ability to understand research. These questions were; (a) statistical analyses are not understandable, (b) the nurse is isolated from knowledgeable colleagues with whom to discuss research, (c) implications for practice are not made clear, (d) the nurse does not feel capable of evaluating the quality of the research, (e) the research is not reported clearly and readably, (f) the nurse is uncertain whether to believe the results of the research, (g) the nurse does not see the value of research for practice, and (h) the conclusions drawn from the research are not justified. All of these items ranging from a 19.6-67.8% rating were perceived by the nurses in the study as moderate or great barriers.

Melnyk et al. (2004) conducted a descriptive survey with a convenience sample of 160 nurses who were attending EBP conferences or workshops. Although participant beliefs about the benefit of EBP were high, knowledge of EBP was found to be low. Significant relationships were found between the extent to which the nurses' practice is evidence-based and (1) nurses' knowledge of EBP, (2) nurses' beliefs about the benefits

of EBP, (3) having an EBP mentor, and (4) using the Cochrane Database of Systematic Reviews and the National Guideline Clearinghouse. The findings from Melnyk's study are presented in Table 1.

Table 1. Study Results (Melnyk et al., 2004).

Hypothesis	Results
Nurses' beliefs about importance of EBP in improving patient outcomes and the extent to which their practices are evidenced based were positively correlated.	r=.32, p<.001
Nurses beliefs about how much EBP improves clinical care and the extent to which their practices are evidenced based were positively correlated.	r=.40, p<.001
Nurses who reported having a greater knowledge of EBP also reported a greater extent of evidence based care.	r=.42, p<.0001
Having greater knowledge of EBP was positively related to current involvement in an EBP initiative.	r=.34, p=.001
There was a positive correlation between the length of time in practice as an advanced practice nurse and knowledge of EBP.	r=.37, p<.001
Nurses who reported higher use of Cochrane database of Systematic Reviews also reported extensive evidenced based practices.	r=.43, p<.003
Nurses who held stronger beliefs that research evidence improves patient outcomes perceived fewer barriers to EBP.	r=-.27, p<.05
Those nurses who reported having a mentor also reported higher levels of knowledge of EBP.	r= .28, p<.003
Nurses who reported having a mentor who could model EBP reported more extensive evidenced based practices.	r=.21, p<.05

A descriptive study conducted by Hommelstad and Ruland (2004) examined 159 Norwegian perioperative nurses' perceptions of barriers and facilitators to the use of research findings in nursing practice. The study findings indicate that the most important barriers to accessing and utilizing research are (a) research not being compiled in one place, (b) lack of time to read research articles and to implement research findings, (c)

uncooperative physicians, (d) insufficient resources, and (e) lack of access to information. The nurses had a positive attitude toward research, but they lacked the competence to assess research findings. Answers to the open ended questions in the study supported these findings.

There is very little literature that includes a rural nurses' ability to understand and believe research. However in a descriptive-correlational design study of 106 rural nurses' attitudes toward research conducted by Olade (2003), 65% of the participants in the study considered themselves curious about research and 20% considered themselves adequate in regard to research. In 2004, Olade used a questionnaire containing open ended questions focusing on research utilization among rural nurses and concluded that of these participants, 20.8% were involved in research utilization. Some comments of the participants surveyed indicated that they were not sure that nurses do research; others stated that it is physicians who conduct the research that guides nursing practice. Nurses with a higher education including RNs with a non-nursing master's degree displayed the most favorable attitudes regarding research utilization (mean attitudinal score of 79.3 out of 100) (Olade, 2003).

The characteristics of research communication need to be examined by nurse researchers and research journals editors (Funk et al., 1991). Research reports are commonly full of research jargon intended for other researchers, not clinicians, and emphasize the reliability and validity of measurements rather than what was actually measured. Research journal articles focus on the statistical tests performed rather than the meaning of the findings(Funk et al., 1991), and they rarely indicate what information

may be applicable to practice, even when supporting research has been published (Bohannon & LeVeau, 1986). Nurses who have no background in research, or who have educational degrees below a baccalaureate level may not understand the results and have difficulty implementing research findings into practice.

Number of Years of Experience and Affect of Nurses' Attitudes & Beliefs about Research

In a study conducted in an urban hospital in 2007 by Smirnoff et al. nurses employed by the hospital for 3-10 years (there was no n reported here for this group but the total sample size for the study was 470) had a significantly more positive attitude as compared with other groups of nurses ($F(3) = 4.61$, $p = .003$). Also notable was a subset of the population surveyed (8.9% of respondents) that agreed strongly with the survey statement "I have identified a problem that merits future research". This group in the sample was composed of staff nurses (57%) who are highly experienced (40% with > 20 years of experience). In Olade's (2003) study which examined rural nurses' attitudes and factors affecting research utilization, years of experience in nursing (correlation Coefficient= .10, p=.29) had no statistically significant relationship with the nurses' overall attitude toward research.

The Impact that Role Plays on Attitudes and Beliefs towards Research

Eastabrooks et al. (2007) conducted a study to determine independent factors that predict research utilization among nurses and the issue of authority expressed as the

degree to which units determined their own policies and procedures. They found issue of authority to be an emerging factor of importance to research utilization. Pravikoff et al. (2005) surveyed 987 nurses in order to build on knowledge regarding research addressing the readiness for evidenced-based practice of RNs in various work settings. Clinical nurses (n=760) reported less (a) use of bibliographic databases,(b) less access to resources,(c) familiarity with evidenced based practice, and (d) success in using electronic resources than did the total sample which included nurse administrators and nurse educators.

In Olade's (2003) study which examined 106 rural nurses' attitudes and factors affecting research utilization, practice setting had no statistically significant relationship with the nurses' overall attitude toward research (p= 0.11) but position was found to be highly related to the nurses' attitudes toward research (p =0.01). The diploma nurses (n=8), BSN students (n=7), and nurses with non-nursing master's degrees (n=3) desired research utilization for evidenced based practice without exception. The nurses who had Licensed Vocational Nursing (LVN) (n=18) or Associate Degree of Nursing (ADN) (n=30) levels of education indicated negative feedback in regards to desire for research utilization.

The studies in this section support the idea that the more educated a nurse is, the more likely that nurse is to have a favorable attitude towards research (Kenny et al., 2003; Olade, 2004; Pravikoff et al.; Aiken et al., 2003). The ANA (1998) reported that nurses who did not receive a university level education were not required to have research courses in their curriculum even though these were the nurses who make up the

majority of all hospital nurses given the positive relationship between baccalaureate education and research utilization (Pravikoff et al, 2005; Olade, 2003) and baccalaureate education and positive health outcomes (Aiken et al, 2003) one would expect the ANA to support the AACN recommendation (2000) that a BSN degree be required for entry level practice for all US RNs.

CHAPTER 3

METHODOLOGY

Introduction

This study was a secondary analysis of data collected by Luparell, Winters, Lee, O'Lynn, Shreffler-Grant, and Hendrickx, as part of their study entitled Rural Nurses' Access to and use of Research in Practice (2006). A descriptive, cross-sectional survey design was used in the parent study to address the following research questions: To what extent are research findings available to rural nurses? What resources do rural nurses use to obtain research findings? To what extent do rural nurses find research relevant to their practice? How do rural nurses use research findings in their practice? What strategies would improve accessibility of research/information to rural nurses?

Sample

The parent study sample consisted of nurses practicing in rural settings in Montana, Oregon, and South Dakota, selected from mailing lists of all registered nurses obtained from the Boards of Nursing in each state. The lists were separated into rural and non-rural areas based on each nurse's county of residence using the Economic Research Service (ERS) of the U.S. Department of Agriculture (Rural-Urban Continuum Codes #6-9) http://www.ers.U.S.da.gov/Briefing/Rurality/RuralUrbCon/ (See Table 2). From the list of nurses residing in rural counties, 800 were selected at random: 300 from Montana, 300 from Oregon, and 200 from South Dakota.

Questionnaires returned with incorrect address information and from nurses who lived in rural settings but worked in urban settings were excluded from the data analysis. There were 263 surveys returned representing a 35.3% return rate. Overall response rates were similar for the three states. After the removal of respondents who declined to participate in the survey or who commuted to urban facilities for work, 224 surveys were available for analysis.

Table 2. Economic Research Service Continuum Codes 6-9.

ERS rural-urban Continuum Code #6	Urban population of 2,500 to 19,999 adjacent to a metro area
ERS rural-urban Continuum Code #7	Urban population of 2,500 to 19,999 not adjacent to a metro area
ERS rural-urban Continuum Code #8	Completely rural or less than 2,500 urban population, adjacent to a metro area
ERS rural-urban Continuum Code #9	Completely rural or less than 2,500 urban population, not adjacent to a metro area

Source: U.S. Department of Agriculture.

Instrument

Data were collected for the parent study using a nine page, 42 question questionnaire adapted from surveys created by other researchers (Eastabrooks, 1996; Funk, Tornquist, & Champagne, 1995; McKenna, Ashton, & Keeney, 2004) and modified for an American sample based on a pilot study of 52 nurses conducted in the state of Montana (Winters et al.,2006). The final questionnaire contained questions to assess six areas of interest: (a) availability of resources, (b) sources of information, (c) access and use of the Internet, (d) use of research findings, (e) attitudes toward research based practice, and (f) demographics. Most of the questions were structured to require a yes/no response and the respondents were also given the opportunity to provide

comments contributing to qualitative data. Reliability of individual items ranged from a Chronbach's alpha of 0.643 to 0.863. In order to decrease any potential confusion, the study tool defined research utilization as the use of any kind of research findings, in any kind of way, in any aspect of work as a health care practitioner. The participants were instructed not to include knowledge that was learned in their basic nursing education as research.

Data Collection

In the parent study, the questionnaire, cover letter including a description of the study and processes to maintain anonymity, and a stamped return envelope were mailed to each of the 800 nurses. Respondents returned completed surveys to the research team; non-responders were sent a reminder card in the mail three weeks after the initial mailing.

Data for the study reported here were obtained with permission of the Principle Investigator (PI) of the parent study. Demographic information and responses to questions 22, 27, 28, 30, 35, and 39 from the questionnaire used in the parent study were examined to answer the research questions for this study (See Table 3).

Table 3. Research Questions and Related Questionnaire Items.

Research Questions	Parent survey variables that relate to the research questions
1. Do rural Nurses find research easy to understand?	Q22 a, b & c. a. I feel confident in my ability to evaluate the quality of research papers b. I find that research articles are not easily understood c. I believe that I should take a course to help me understand research effectively.
2. Do rural nurses believe the results of the research that they read?	Q22 d & e. d. I believe the results of the research that I read. e. I would feel more confident if there was an individual experienced in research to supply me with relevant information.
3. Does number of years experience as a nurse affect rural nurses' attitudes and beliefs about research?	Q38: Total years of practice as a nurse? Q39 Total years of practice in a rural setting?
4. Does level of education influence rural nurses attitudes and beliefs toward research?	Q27 What is your basic nursing education? Q28 Year of graduation from basic nursing program Q29 What is your highest educational achievement? Q30 Year of graduation from highest degree program
5. Does the size of facility that a rural nurse works in affect attitudes and beliefs toward research?	Q35 What is your current, or most recent, practice setting: Q36 If applicable, number of beds in your facility:
6. Does the role of a rural nurse within their facility affect attitudes and beliefs towards research?	Q37 What is your primary position?

Source: Luparell et al., 2006.

Data Analysis

Data analyzed for this study included demographic information and responses to questions 22, 27, 28, 30, 35, and 39 from the questionnaire. Data were displayed using the Statistical Package for Social Sciences (SPSS, version 16, Graduate Pack) and analyzed using descriptive statistics to determine item frequencies and measures of central tendency. Tests were conducted e.g. comparisons between naturally occurring groups to further explore the data. Tables and graphs were designed to visually aid in the interpretation of the survey results.

CHAPTER 4

RESULTS

Introduction

The analysis of this secondary data set of 224 surveys was conducted to guide the evaluation of the six proposed research questions. Specifically, the data analysis was designed to investigate whether or not rural nurses: (a) find research easy to understand, (b) believe the results of the research that they read, and (c) if the number of years of experience as a nurse, (d) level of education, (e) size of facility that they work in, (d) and role within their facility, affects their attitudes and beliefs about research.

Sample Demographics

Of the 224 respondents, the majority of the respondents were female (92.3%; n=203), forty one to sixty years of age (62.7%; n=136) and lived in Montana (45.2%; n=99). (See Table 4).

The majority of nurses' basic educational preparation was at the baccalaureate level (48.8%; n=102) and the decade that the largest portion of the respondents who had completed this degree was the 1990s (31.3%; n=68). The BSN was also the highest educational achievement for most of the nurses (48.2%; n=105) and the decade that the largest portion of these respondents completed their degree was again in the 1990s (35.4%; n=74). (See Table 5).

Table 4.Gender, Age and Residence.

Response		Number of Cases	% of Total Sample
Gender (n=220)*	Female	203	92.3%
	Male	17	7.7%
Age (n=217)*	<30	17	7.8%
	31-40	43	19.8%
	41-50	71	32.7%
	51-60	65	30.0%
	>60	21	9.7%
State of Residence (n=219)*	Iowa	2	0.9%
	Montana	99	45.2%
	Nebraska	1	0.5%
	Oregon	78	35.6%
	South Dakota	39	17.8%

*n does not equal 224 because some respondents did not answer this question.

Table 5.Level of Basic Education, Year of Graduation from Basic Education, Level of Highest Educational Preparation and Year of Graduation from Highest Education.

Response		Number of Cases	% of Total Sample
Level of Basic Educational Preparation (n=209)*	Diploma	27	12.9%
	Associate Degree	80	38.3%
	Baccalaureate Degree	102	48.8%
Year of Graduation from Basic Education (n=217)*	50s	5	2.3%
	60s	20	9.2%
	70s	44	20.3%
	80s	54	24.9%
	90s	68	31.3%
	00s	26	12.0%
Level of Highest Educational Preparation (n=224)	Diploma	21	9.6%
	Associate Degree	66	30.3%
	Baccalaureate Degree	105	48.2%
	Master's Degree	26	11.9%
Year of Graduation from Highest Education (n=209)*	50s	3	1.4%
	60s	10	4.8%
	70s	31	14.8%
	80s	52	24.9%
	90s	74	35.4%
	00s	39	18.7%

*n does not equal 224 because some respondents did not answer this question.

The three concentrations of states of employment were Montana (45.4%; n=98), Oregon (33.8%; n=73) and South Dakota (18.1%; n=39). Most of the nurses were currently employed in healthcare (94.1%; n=207) and most worked full-time (65.5%; n=135). The most common place for a nurse to work was in a hospital (46.4%; n=84) and the most common position was that of a staff nurse (55.6%; n=105). (See Table 6).

Table 6.State of Employment, Current Employment in Healthcare, Employment Status, Employment Setting and Primary Position.

Response		**Number of Cases**	**% of Total Sample**
State Where Employed (n=216)*	Minnesota	1	0.5%
	South Dakota	39	18.1%
	Montana	98	45.4%
	Idaho	3	1.4%
	California	1	0.5%
	Oregon	73	33.8%
	Iowa	1	0.5%
Currently Employed in Healthcare (n=220)*	Yes	207	94.1%
	No	13	5.9%
Employment Status (n=206)*	Full-Time	135	65.5%
	Part-Time	58	28.2%
	Casual	13	6.3%
Employment Setting (n=181)*	Hospital	84	46.4%
	Critical Access Hospital	33	18.2%
	Private Practice	4	2.2%
	Community/Public Health	20	11.0%
	Home Health	8	4.4%
	School of Nursing	2	1.1%
	Health Clinic	14	7.7%
	Nursing Home	16	8.8%

Table 7.State of Employment, Current Employment in Healthcare, Employment Status, Employment Setting and Primary Position - continued.

Response		Number of Cases	% of Total Sample
Primary Position (n=189)*	Staff Nurse	105	55.6%
	Charge Nurse	34	18.0%
	Clinical Nurse Specialist	3	1.6%
	Nurse Practitioner	11	5.8%
	Nurse Midwife	3	1.6%
	Manager	23	12.2%
	Administration	5	2.6%
	Education	5	2.6%

*n does not equal 224 because some respondents did not answer this question.

Do Rural Nurses Find Research Easy to Understand?

A frequency table was run for question 22a "I feel confident in my ability to evaluate the quality of research papers." Just under three percent (2.7%; n=6) of nurses strongly disagreed with the statement, 16.1 percent (n=36) disagreed, 30.4 percent (n=68) were unsure, 43.3 percent (n=97) agreed, 4.9 percent (n=11) strongly agreed and 2.7 percent (n=6) failed to answer the question. (See Figure 1).

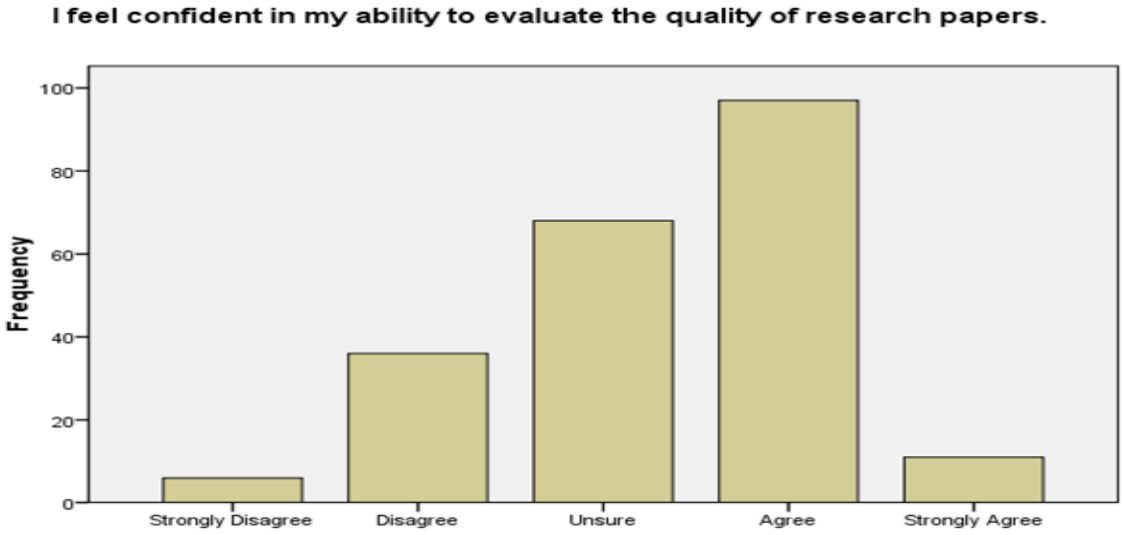

Figure 1. Distribution of responses for question 22a.

A frequency table was run for question 22b “I find that research articles are not easily understood.” Just over two percent (2.2; n=5) of nurses strongly disagreed, 31.7 percent (n=71) disagreed, 14.7 percent (n=33) were unsure, 42.4 percent (n=95) agreed, 6.7 percent (n=15) strongly agreed and 2.2 percent (n=5) failed to answer the question. (See Figure 2).

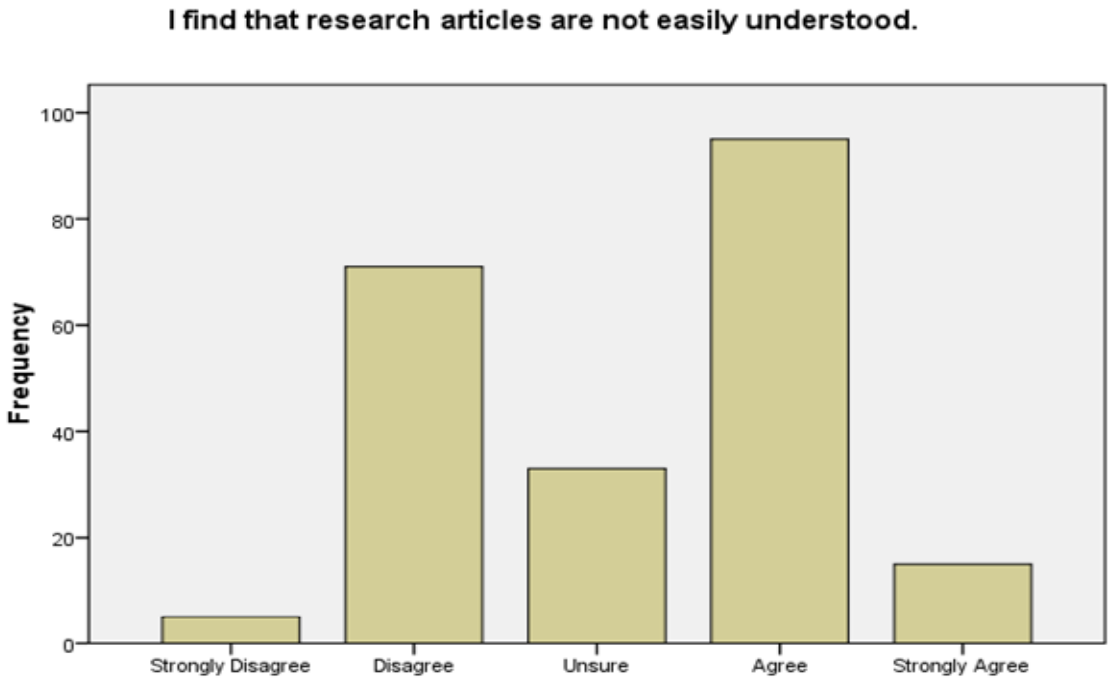

Figure 2. Distribution of responses to question 22b.

A frequency table was run for question 22c “I believe that I should take a course to help me use research effectively.” Nearly 7% (n=15) of nurses strongly disagreed, 27.7 percent (n=62) disagreed, 27.7 percent (n=62) were unsure, 28.6 percent (n=64) agreed, 7.1 percent (n=16) strongly agreed and 2.2 percent (n=5) failed to answer the question. (See Figure 3).

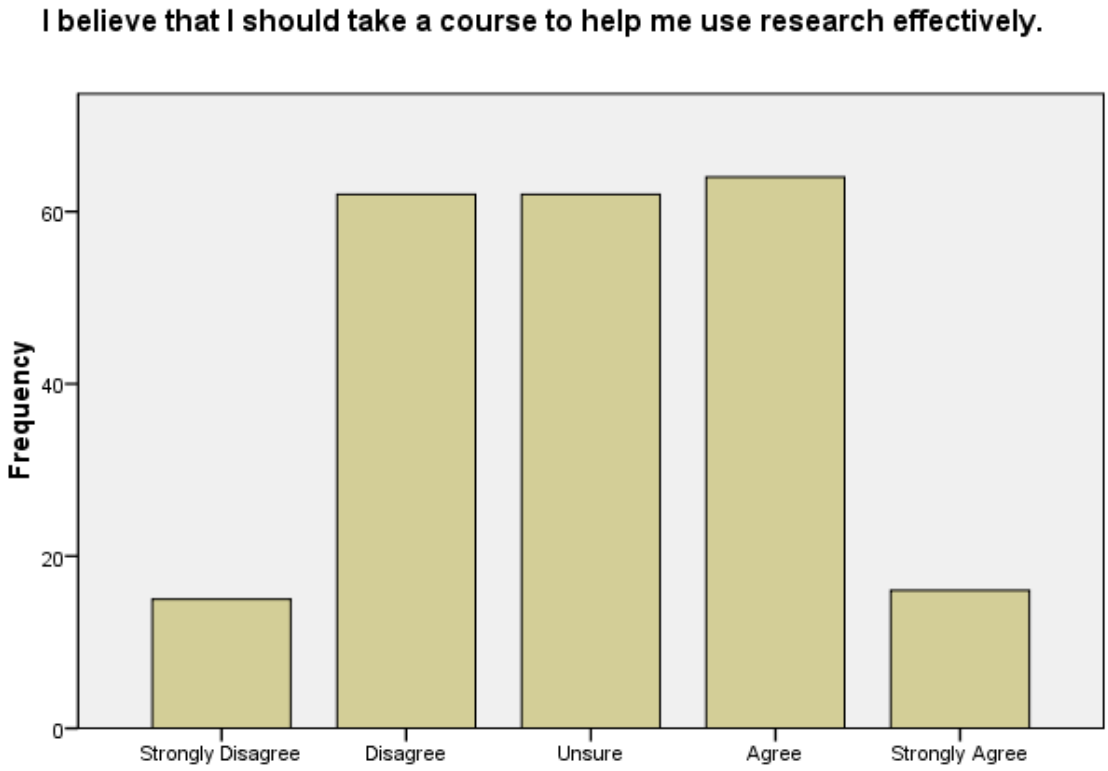

Figure 3. Distribution of responses to question 22c.

Do Rural Nurses Believe the Results of the Research That They Read?

A frequency table was run for question 22d "I believe the results of the research that I read." Less than one percent (0.4%; n=1) of nurses strongly disagreed, 12.5 percent (n=28) disagreed, 58.0 percent (n=130) were unsure, 24.1 percent (n=54) agreed, 0.9 percent (n=2) strongly agreed and 4.0 percent (n=9) failed to answer the question. (See Figure 4).

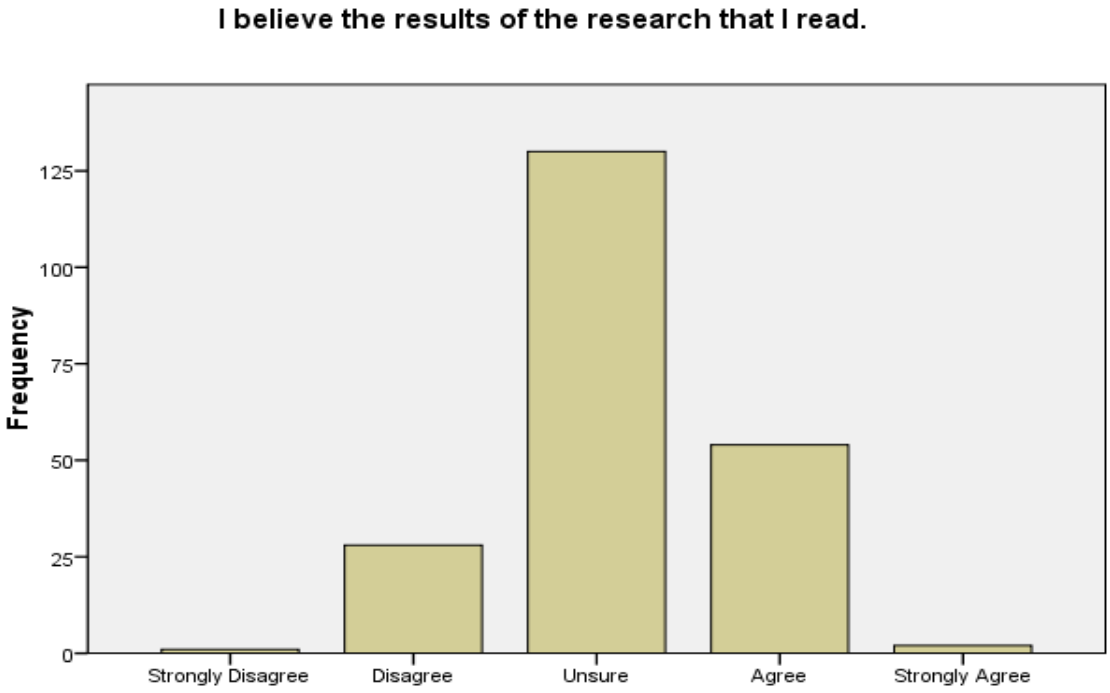

Figure 4. Distribution of responses to question 22d.

A frequency table was run for question 22e “I would feel more confident if there was an individual experienced in research to supply me with relevant information.” Less than 2 percent (1.8%; n=4) of nurses strongly disagreed, 14.3 percent (n=32) disagreed, 18.3 percent (n=41) were unsure, 50.9 percent (n=114) agreed, 12.1 percent (n=27) strongly agreed and 2.7 percent (n=6) failed to answer the question. (See Figure 5).

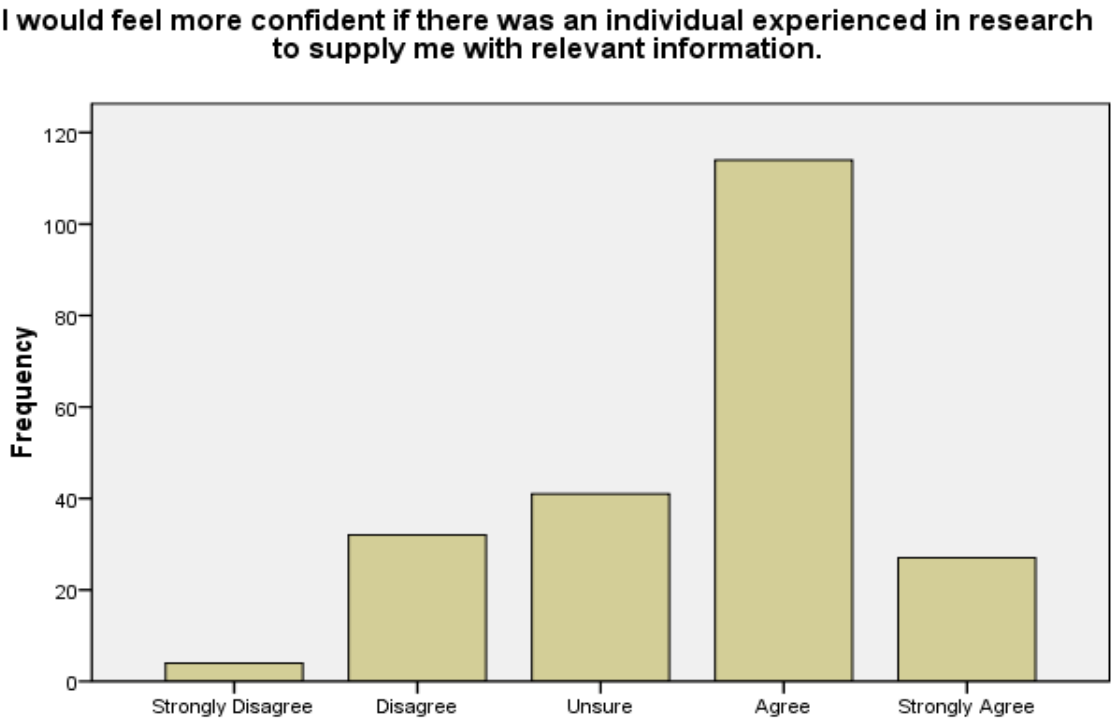

Figure 5.Distribution of responses question 22e.

Does Number of Years Experience as a Nurse Affect Rural Nurses' Attitudes and Beliefs about Research?

In order to assess the influence of years of experience on rural nurses' overall attitudes towards research, it was necessary to generate a composite score for nurses' attitudes. The composite attitude score was created using the attitudinal questions found in Section E of the parent study: Attitudes Toward Research-Based Practice. The attitudinal questions consisted of a five point Likert-scale ranging from strongly disagree to strongly agree. The score for each question was adjusted to control for reverse scoring and then summed to reach a composite score. The composite scores were then divided into quartiles and assigned the labels worst attitudes for scores in the first quartile, below

average attitudes for scores in the second quartile, above average attitudes for scores in the third quartile and best attitudes for scores in the fourth quartile. The new composite attitude score variable was then analyzed using the independent variables of total years of practice as a nurse and total years of practice in a rural setting.

The tenure data from the parent study was captured at the nominal level, but for the purposes of the analysis in this study it was necessary to create tenure cohorts. The two sets of groups were then cross-tabulated to generate frequency tables (see Tables 7 and 8).

The effects on the composite attitude scores were first measured for years of experience as a nurse. The largest portion of nurses with 1 to 5 years of experience and 5 to 10 years of experience (50.0%; n=6 and 35.5%; n=11 respectively) were in the "above average" attitude group. While the largest portion of nurses with 10 to 20 years of experience and more than 20 years of experience were in the "best" attitude group (35.1%; n=27 & 29.1%; n=30 respectively). It is interesting to note that the second largest segment of nurses with greater than 20 years of experience (28.2%; n=29) were in the "worst" attitude group. See Table 7.

Table 8. Cross-tabulation of Years of Experience as a Nurse and Nurses' Composite Attitude Score.

	Tenure Cohorts					
	Missing n=1	**1 to 5 years n=12**	**5 to 10 years n=31**	**10 to 20 years n=77**	**More than 20 years n=103**	**Total n=224**
Worst Attitudes	100.0%	0.0%	22.6%	19.5%	28.2%	23.2%
Below Average Attitudes	0.0%	25.0%	22.6%	23.4%	23.3%	23.2%
Above Average Attitudes	0.0%	50.0%	35.5%	22.1%	19.4%	24.1%
Best Attitudes	0.0%	25.0%	19.4%	35.1%	29.1%	29.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The effects on the composite attitude scores were then measured for years of experience as a nurse in a rural setting. The largest portion of nurses with 1 to 5 years of experience in a rural setting and 5 to 10 years of experience in a rural setting (44.4%; n=4 and 32.0%; n=11 respectively) were in the "above average" attitude group. The largest portion of nurses with 10 to 20 years of experience in a rural setting were in the "best" attitude group (32.1%; n=25). Nurses with greater than 20 years of experience in a rural setting were equally divided between the "worst" attitude group and the "best" attitude group (29%; n=18 in each group). (See Table 8).

Table 9. Cross-tabulation of Years of Experience as a Rural Nurse and Nurses' Composite Attitude Score.

	Rural Tenure Cohorts					
	Missing	**1 to 5 years**	**5 to 10 years**	**10 to 20 years**	**More than 20 years**	**Total**
Worst Attitudes	44.4%	8.0%	20.0%	23.1%	29.0%	23.2%
Below Average Attitudes	22.2%	12.0%	26.0%	25.6%	22.6%	23.2%
Above Average Attitudes	0.0%	44.0%	32.0%	19.2%	19.4%	24.1%
Best Attitudes	33.3%	36.0%	22.0%	32.1%	29.0%	29.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Does Level of Education Influence Rural Attitudes and Beliefs toward Research?

In order to assess the influence of level of education on rural nurses' overall attitudes towards research, the previously described composite attitude score variable was cross tabulated with the level of education variable found in question 29, section F of the parent study.

The largest portion of nurses with a diploma were in the “below average” attitude group (33.3%; n=7). Nurses with an associate’s degree were evenly divided between the “worst” attitude group and the “best” attitude group (30.3%; n=20 in each group). The largest portion of nurses with a baccalaureate degree were in the “below average” attitude group (29.5%; n=31) and the largest segment of nurses with a master's degree (38.5%; n=10) were in the “best” attitude group. See Table 9.

Table 10.Cross-tabulation of Nurses’ Highest Education Achievement and Nurses’ Composite Attitude Score.

	What is your highest educational achievement?				
	Diploma n=21	**Associate degree n=66**	**Baccalaureate degree n=105**	**Master's degree n=26**	**Total n=218***
Worst Attitudes	19.0%	30.3%	19.0%	15.4%	22.0%
Below Average Attitudes	33.3%	12.1%	29.5%	19.2%	23.4%
Above Average Attitudes	19.0%	27.3%	23.8%	26.9%	24.8%
Best Attitudes	28.6%	30.3%	27.6%	38.5%	29.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

*n does not equal 224 because some respondents did not answer this question.

Does the Size of Facility that a Rural Nurse Works in Affect Attitudes and Beliefs towards Research?

In order to assess the influence of the size of facility on rural nurses’ overall attitudes towards research, the previously described composite attitude score variable was cross tabulated with the size of facility variable found in question 36, section F of the parent study.

The largest portion of nurses practicing in a hospital were in the “best” attitude group (36.9%; n=31). The largest segment of nurses practicing in Critical Access Hospitals (36.4%; n=12) were in the “worst” attitude group. The largest segment of

nurses practicing in a private practice (50.0%; n=2) were in the “above average” attitude group. The largest segment of nurses practicing in Public/Community Health (50.0%; n=10) were in the “above average” attitude group. The largest segment of nurses practicing in Home Health (37.5%; n=3) were in the “below average” attitude group. All of the nurses practicing in the school of nursing setting (100%; n=2) were in the “above average” attitude group. The largest segment of nurses practicing in health clinics (42.9%; n=6) were in the “below average” attitude group. The largest segment of nurses practicing in Nursing Homes (37.5%; n=6) were in the “below average” attitude group. (See Table 10).

Table 11. Cross-tabulation of Nurses' Practice Setting and Nurses' Composite Attitude Score.

	What is your current, or most recent, practice setting:								
	Hospital n=84	**Critical access hospital n=33**	**Private practice n=4**	**Public community health n=20**	**Home health n=8**	**School of nursing n=2**	**Health clinic n=14**	**Nursing home n=16**	**Total n=181**
Worst Attitudes	27.4%	15.2%	25.0%	25.0%	12.5%	0.0%	21.4%	12.5%	22.1%
Below Average Attitudes	11.9%	36.4%	0.0%	15.0%	37.5%	0.0%	42.9%	37.5%	22.1%
Above Average Attitudes	23.8%	21.2%	50.0%	10.0%	25.0%	100.0%	28.6%	31.3%	24.3%
Best Attitudes	36.9%	27.3%	25.0%	50.0%	25.0%	0.0%	7.1%	18.8%	31.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Does the Role of a Rural Nurse within their Facility Affect Attitudes and Beliefs Towards Research?

In order to assess the influence of the nurse's role within their facility on rural nurses' overall attitudes towards research, the previously described composite attitude score variable was cross tabulated with the size of facility variable found in question 37, section F of the parent study. The largest portion of nurses functioning as staff nurses were in the "best" attitude group (32.0%; n=34). The largest segment of nurses functioning as charge nurses (38.0%; n=13) were in the "worst" attitude group. The largest segment of nurses functioning as clinical nurse specialists (67.0%; n=2) were in the "below average" attitude group. The largest segment of nurses functioning as nurse practitioners (55.0%; n=6) were in the "best" attitude group. All of the nurses functioning as nurse midwives (100.0%; n=3) were in the "above average" attitude group. The largest group of nurses functioning as managers or supervisors (35.0%; n=8) were in the "best" attitude group. The largest segment of nurses functioning as administrators or executives (40.0%; n=2) were in the "best" attitude group. The largest segment of nurses functioning as educators or instructors (60.0%; n=3) were in the "above average" attitude group. (See Table 11).

Table 12. Cross-tabulation of Nurses' Primary Position and Nurses' Composite Attitude Store.

	What is your primary position?								
	Staff nurse n=105	**Charge nurse n=34**	**Clinical nurse specialist n=3**	**Nurse practitioner n=11**	**Nurse midwife n=3**	**Manager/ supervisor n=23**	**Administrator/ executive n=5**	**Educator/ instructor n=5**	**Total n=189**
Worst Attitudes	22%	38%	0%	18%	0%	22%	20%	0%	23%
Below Average Attitudes	17%	32%	67%	18%	0%	22%	20%	40%	22%
Above Average Attitudes	29%	15%	0%	9%	100%	22%	20%	60%	25%
Best Attitudes	32%	15%	33%	55%	0%	35%	40%	0%	30%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

CHAPTER 5

DISCUSSION

Most respondents agreed with the statement “I feel confident in my ability to evaluate the quality of research papers.” Information literacy is the ability to decide that information is needed about a subject and to find credible and understandable information about the subject so that the information can be used to effectively solve a problem or make a decision based on the information obtained (Tanner, Pierce, & Pravikoff, 2004). The accuracy of information literacy depends on the abilities of the user of the information in retrieving information through sources such as libraries and electronic databases. A nurse needs to know what information is considered credible e.g., *The Ladies Home Journal* as compared to *The Journal of the American Academy of Nurse Practitioners*. Most respondents in this study were baccalaureate prepared nurses and baccalaureate nursing programs include research courses as a requirement for graduation from such programs. And while the majority of respondents agreed that they could evaluate the quality of research, forty two percent of the respondents agreed with the statement “I find research articles are not easily understood”. These answers may indicate that the respondents feel comfortable with identifying credible research but at the same time they cannot always understand the content of research articles, that research articles are not written clearly, or not at staff nurses’ level of understanding. Tanner et al’s 2004 study identified the top three personal barriers to research utilization and practice as (a) lack of value for research in practice, (b) a lack of understanding of the

organization or structure of electronic databases, and (c) difficulty accessing research articles. If nurses have difficulties with knowing how to access research, they may very likely have difficulty in the ability to choose research that is credible.

In response to the statement "I believe that I should take a course to help me use research effectively," there were nearly equal numbers of nurses who believed as disbelieved that a course could help them use research effectively. This may be explained by the fact that out of the 209 respondents to the question "what is your basic educational preparation," more than one-half (60.1%) answered that they had at least a baccalaureate degree, 38.3% answered associate degree and 12.9% answered diploma. Nearly half of the respondents were baccalaureate prepared and were likely to have at least one course in research included in their curriculum whereas the two and three year associate and diploma nursing programs do not include research courses. The baccalaureate prepared nurses may value continuing education more than the associate or diploma nurses (Goode et al., 2001). The 40% of baccalaureate nurses who answered that they were unsure about taking a research course to help them use research effectively, may have answered that way because their education was long enough ago that research was not included in their curriculum, or the research course or course(s) included in their curriculum was not adequate in helping them to understand research effectively, or they believe the course(s) were sufficient and questioned the need for further instruction.

Fifty-eight percent of the respondents to the survey were unsure of the statement "I believe the results of the research that I read." This may be yet more evidence that

nurses often times do not understand what they read, even if the research is found to be credible. This may suggest that nurses could benefit from a course that would help them to better understand research. It could also be that much research that is available does not refer to rural patients or rural nursing practice (Olade, 2004).

Most respondents indicated that they would like a research experienced person to supply them with information when responding to the statement "I would feel more confident if there was an individual experienced in research to supply me with relevant information." One hundred and fourteen respondents (51%) agreed with this statement and 27 (12%) strongly agreed. Olade (2003) reported that only 20% of the nurses surveyed considered themselves adequate in regard to research and Kosteniuk et al. (2006) reported that survey respondents ranked nursing colleagues as the information source most used. The finding that nurses use a colleague as a primary source of information (Olade, 2003; Kosteniuk, 2006; Pravikoff, et al., 2005) is well situated in the rural and non-rural literature. Nurses who practice in rural settings are more likely to have fewer healthcare resources, inequitable access to education and information technology than their urban counterparts (Bushy, 2002). Isolation and distance are barriers that are a constant factor in rural nursing (Long & Weinert, 1989) and asking a co-worker for their opinion on how to perform a task may be the most efficient way to complete the task. The concept of outsider/insider is also an important factor to consider when addressing rural nursing. Nurses practicing and living in rural settings have to rely on themselves and each other for many things and making do and getting by with what you have is a way of life (Sharff, 2006). Rural nurses also feel that time is a barrier to

accessing research (Olade, 2003; Winters et al., 2007). This could be related to the variety of roles being fulfilled during a typical work shift.

There are glaring inconsistencies in the results of this study as the nurses feel confident in their ability to evaluate the quality of research papers but do not find research articles easy to understand. Forty-three percent indicated they were confident in their ability to evaluate the quality of research papers but 28.6% responded that they should take a course to help them use research effectively, while 55.4% were either unsure or disagreed that they should take a course to help them use research effectively.

In assessing nurses' attitudes and beliefs about research based on years of experience, the nurses with the worst attitudes in this group were the nurses with more than 20 years of experience. The best attitudes when considering years of experience as a *rural* nurse were found in the nurses with 1-5 years of experience and the nurses with the worst attitudes had greater than 20 years of experience. A reason for the worst attitudes finding in answer to both of these questions, could be that nurses with greater than 20 years of experience may have not had any course or courses pertaining to research.

Research is frequently used to describe information gathering about any given topic; it could relate to a personal purchase or to very specific clinical processes or issues. In reality, conducting research means (a) developing a research question, (b) planning and implementing specific data collection, (c) analyzing and (d) interpreting the results and drawing conclusions (Polit & Beck, 2004). Whether applying these conclusions constitutes evidenced based practice or not depends on the credibility of the research (Ulsenheimer, Baily, McCullough, Thornton & Warden, 1997). There has been a push

for evidenced-based nursing for decades. Gortner et al. (as cited in MiJa, 2008), proposed implementation of research into nursing practice in 1976. In 1977, Roper (as cited in MiJa, 2008) stated that nursing practice was relying on the traditional ways of doing things that was mostly opinion- based and did not follow a scientific framework. Within this study there are nurses with differing levels of experience. Those with more experience may have less favorable attitudes towards research because research was not part of their nursing curriculum. Nurses working in rural areas also may not receive the most up-to-date evidence or research as soon as their urban counterparts given fiscal and human constraints.

When measuring attitudes and beliefs, those nurses with diploma, associate, and baccalaureate degrees and were found to have similar attitudes (the worst) and nurses who were master's prepared had the best attitudes. This is most likely due to the fact that most diploma and associate degree programs have little or no research education included in their curriculum and, although baccalaureate level programs do require at least one research course, it may not be enough for a nurse to develop the research skills required to understand and incorporate research into practice. Master's level education includes research courses and often times involvement in research itself.

When comparing attitudes of nurses who worked in different practice settings, hospital nurses were found to have the worst attitudes while public/community health nurses were found to have the best attitudes. Not all hospital nurses have a minimum of a baccalaureate degree; but a baccalaureate degree is recommended for employment in the

professional field of public health nursing (Association of State and Territorial Directors of Nursing, 2003).

In terms of primary position and nurses composite attitude scores, charge nurses were found to have the worst attitudes and nurse practitioners were found to have the best attitudes. Again, not all charge nurses are required to have a bachelor's degree, but all nurse practitioners have a minimum of a bachelor's degree and currently a master's degree is required for all newly licensed Advanced Practice Registered Nurses (APRNs) (AACN, 1998). From the literature available, it is apparent that nurses with positive attitudes and beliefs that EBP can and will enhance their practice are more likely to utilize research and incorporate it into practice than nurses whose attitudes and beliefs towards EBP are negative (Rizzuto, Bostrom, Suter and Chenitz, 1994). Furthermore, positive attitudes toward research have been found to directly relate to educational levels, and participation in research (Smirnoff et al). Numerous authors writing about EBP clearly support the premise that nurses need to be knowledgeable about how to access and use research (Taylor, et al; Pravikoff, 2005).

There are several factors that affect rural nurses' attitudes and beliefs towards evidenced based practice. Rural nurses have acknowledged that the professional isolation that is common in rural areas affects their access to other knowledgeable colleagues even though colleagues were listed as one of the primary sources of information (Winters et al., 2007). Although the Internet has been identified as a primary source of information for rural nurses, studies in which rural nurses have indicated that their computer availability is limited because of computer location, limited time to search for

information, and lack of overall general computer knowledge (Winters et al., 2007, Olade, 2003). In Winters and colleagues' study, research barriers to research use included lack of (a) knowledge regarding research methods, (b) time at work or home to research or gather information, (c) computer and Internet access in work areas, (d) computer knowledge. Decreasing financial assistance for continuing education from employers may also affect nurses' comfort with research, understanding of the importance of the use of evidence for practice, or knowledge related to access and use of research findings. These factors may account for the attitudes of the nurses in this study.

Study Limitations

The statistics used for this study were descriptive only. A study using the same data but more sophisticated statistics such as chi-square test of significance may be more meaningful. The sample size used for this secondary data analysis is fairly small; therefore, the study findings cannot be generalized to all rural nurses. Because this was a secondary data analysis, no further information was obtained from participants and there was no control over the sample or how the original data were collected. More information could be gleaned from studying additional groups and cohorts. The nurses included in this study were women living in the western US; with the preponderance residing in Montana; this geographical location could impact the results because of differing socioeconomic issues, cultural differences, and varying distances to larger cities.

Implications

Practice

Nurses working in environments with a more positive culture, strong leadership, and lower rates of patient and staff adverse events, report significantly more research utilization than nurses working in less positive environments (i.e., work environments lacking in positive culture, weak leadership and higher rates of patient and staff adverse events) (Cummings, Estabrooks, Midodzi, Wallin & Hayduk). The evidenced-based movement has placed an emphasis on applying research findings into clinical practice. This makes it necessary for colleges of nursing to adapt their research courses so that nursing graduates are better able to understand research and incorporate the findings into practice.

In terms of years of experience, in this study, it was found that nurses with 1-5 years had the best attitudes towards research and nurses with more than 20 years of nursing experience had the worst attitudes. It could be that the EBP movement has positively influenced those nurses with 1-5 years of experience. Nurses working in hospitals had the worst attitudes towards research and public/community health nurses have the best attitudes. Nurses working in the role of charge nurse had the worst attitudes and the nurses whose role was nurse practitioner had the best attitudes towards research. These findings suggest that nurses with a master's degree education that would have included research courses are more likely to view research as positive. Charge nurses working in rural settings may not have as much time (due to increased role diffusion) or as many resources (lack of professional journals, Internet and knowledgeable colleagues)

as their urban counterparts. The results of this study suggest that nurses working in the direct patient care roles such as staff nurse or charge nurse had the worst attitudes about research and those nurses whose roles were that of nurse practitioner, manager/supervisor, or executive had the best attitudes. The reasons for this could be many but it may be because the nurses working in the non- direct patient care roles have more access to technology, professional journals, and more time to utilize such resources. The results of this study support research findings from previous studies (Olade, 2003; Bushy, 2002; Kosteniuk et al., 2006) that access to technology, education, years of experience, and role are factors that affect rural nurses' attitudes and beliefs towards EBP. Because of rural nurses' lack of affiliation with medical and nursing schools, lack of availability of research departments, and lack of peer support in the area of research, nurses in rural areas are at a disadvantage over their urban nurse counterparts in ability to access and use research (Olade, 2003). Given that nurses constitute the largest group of health care providers and their care influences patient outcomes (Aiken et al., 2003), the pressure on the nursing profession to strengthen the importance of EBP for all registered nurses is crucial. Role modeling the use of evidence by nursing leaders has been shown to influence rural nurses' use of research (Winters et al., 2007). Hospital administrators and nursing leaders in rural and remote facilities must become proactive in encouraging the use of evidence, perhaps through practice policies and procedures, affiliation with larger institutions or universities, and by making access to evidence readily available to nursing staff through professional journal subscriptions, journal clubs and current technology resources.

Research

More research is needed that addresses rural nurses' attitudes and beliefs toward EPB. This study indicated that nurses are unsure if they need more education regarding research and that they are unsure of the results they read. It also indicated that rural nurses are more comfortable obtaining information from a colleague experienced in research. There was no distinction found between worst and best attitudes towards research when comparing the diploma, associate, and baccalaureate nurses but the study did indicate that nurses' with a master's level of education have a more positive attitude towards EBP.

The findings of this study add to the understanding of factors that influence rural nurses' attitudes and beliefs towards EBP but further research is needed in this area, to explore the role that education has in determining a rural nurses attitudes and beliefs towards EBP, specifically which kinds of and how many research courses are needed in a nursing curriculum in order for a nurse to be able to properly assess and critique research information. Nurses in this study with 1-5 years of rural experience had the best attitudes while those with greater than 20 years of rural nursing experience had the worst attitudes toward research. More studies are needed to explore the relationship between years of experience in rural nursing and attitudes towards research.

Education

It is important for rural nurses to understand the factors that contribute to their attitudes and beliefs towards EBP. The results of this study suggest that higher education is associated with a more positive attitude towards research evidenced by nurses with a

master's degree having the best attitudes towards research and nurses with diploma, associate, and baccalaureate degrees having the worst attitudes towards research. The results also suggest that although the nurses felt confident in their ability to evaluate the quality of research papers, they did not find research articles easy to understand and are unsure (58%, n=130) if they believe the results of the research that they read. Based on these results, it is important for nursing educators teaching in universities and continuing education courses alike, to include more education with respect to how to assess data for credibility and how to interpret research information.

Theory

Understanding the factors that influence rural nurses' practice contributes to our understanding of the uniqueness of rural nursing and to the development of RNT. Rural nursing is defined as "the provision of health care by professional nurses to persons living in sparsely populated areas" (Lee & Winters, 2006, p.4). Rural nursing is a specialized type of nursing practice in which nurses must have a broad base of knowledge and skills, (Lee & Winters, 2006; Scharff, 2006) necessitating the need for EBP. Findings from this study support the need for research that examines the level of educational preparation, length of rural and non-rural experiences, and nursing position (i.e. staff nurse and charge nurse) on the practice of rural nursing. Findings from such studies will improve our understanding of the third relational statement proposed in the RNT that the role of rural health care provider's includes a lack of anonymity and greater role diffusion than providers in more urban areas.

Conclusion

EBP is a mark of excellence of professional nursing practice and high quality patient care. When nurses base their clinical decisions on research, they build a stronger foundation for respect and cooperation from other healthcare professionals. The results from this study suggest that rural nurses do not find research articles easy to understand, at least half believe that a course would help them to use research more effectively, most are unsure if they believe the results of the research that they read, and most would feel more confident if there were an individual experienced in research to supply them with relevant information. Any nurse living and working in a rural setting may feel more negative than a nurse working in an urban setting towards research due to the barrier of isolation which includes limited access to technology and colleagues with research knowledge. Furthermore, the results of this study support the relationship between master's education and attitudes and beliefs about EBP. These findings are in line with recommendations from the Joint Commission (Elements of Performance NR.2.10. B) for Critical Access Hospitals and other hospitals related to educational factors to be considered when appointing the nurse executive. The element (EPs 2-6), “Whether the prospective nurse executive possesses the knowledge and skills associated with a master’s degree in nursing or a related field or another appropriate postgraduate degree, or has a written plan to obtain these qualifications” (Joint Commission Perspectives, 2006), if required of facilities may significantly impact rural nurses’ attitudes and beliefs about research and increase the amount of practice that is evidence-based.

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