

Barriers to Research Utilization Among Registered Nurses Working in a Community Hospital

By

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To the Faculty of Washing State University:

The members of the Committee appointed to examine the thesis of HEATHER DIANE SCHOONOVER find it satisfactory and recommend that it be accepted.

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Chair

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# Barriers to Research Utilization Among Registered Nurses Working in a Community Hospital

## Abstract

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Chair: Renee Hoeksel

At no time in the history of healthcare has the professional knowledge required to deliver safe, effective healthcare been so complex. Many researchers have explored the barriers to research utilization in practice, yet community hospitals have been largely omitted from these studies and the research-practice gap remains.

The aim of this study was to identify the barriers to research utilization among registered nurses practicing in a community hospital. A descriptive study design using the 29-item Barriers to Research Utilization Scale was utilized. The conceptual framework for this study was Rogers' diffusion of innovation. The survey was distributed to all registered nurses working in a community hospital in Washington State (n=372). A 21% response rate was achieved.

Greatest barriers to research utilization reported included characteristics of the organization, a lack of authority to change patient care procedures, lack of time to read research, and the lack of awareness of the research. Organizational strategies that influence the rate of adoption of innovations, leading to research utilization, are discussed. These include evidence-based practice rounds, the use of clinically appraised topics, and educational prescriptions in which individuals reflect on the process of evidence-based practice and determine where they currently have learning gaps.

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## Barriers to Research Utilization Among Registered Nurses Working in a Community Hospital

### *Introduction and Background*

At no time in the history of healthcare has the professional knowledge required to deliver quality healthcare been so complex. The Institute of Medicine defines quality health care as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Institute of Medicine [IOM], 2001, p. 232). One source of professional knowledge is randomized controlled trials. “Since the first contemporary randomized controlled trial was conducted more than 50 years ago, the number of trials conducted has grown to nearly 10,000 annually” (IOM, 2001, p. 2). Despite an increase in the availability of basic science and clinical research, many healthcare providers do not apply the available evidence (Brook, McGlynn, & Shekelle, 2000). This has led many organizations to push for the development of evidence-based practice (IOM, 2001; Agency for Healthcare Research and Quality [AHRQ], 2005; The Cochrane Collaboration, 2004; National Institutes of Health [NIH], 2005).

Evidence-based practice is described as the integration of individual clinical expertise with the best available external expertise. Clinical expertise refers to the skills the clinician develops over time through clinical experience and practice. External expertise refers to clinically relevant research, particularly patient centered research (Sackett, Rosenburg, Gray, Haynes, & Richardson, 1996). While clinical expertise is developed over time, external expertise is not. Research utilization is fundamental to the development of external expertise and evidence-based practice. Research utilization is the use of research findings to support clinical decision-making. As defined by Scott-Findlay and Golden-Biddle (2005):



It is a complex process that occurs primarily at the cognitive level. The process of using research is a situated behavior or practice enacted in the context of the social communities that give it life. Research-based information is read, discussed, critiqued, and potentially used in decision-making. Currently, the health sciences sanction *research-based knowledge* as the most legitimate form of knowledge and the evidence-based movement is testimony to this. The use of research as a basis for decision making is seen as being rational and objective, thereby leading to better clinical practice (p. 360). Melnyk and Fineout-Overholt further illustrate the importance of evidence-based practice (2005):

The goal of EBP [*sic*] is to use the highest quality of knowledge in providing care to produce the greatest impact on patients' health status and healthcare. This entails using the following knowledge sources for care:

Valid research evidence as the primary basis of clinical decisions

Clinical expertise to best use the research by filling in gaps and tailoring the clinical action to the individual patient's context

Patient choices and concerns for determining the acceptability of research-based care to the individual patient

In clinical decisions, the key criterion for quality of underlying knowledge is certainty. Certainty is the level of sureness that clinical action will produce the intended or desired outcome....To appraise certainty, the practitioner must first uncover the source of knowledge underlying the contemplated clinical action, then appraise the quality of that knowledge (p. 75).

Regardless of the legitimacy of the clinician's knowledge, the literature contains multiple examples of nurses who fail to utilize research as a basis for practice (Cretin, Farley, Doleter, & Will, 2001; Egerod & Hansen, 2005; Olade, 2004; Pravikoff, Pierce, & Tanner, 2005). Without the systematic utilization of research, there cannot be evidence-based practice or the quality health care defined by the Institute of Medicine (2001), desired by those involved in healthcare, and demanded by consumers.

### Purpose of the Study

The purpose of this study was to identify the barriers to research utilization among nurses practicing in a community hospital. This study was designed to (1) identify barriers to research utilization using the BARRIERS to research utilization scale, and (2) discuss findings as a basis for future program planning for nurses in a specific community hospital.

### Conceptual Framework

The conceptual framework for this study is E. M. Rogers' diffusion of innovation. The earliest reported work on diffusion of innovation is attributed to Gabriel Tarde. In 1903, Tarde wished "to learn why, given one hundred different innovations conceived at the same time – innovations in the form of words, in mythological ideas, in industrial processes, etc., ten will spread abroad while ninety will be forgotten" (as cited in Rogers, 1995, p. 40). Diffusion research was developed in an attempt to understand human behavior change. Rogers defines diffusion as the "process by which an innovation is communicated through certain channels over time among members of the social system" (Rogers, 1995, p. 5). There are four main elements involved in the diffusion of innovation. These elements are the innovation, the communication channels, time, and the social system. Rogers defines an innovation as an idea, practice or object that is perceived as new by an individual or other unit of adoption. Communication is the

process of sharing information in an attempt to create mutual understanding. The social system is described as a set of interrelated units engaged in joint problem-solving to accomplish a common goal. Members of social systems include individuals, informal groups, and formal organizations (Rogers, 1995, chap. 1).

The decision to accept or reject an innovation does not occur suddenly. Rogers conceptualizes the innovation-decision process as occurring in five stages. Individuals are first exposed to an innovation, gaining knowledge and understanding of how the innovation functions. Individuals form favorable or unfavorable attitudes towards the innovation through persuasion. A decision is then made to adopt or reject the innovation. Implementation occurs when the innovation is put to use. The process of confirmation reinforces the innovation decision. The process of confirmation can also result in the reversal of the previously made decision to adopt or reject the innovation (Rogers, 1995, p. 162).

Factors which influence the rate of adoption of potential innovations include characteristics of the innovation, the communication channel, the nature of the social system; characteristics of the adopter, as well as the extent of external change agents' promotion efforts (see Appendix B for conceptual map).

#### Review of the Literature

At least thirty researchers have sought to identify barriers to research utilization among nurses (Barta, 1995; Berggren, 1996; Bostrom & Suter, 1993; Bryar et al., 2003; Camiletti & Huffman, 1998; Carroll et al., 1997; Dyson, 1997; Egerod & Hansen, 2005; Fink, Thompson, & Bonnes, 2005; Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003; Funk, Champagne, Wiese, & Tornquist, 1991a; Funk, Champagne, Wiese, & Tornquist, 1991b; Funk, Champagne, Wiese, & Tornquist, 1995; Gerrish & Clayton, 2004; Glacken & Chaney, 2004; Hutchinson &

Johnston, 2004; LaPierre, Ritchey, & Newhouse, 2004; McCaughan, 2001; McCleary & Brown, 2003; McKenna, Ashton, & Keeney, 2004; Morin et al., 1999; Olade, 2004; Olade, 2003; Omery & Williams, 1999; Parahoo & McCaughan, 2001; Pravikoff et al., 2005; Pravikoff, Tanner, & Pierce, 2005; Retsas, 2000; Rogers, 1999; Walczak, McGuire, Haisfiel, & Beezley, 1994; Walsh, 1997; Wells & Baggs, 1994). Previous studies have sampled nurses in a variety of settings, including acute care, pediatrics, community and rural health, surgical services, community hospitals, magnet affiliated hospitals, academic affiliated centers, as well as multiple site sampling (see Appendix A).

While the majority of studies focused on nurses working in the United States, a handful of studies have focused on nurses practicing in Denmark (Egerod & Hansen, 2005), Sweden (Berggren, 1996), Australia (Retsas, 2000; Hutchinson & Johnston, 2004), Scotland (Rogers, 1999), Ireland (Parahoo & McCaughan, 2001; Glacken & Chaney, 2004), and the United Kingdom (Bryar et al., 2003).

One limitation of previous studies is a lack of an explicit framework (Bostrom & Suter, 1993; Bryar et al., 2003; Camiletti & Huffman, 1998; Carroll et al., 1997; Egerod & Hansen, 2005; Gerrish & Clayton, 2004; Glacken & Chaney, 2004; Hutchinson & Johnston, 2004; McKenna et al., 2004; Morin et al., 1999; Pravikoff et al., 2005; Retsas, 2000; Walsh, 1997; Walczak et al., 1994; Wells & Baggs, 1994). Fourteen of the thirty studies reviewed did not identify a framework. Seven of the studies reviewed utilized Rogers' diffusion of innovation (Barta, 1995; Berggren, 1996; Fink et al., 2005; Funk et al., 1991a; Funk et al., 1991b; Funk et al. 1995; LaPierre et al., 2004; Olade, 2004; Parahoo & McCaughan, 2001; McCleary & Brown, 2003; Rogers, 1999).

An additional limitation is related to the measurement tools. Several of the researchers piloted a newly developed measurement device (Camiletti & Huffman, 1998; Egerod & Hansen, 2005; McKenna et al., 2004; Olade, 2003; Wells & Baggs, 1994), or changed the wording of an existing measurement device (Gerrish & Clayton, 2004). Additionally, several failed to mention how reliability of the new measurement device was determined (Camiletti & Huffman, 1998; Gerrish & Clayton, 2004; Olade, 2003; Wells & Baggs, 1994).

In 1991, Funk, Champagne, Tornquist, and Wiese created the measurement device that has been utilized most widely (see Appendix A). The framework for Funk et al. (1991a) item development was Rogers' diffusion of innovation. Rogers identifies four main processes that influence the process by which new information is adopted: (a) the innovation, (b) communication channel, (c) time, and (d) social system. Characteristics of the individual, innovation, organization, and communication channel all have influence on whether or not a new innovation is adopted (Funk, Champagne, Wiese, & Tornquist, 1991a). Upon identifying their framework, Funk et al. developed an instrument utilizing literature on research utilization, information from the Conduct and Utilization of Research in Nursing Project Utilization Questionnaire, and data gathered informally from nurses. The instrument was then pilot-tested on graduate nurses. A 29-item Likert scale resulted, which was then randomly ordered to form the BARRIERS Scale. The BARRIERS Scale was distributed as a survey to a large stratified random sample of 5,000 nurses from the 1987 American Nurses Association membership roster. Of the surveys distributed, 1,989 were returned for a response rate of 40%. The sample size was divided in half and analyzed utilizing four factor analyses. This analysis was used to identify the underlying dimensions of the items on the instrument.

The underlying dimensions on the instruments fell into one of four categories: characteristics of the adopter (reflected the nurses research values, skills and awareness), characteristics of the organization (barriers and limitations), characteristics of the innovation (qualities of the research), and characteristics of the communication (presentation and accessibility of the research).

The results of Funk et al. work provided a measurement tool with which to identify barriers to research utilization in practice. In eleven of the previous studies which have utilized the BARRIERS Scale to identify barriers to research utilization in practice, organizational support was cited as a top barrier (Bryar et al., 2003; Fink et al., 2005; Funk et al., 1991b; Hutchinson & Johnston, 2004; Glacken & Chaney, 2004; LaPierre et al., 2004; McCleary & Brown, 2003; Parahoo & McCaughan, 2001; Retsas, 2000; Walczak et al., 1994; Walsh, 1997). Time to read research (LaPierre et al, 2004; McCleary & Brown, 2003; Bryar et al., 2003; Retsas, 2000; Walczak et al., 1994), and insufficient authority to implement changes were among the top three cited barriers (Fink et al., 2005; Glacken & Chaney, 2004; Hutchinson & Johnston, 2004; Parahoo & McCaughan, 2001). Difficulty understanding statistics was cited as the top barrier in one study (Walsh, 1997). The setting, in relation to inadequate facilities, was identified as the top barrier in one study (Funk, Champagne, Tornquist, & Wiese, 1995) and factors related to the nurse were cited as the top barrier in two studies (Barta, 1991; Carroll et al., 1997).

Despite multiple attempts to identify the barriers to research utilization, research-practice gaps remain. It is difficult to know why these gaps have persisted. While much research on the utilization of research within the practice setting has taken place, it has focused primarily on academic medical centers, practice specific samples, or large groups at multiple sites.

Community hospitals have been largely omitted. Of the thirty studies reviewed, one utilized a community hospital as the primary research site (Walsh, 1997). The Institute of Medicine defines quality healthcare as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Institute of Medicine [IOM], 2001, p. 232). It is impossible to provide health services that are consistent with the current professional knowledge without research utilization. Identification of barriers to research utilization specific to a community hospital will allow for program planning removing perceived barriers. This will facilitate evidence-based practice, ultimately improving the quality of healthcare. Therefore, the purpose of this study was to identify the barriers to research utilization among nurses practicing in a community hospital.

#### Research Question

What are the perceived barriers to research utilization among registered nurses in a community hospital?

Previous studies have identified barriers to research utilization as (a) factors related to the quality of the research, (b) factors related to the nurse, (c) factors related to the organization, (d) factors related to the communication of the research (see Appendix A).

#### Significance to Nursing

At no time in the history of healthcare has the professional knowledge required to deliver safe, effective healthcare been so complex. Nurses who fail to base their practice on evidence will be ill equipped to meet the challenges facing them. There is evidence to suggest that patients who receive care based upon the best evidence from the latest well designed clinical studies experience 28% better outcomes than their counterparts who do not (as cited in Melnyk & Fineout-Overholt, 2005). There is also evidence to suggest that providers who utilize

evidence-based practice when providing care have higher levels of satisfaction than those who simply provide care that is “steeped in tradition” (as cited in Melnyk & Fineout-Overholt, p. 5, 2005).

Community hospitals have largely been omitted from previous research regarding barriers to research utilization. It is imperative that the barriers to research utilization in community hospitals be identified. Through the identification of barriers to research utilization, valuable information will be gathered that can be utilized as a basis for program planning. Appropriate program planning can assist in the removal of barriers to research utilization, thereby improving the quality of healthcare while increasing provider satisfaction.

#### Method of Study

##### *Design*

A descriptive design utilizing a survey was selected as the method to solicit opinions regarding the barriers to research utilization among nurses in the specific community hospital. Descriptive designs are appropriate when the purpose is to gain more information about characteristics within a particular field of study (Burns & Grove, 2005, p. 232). The primary threat to internal validity of for this type of research design is related to selection of participants. To minimize threats to internal validity associated with this design all registered nurses currently practicing within the community hospital at the time of the study were invited to complete the survey.

##### *Sample and Setting*

The research participants were a convenience sample of registered nurses practicing in a community hospital in Washington State. Currently, the community hospital utilizes 193 beds. The hospital is undergoing construction, expanding their bed capacity. The bedside nursing



staffs working at the community hospital are covered under a collective bargaining agreement. Recruitment was obtained by emailing potential participants the instrument and demographic information sheet (see Appendix E). Each registered nurse who maintained an active license and was employed within the community hospital was an eligible participant (n=372). Potential participants were identified utilizing the human resources database. Emails sent to potential participants included a cover letter, information describing the study, and enumeration to be made for participation. Efforts were made to decrease participant burden. The chosen survey was brief. Feedback from participants is that the questionnaire took no more than 20 minutes to complete. Enumeration was also provided to each participant upon completion of the survey. The enumeration was a gift certificate for a latte at the hospital's espresso bar. Participants were made aware of the enumeration prior to participating in the research study. These efforts resulted in decreased participant burden, strengthening the external validity of the study.

#### *Instrumentation*

A questionnaire and demographic information sheet were utilized. The participant demographic information sheet included participant characteristics of age in years, current role on the healthcare team, first nursing degree obtained, highest degree completed or currently enrolled, specialty certification, number of years worked as a registered nurse, employment status, racial or ethnic background, and current participation in continuing education activities (see Appendix E).

#### *The BARRIERS to research utilization scale.*

Developed in 1987 by Funk, Champagne, Tornquist, and Wiese, the BARRIERS to Research Utilization Scale (hereafter referred to as the BARRIERS Scale), was developed to assess clinicians', administrators', and academicians' perceptions of barriers to utilization of

research findings in practice (Funk et al., 1991a). The BARRIERS Scale uses a five-point response Likert-type scale with 29 items. The 29 items are classified into four factors: (a) characteristics of the adopter: the nurse's research values, skills, and awareness, (b) characteristics of the organization: setting, barriers and limitations, (c) characteristics of the innovation: qualities of the research, and (d) characteristics of the communication: presentation and accessibility of the research. Permission to use the scale was gained from Sandra G. Funk Ph.D., by submitting a signed permission form available online (Funk, 2001). Additional permission was gained to administer the survey in an electronic format (see Appendix C).

The internal consistency of the four sub-scales of the BARRIERS scale has been established. Funk et al, utilized factor analytic procedures to establish reliability of the instrument. Cronbach's alpha co-efficients for the four factors on the instrument were found to be .65-.80, with item-total correlation .30-.53 (Funk et al., 1991a, p. 43). Chronbach's alpha is a measure of internal consistency. This is related to the reliability of the instrument. Chronbach's alpha measure how well a set of items measures a single construct. When the item is multi-dimensional in nature, Chronbach's alpha will be low. "A reliability coefficient of .80 is considered the lowest acceptable value for a well-developed psychosocial measurement device" (Burns & Grove, 2005, p. 374). Chronbach's alpha for characteristics of the communication (presentation of the research) was low at .65. The Chronbach's alpha for characteristics of the innovation (quality of the research) is moderate at 0.72. However, the other two factors have strong reliability with alpha coefficients for the nurse, and setting, at .80, .80.

As the literature review revealed, the BARRIERS scale has been widely used to identify barriers to research utilization among nurses in a variety of practice settings. The BARRIERS Scale measures barriers to research utilization, which was of interest in this study. Subjects

completed the questionnaire at work and at their own pace, generally needing 15-20 minutes to complete. The results were combined into four subscales to determine which factors are barriers to research utilization among nurses in a community hospital. The BARRIERS Scale was modified from the original format to facilitate electronic administration but the content remained unchanged.

#### *Data Collection and Analysis*

Each registered nurse employed at the community hospital at the time of the research was emailed an electronic version of the BARRIERS Scale and the demographic information sheet. In order to provide enumeration, survey respondents were not anonymous. One week from the date of the original email, a follow-up email was sent to those who had not yet completed the BARRIERS scale, as well as a thank you and enumeration to those who had participated in the research study. This was repeated every two weeks until the end of the data collection period. Data collection began January 1, 2006, with a stop date of January 29, 2006. In the past, the average number of respondents for similar surveys was less than 30. A goal of 50 participants was established for this study.

Participant information was kept confidential. The organizations' electronic survey system allows for confidential data collection and access to this information to be limited to the administrator of the survey. In this case, the administrator of the survey was the primary investigator. The electronic survey was set with a stop date of January 29, 2006. After that point in time, participants were no longer permitted to access the survey. The stop date was communicated with potential participants at the time the survey was released. Survey results were stored electronically and exported to an Excel spreadsheet. Upon completion of the data collection period, the primary investigators removed all identifying information and assigned a

computer-generated number to each survey for labeling purposes. The initial data were maintained in a locked file until the completion of the data analysis. The principle investigator and data analyst performed data analysis. The participant data were analyzed using MINITAB® Statistical Software (release 14 Statistical Software for Windows, Minitab® Inc, 2005).

Analysis was performed as follows.

Each of the 29-items on the BARRIERS Scale loads into one of four factors. The individual responses for each item on the factor were averaged. Items for which the individual responded “no opinion” or left blank were eliminated. Therefore, the divisor for the mean was the number of items with valid responses, not the total number of items on the scale. While factor analysis allows for the reduction of the number of variables into groups and in interpretation of the structure of the data, factor analysis does not provide for the importance of the individual items on the scale. In order to determine which individual items were perceived as the single largest barriers to research utilization, the number of respondents who reported each barrier as a moderate or great barrier was calculated and items were rank ordered accordingly. Descriptive analysis provided for the identification of which factor is a barrier to research utilization among registered nurses in the specific community hospital, as well as identification of which individual items are barriers to research utilization. Demographic information was utilized to describe the sample. Results are described in the results section of this document.

#### *Human Subjects Considerations*

This research study was presented to the Nursing Leadership and the Training and Development staff at the research site. Both groups approved of the study. The Washington State University (WSU) human subjects protocol was followed. Approval was sought and

submitted to Washington State University Institutional Review Board and PeaceHealth Institutional Review Board.

The risks to participants were minimal. The primary concern was confidentiality of results. Confidentiality of results was protected with the steps previously outlined. An additional concern may be the disappointment of participants if barriers are identified and then no action is taken to remove the barriers to research utilization.

The benefits to participants were the opportunity to participate in research activities. Additionally, the identification of barriers to research utilization within the research site offers the opportunity for program planning to remove the barriers. The removal of the barriers to research utilization and the establishment of evidence-based practice have the potential to improve patient outcomes and increase provider satisfaction.

The consent form/explanation of the protocol (see Appendix D) was developed in accordance with WSU and PeaceHealth IRB guidelines. The consent is in English. The reading level is approximately eighth grade. The BARRIERS Scale is in English. The reading level is approximately twelfth grade.

# Barriers to Research Utilization Among Registered Nurses in a Community Hospital

## *Worldviews on Evidence-Based Nursing*

### **Abstract**

#### *Background*

At no time in the history of healthcare has the professional knowledge required to deliver safe, effective healthcare been so complex. Many researchers have explored the barriers to research utilization in practice, yet community hospitals have been largely omitted from these studies and the research-practice gap remains.

#### *Aims and Objectives*

The aim of this study was to identify the barriers to research utilization among registered nurses practicing in a community hospital.

#### *Methods*

A descriptive study design using the 29-item Barriers to Research Utilization Scale was utilized. Rogers' diffusion of innovations was the conceptual framework for this study. The survey was distributed, utilizing the community hospital's electronic survey system, to all registered nurses working in a community hospital in Washington State (n=372) in January of 2006. A 21% response rate was achieved (N=79).

#### *Results/Findings*

Greatest barriers to research utilization reported included characteristics of the organization, a lack of authority to change patient care procedures, lack of time to read research, and the lack of awareness of the research.

#### *Implications for Practice*

Organizational strategies that influence the rate of adoption of innovations, leading to research utilization, are discussed. These include evidence-based practice rounds, the use of clinically appraised topics, and educational prescriptions in which individuals reflect on the process of evidence-based practice and determine where they currently have learning gaps.

*Key Words*

barriers to research utilization, evidence-based practice, research utilization, diffusion of innovation

## **Introduction and Background**

At no time in the history of healthcare has the professional knowledge required to deliver quality healthcare been so complex. The Institute of Medicine defines quality health care as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Institute of Medicine [IOM], 2001, p. 232). One source of professional knowledge is randomized controlled trials. “Since the first contemporary randomized controlled trial was conducted more than 50 years ago, the number of trials conducted has grown to nearly 10,000 annually” (IOM, 2001, p. 2). Despite an increase in the availability of basic science and clinical research, many healthcare providers do not apply the available evidence (Brook, McGlynn, & Shekelle, 2000). This has led many organizations to push for the development of evidence-based practice (IOM, 2001; Agency for Healthcare Research and Quality [AHRQ], 2005; The Cochrane Collaboration, 2004; National Institutes of Health [NIH], 2005).

Evidence-based practice is described as the integration of individual clinical expertise with the best available external expertise. Clinical expertise refers to the skills the clinician develops over time through clinical experience and practice. External expertise refers to clinically relevant research, particularly patient centered research (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). While clinical expertise is developed over time, external expertise is not. Research utilization is fundamental to the development of external expertise and evidence-based practice. Research utilization is the use of research findings to support clinical decision-making. As defined by Scott-Findlay and Golden-Biddle (2005):

It is a complex process that occurs primarily at the cognitive level. The process of using research is a situated behavior or practice enacted in the context of the social



communities that give it life. Research-based information is read, discussed, critiqued, and potentially used in decision-making. Currently, the health sciences sanction *research-based knowledge* as the most legitimate form of knowledge and the evidence-based movement is testimony to this. The use of research as a basis for decision making is seen as being rational and objective, thereby leading to better clinical practice (p. 360). Melnyk and Fineout-Overholt further illustrate the importance of evidence-based practice (2005):

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care defined by the Institute of Medicine. This has lead many researchers to attempt to identify the barriers to research utilization among nurses.

At least thirty researchers have sought to identify barriers to research utilization among nurses (Barta, 1995; Berggren, 1996; Bostrom & Suter, 1993; Bryar et al., 2003; Camiletti & Huffman, 1998; Carroll et al., 1997; Dyson, 1997; Egerod & Hansen, 2005; Fink, Thompson, & Bonnes, 2005; Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003; Funk, Champagne, Wiese, & Tornquist, 1991a; Funk, Champagne, Wiese, & Tornquist, 1991b; Funk, Champagne, Wiese, & Tornquist, 1995; Gerrish & Clayton, 2004; Glacken & Chaney, 2004; Hutchinson & Johnston, 2004; LaPierre, Ritchey, & Newhouse, 2004; McCaughan, 2001; McCleary & Brown, 2003; McKenna, Ashton &, Keeney, 2004; Morin et al., 1999; Olade, 2004; Olade, 2003; Omery & Williams, 1999; Parahoo & McCaughan, 2001; Pravikoff et al., 2005; Pravikoff, Tanner, & Pierce, 2005; Retsas, 2000; Rogers, 1999; Walczak, McGuire, Haisfiel, & Beezley, 1994; Walsh, 1997; Wells & Baggs, 1994).

In 1991, Funk, Champagne, Tornquist, and Wiese created the measurement device that has been most widely utilized. The framework for Funk et al. (1991a) item development was Rogers' diffusion of innovation. Rogers identifies four main processes that influence the process by which new information is adopted: (a) the innovation, (b) communication channel, (c) time, and (d) social system. Characteristics of the individual, innovation, organization, and communication channel all have influence on whether or not a new innovation is adopted (Funk, Champagne, Wiese &, Tornquist, 1991a). Upon identifying their framework, Funk et al. developed an instrument utilizing literature on research utilization, information from the Conduct and Utilization of Research in Nursing Project Utilization Questionnaire, and data gathered informally from nurses. The item was pilot-tested on graduate nurses. A 29-item Likert scale

resulted, which was randomly ordered to form the BARRIERS Scale. The BARRIERS Scale was distributed as a survey to a large stratified random sample of 5,000 nurses from the 1987 American Nurses Association membership roster. Of the surveys distributed, 1,989 were returned for a response rate of 40%. The sample size was divided in half and analyzed utilizing four factor analyses. This analysis was used to identify the underlying dimensions of the items on the instrument.

The underlying dimensions on the instruments fell into one of four categories: characteristics of the adopter (reflected the nurses research values, skills and awareness), characteristics of the organization (barriers and limitations), characteristics of the innovation (qualities of the research), and characteristics of the communication (presentation and accessibility of the research).

The results of Funk et al. work provided a measurement tool with which to identify barriers to research utilization in practice. In eleven of the previous studies which have utilized the BARRIERS Scale to identify barriers to research utilization in practice, organizational support was cited as a top barrier (Bryar et al., 2003; Fink et al., 2005; Funk et al., 1991b; Hutchinson & Johnston, 2004; Glacken & Chaney, 2004; LaPierre et al., 2004; McCleary & Brown, 2003; Parahoo & McCaughan, 2001; Retsas, 2000; Walczak et al., 1994; Walsh, 1997). Time to read research (LaPierre et al, 2004.; McCleary & Brown, 2003; Bryar et al., 2003; Retsas, 2000; Walczak et al., 1994), and insufficient authority to implement changes were among the top three cited barriers (Fink et al., 2005; Glaken & Chaney, 2004; Hutchinson & Johnston, 2004; Parahoo & McCaughan, 2001). Difficulty understanding statistics was cited as the top barrier in one study (Walsh, 1997). The setting, in relation to inadequate facilities, was identified as the top barrier in one study (Funk, Champagne, Tornquist, & Wiese, 1995) and

factors related to the nurse were cited as the top barrier in two studies (Barta, 1995; Carroll et al., 1997).

Despite multiple attempts to identify the barriers to research utilization, research-practice gaps remain. It is difficult to know why these gaps have persisted. While much research on the utilization of research within the practice setting has taken place, it has focused primarily on academic medical centers, practice specific samples, or large groups at multiple sites. Community hospitals have been largely omitted. Of the thirty studies reviewed, one utilized a community hospital as the primary research site (Walsh, 1997). As mentioned, the Institute of Medicine defines quality healthcare as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Institute of Medicine [IOM], 2001, p. 232). It is impossible to provide health services that are consistent with the current professional knowledge without research utilization. Identification of barriers to research utilization specific to a community hospital will allow for program planning removing perceived barriers. This will provide for the facilitation of evidence-based practice, ultimately improving the quality of healthcare. Therefore, the purpose of this study was to identify the barriers to research utilization among nurses practicing in a community hospital. The conceptual framework for this study was E.M Rogers’ diffusion of innovation.

### **Research Question**

What are the perceived barriers to research utilization among registered nurses in a community hospital?

Previous studies have identified barriers to research utilization as (a) factors related to the quality of the research, (b) factors related to the nurse, (c) factors related to the organization, (d) factors related to the communication of the research.

### **Method of Study**

#### *Design*

A descriptive design utilizing a survey was selected as the method to solicit opinions regarding the barriers to research utilization among nurses in the specific community hospital. Descriptive designs are appropriate when the purpose is to gain more information about characteristics within a particular field of study (Burns & Grove, 2005, p. 232). To minimize threats to internal validity associated with this design, all registered nurses currently practicing within the community hospital at the time of the study were invited to complete the survey.

#### *Sample and Setting*

The research participants were a convenience sample of registered nurses practicing in a community hospital in Washington State. Currently, the community hospital utilizes 193 beds. The hospital is undergoing construction, expanding their bed capacity. The bedside nursing staffs working at the hospital are covered under a collective bargaining agreement. Recruitment was obtained by emailing potential participants the instrument and demographic information sheet. Each registered nurse employed at the hospital who maintained an active license was an eligible participant (n=372). Potential participants were identified utilizing the human resources database. Emails sent to potential participants included a cover letter, information describing the study, and enumeration to be made for participation. Efforts were made to decrease participant burden. The chosen survey was brief. Feedback from participants is that the questionnaire took no more than 20 minutes to complete. Enumeration was also provided to each participant upon

completion of the survey. The enumeration was a gift certificate for a latte at the hospital's espresso bar. Participants were made aware of the enumeration prior to participation. These efforts resulted in decreased participant burden, strengthening the external validity of the study.

### *Instrumentation*

A questionnaire and demographic information sheet were utilized. The participant demographic information sheet included participant characteristics of age in years, gender, current role on the healthcare team, first nursing degree obtained, highest degree completed or currently enrolled, specialty certification, number of years worked as a registered nurse, employment status, racial or ethnic background, and current participation in continuing education activities.

### *The BARRIERS to research utilization scale.*

Developed in 1987 by Funk, Champagne, Tornquist, and Wiese, the BARRIERS to Research Utilization Scale (hereafter referred to as the BARRIERS Scale), was developed to assess clinicians', administrators', and academicians' perceptions of barriers to utilization of research findings in practice (Funk et al., 1991a). The BARRIERS Scale uses a five-point response Likert-type scale with 29 items. The 29 items are classified into four factors: (a) characteristics of the adopter: the nurse's research values, skills, and awareness, (b) characteristics of the organization: setting, barriers and limitations, (c) characteristics of the innovation: qualities of the research, and (d) characteristics of the communication: presentation and accessibility of the research. Permission to use the scale was gained from Sandra G. Funk Ph.D., by submitting a signed permission form available online (Funk, 2001). Additional permission was gained to administer the survey in an electronic format.

The internal consistency of the four sub-scales of the BARRIERS scale has been established. Funk et al, utilized factor analytic procedures to establish reliability of the instrument. Cronbach's alpha co-efficients for the four factors on the instrument were found to be .65-.80, with item-total correlation .30-.53 (Funk et al., 1991a, p. 43). Chronbach's alpha is a measure of internal consistency. This is related to the reliability of the instrument. Chronbach's alpha measure how well a set of items measures a single construct. When the item is multi-dimensional in nature, Chronbach's alpha will be low. "A reliability coefficient of .80 is considered the lowest acceptable value for a well-developed psychosocial measurement device" (Burns & Grove, 2005, p. 374). Chronbach's alpha for characteristics of the communication (presentation of the research) was low at .65. Chronbach's alpha for characteristics of the innovation (quality of the research) was moderate at .72. However, the other two factors have strong reliability with alpha coefficients for the nurse and setting of .80.

As the literature review revealed, the BARRIERS scale has been widely used to identify barriers to research utilization among nurses in a variety of practice settings. The BARRIERS Scale measures barriers to research utilization, which was of interest in this study. Subjects completed the questionnaire at work and at their own pace, generally needing 15-20 minutes to complete. The BARRIERS Scale was modified from the original format to facilitate electronic administration. The content remained unchanged.

### *Data Analysis*

Each registered nurse employed at the community hospital at the time of the research was emailed an electronic version of the BARRIERS Scale and the demographic information sheet. In order to provide enumeration, survey respondents were not anonymous. The organizations' electronic survey system allows for confidential data collection and access to this information to

be limited to the administrator of the survey. In this case, the administrator of the survey was the primary investigator. The electronic survey was set with a stop date of January 29, 2006. After that point in time, participants were no longer permitted to access the survey. The stop date was communicated with potential participants at the time the survey was released. Survey results were stored electronically and exported to an Excel spreadsheet. Upon completion of the data collection period, the primary investigator removed all identifying information and assigned a computer-generated number to each survey for labeling purposes. The initial data were maintained in a locked file until the completion of the data analysis. The principle investigator and data analyst performed data analysis. One week from the date of the original email, a follow-up email was sent to those who had not yet completed the BARRIERS scale, as well as a thank you and enumeration to those who had participated in the research study. This was repeated every two weeks until the end of the data collection period. Data collection began January 1, 2006, with a stop date of January 29, 2006.

The participant data were analyzed using MINITAB® Statistical Software (release 14 Statistical Software for Windows, Minitab® Inc, 2005). Analysis was performed as follows. Each of the 29-items on the BARRIERS Scale loads into one of four factors. The individual responses for each item on the factor were averaged. Items for which the individual responded “no opinion” or left blank were eliminated. Therefore, the divisor for the mean for each factor was the number of items with valid responses, not the total number of items on the scale. While factor analysis allows for the reduction of the number of variables into groups and in interpretation of the structure of the data, factor analysis does not provide for the importance of the individual items on the scale. In order to determine which individual items were perceived as the single largest barriers to research utilization, the number of respondents who reported each



barrier as a moderate or great barrier was calculated and items were rank ordered accordingly. Descriptive analysis provided for the identification of which factor is a barrier to research utilization among registered nurses in the specific community hospital, as well as identification of which individual items are barriers to research utilization. Demographic information was utilized to describe the sample. Results are described in the results section of this document.

### *Human Subjects Considerations*

This research study was presented to the Nursing Leadership and the Training and Development staff at the research site. Both groups approved of the study. The consent form was in English and the reading level was approximately eighth grade. The BARRIERS scale was in English. The reading level is approximately twelfth grade. Institutional Review Board approval was obtained and human subjects protocol followed.

## Results

### *Demographics*

A total of 79 nurses returned questionnaires, representing a 21% response rate. Thirty percent of the respondents were in the 51-55-age range. Respondents included staff nurses (54.3%), charge nurses (12.66%), administrators (11.39%), nurse educators (5.06%), and those whose current role on the healthcare team was outside of one of the above listed roles (16.46%). The demographic characteristics of the nurses (Table 1) mirror the national workforce in age. The sample differs from the national workforce in educational preparation (fewer diploma graduates, fewer baccalaureate graduates, a higher percentage of associated degree prepared registered nurses) and in ethnicity (U.S. Department of Health and Human Services, 2000). Unlike the national sample, 78 of the respondents (98.73%) were white (non-Hispanic), while

one (1.27%) was an American Indian/Alaskan Native. Unfortunately, gender of respondents was not captured related to an omission when writing the html code of the electronic survey.

*Table 1*

Registered Nurse Demographics (n=79)	
Variable	N (%)
Age (years)	
20-25	0 (0)
26-30	5 (6.33)
31-35	8 (10.13)
36-40	5 (6.33)
41-45	12 (15.19)
46-50	19 (24.05)
51-55	24 (30.38)
56-60	5 (6.33)
61-65	1 (1.27)
Experience (years)	
1-5	7 (8.86)
6-10	11 (13.92)
11-15	9 (11.39)
16-20	13 (16.46)
21-35	15 (18.99)
26-30	12 (15.19)
>30	12 (15.19)

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### Current Employment Status

Full Time	55 (69.62)
Part Time	20 (25.32)
Relief	4 (5.02)

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The registered nursing staff reported variation in their initial educational preparation. Respondents reported having obtained diplomas (13.92%), associate degrees (69.92%) and baccalaureate degrees (16.46%) for initial licensure. Highest degree obtained or currently enrolled was reported as follows, diploma (8.86%), associate degree (45.57%), baccalaureate degree (27.85) and masters degree (17.72%). Certification in an area of specialty was indicated by 44.16% of respondents. Reports of participation in research related or continuing education activities varied as well. The majority of registered nurses reported that they participate in employer-sponsored events (78.48%) while 10.13 percent each reported they take part in conferences and have journal subscriptions (1.23% indicated no continuing education activities).

### *Barriers to Research Utilization*

The single largest characteristics identified as the greatest barrier to research utilization among registered nurses practicing in a community hospital were characteristics of the organization (mean 2.88, standard deviation 0.55), followed by characteristics of the communication (mean 2.53, standard deviation 0.55), characteristics of the adopter (mean 2.35, standard deviation .68), and characteristics of the innovation (mean 2.05, standard deviation 0.58). These findings are consistent with previous studies, in which organizational support was cited as a top barrier (Bryar et al., 2003, Fink et al., 2005; Funk et al., 1991b; Hutchinson &

Johnston, 2004; Glacken & Chaney, 2004; LaPierre et al., 2004; McCleary & Brown, 2003; Parahoo & McCaughan, 2001; Retsas, 2000; Walczak et al., 1994; Walsh, 1997). A rank ordering of the twenty-nine barriers and the percentage of items perceived by the registered nurses as great or moderate barrier are summarized in Table 2. The top three cited barriers reported in this study were lack of authority to change patient care procedures, lack of time to read research, and a lack of awareness of the research.

*Table 2*

BARRIERS Scale items in rank order by mean score			
Barrier items	Item mean score (SD) rank order	Reporting item as moderate or great barrier (%) N=79	Responding “no opinion” or non- response (%)
The nurse does not feel she/he has enough authority to change patient care procedures	3.29 (0.89)	79.7%	2.5%
The nurse does not have enough time to read research	3.04 (0.86)	70.9%	2.5%
The nurse is unaware of the research	3.03 (1.02)	65.8%	3.8%
There is insufficient time on the job to implement new ideas	2.99 (0.90)	67.1%	0
Physicians will not cooperate with implementation	2.93 (0.88)	60.7%	12.7%

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BARRIERS Scale items in rank order by mean score

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The relevant literature is not compiled in one place	2.87 (0.91)	46.8%	20.2%
The nurse feels results are not generalizable to own setting	2.80 (0.89)	59.5%	6.3%
The facilities are inadequate for implementation	2.79 (0.89)	55.7%	10.1%
The amount of research information is overwhelming	2.77 (0.97)	55.7%	5.1%
Statistical analysis are not understandable	2.75 (0.94)	62%	3.8%
Other staff are not supportive of implementation	2.69 (0.91)	45.6%	15.2%
The nurse does not feel capable of evaluating the quality of the research	2.68 (0.88)	54.4%	3.8%
The research is not reported clearly and readably	2.62 (0.79)	49.4%	7.6%
Administration will not allow implementation	2.58 (0.96)	41.8%	21.5%
The nurse is isolated from knowledgeable colleagues with whom to discuss the research	2.87 (0.90)	43%	3.8%

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BARRIERS Scale items in rank order by mean score

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Implications for practice are not made clear	2.44 (0.78)	41.8%	7.6%
Research reports/articles are not readily available	2.38 (0.87)	40.5%	1.3%
The research has not been replicated	2.47 (0.83)	22.8%	43%
The literature reports conflicting results	2.31 (0.71)	30.3%	11.4%
The nurse is unwilling to change/try new ideas	2.26 (0.98)	36.7%	2.5%
The nurse feels the benefits of changing will be minimal	2.26 (0.92)	34.2%	6.3%
The nurse is uncertain whether to believe the results of the research	2.25 (0.80)	32.9%	8.9%
The research is not relevant to the nurse's practice	2.18 (0.83)	29.1%	6.3%
There is not a documented need to change practice	2.14 (0.95)	30.1%	7.6%
The nurse sees little benefit for self	2.08 (1.01)	32.9%	3.8%
The research has methodological inadequacies	2.07 (0.74)	12.7%	41.8%
Research reports are not published fast enough	2.0 (0.90)	19%	27.8%

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BARRIERS Scale items in rank order by mean score

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The nurse does not see the value for practice	1.92 (0.99)	29.1%	2.5%
The conclusions drawn from the research are not justified	1.67 (0.66)	8.9%	16.4%

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*Discussion and Implications*

The purpose of this study was to identify the barriers to research utilization among registered nurses practicing in a community hospital. The results are consistent with previously published works regarding barriers to research utilization. The respondents in this study reported characteristics of the organization as the major barrier, and therefore a potential source of change, for the implementation of research findings. Rogers' diffusion of innovation identifies the social system as having influence over the process by which a new innovation is adopted. The social system can also influence the rate at which new innovations are communicated. Similar results have been reported in at least eleven previously published works. The rank ordering of results is consistent with previously published works as well. Insufficient authority to implement changes has been cited as the top barrier to research utilization in at least four studies (Fink et al., 2005; Glaken & Chaney, 2004; Hutchinson & Johnston, 2004; Parahoo & McCaughan, 2001). Insufficient time to read research was the top cited barrier in five previous works (LaPierre et al, 2004; McCleary & Brown, 2003; Bryar et al., 2003; Retsas, 2000; Walczak et al., 1994), and a lack of awareness of the research was cited as the top barrier in at least one study (Carroll et al., 1997). These findings are also representative of Funk et. al's

original research on barriers to research utilization, which identified clinician's perceptions of organizational characteristics as the major barrier to research utilization, insufficient authority to change practice, and insufficient time on the job to read research and implement new ideas among the top cited barriers (Funk et al., 1991b).

One note-worthy finding was the number of respondents who replied "no-opinion" or did not indicate a response, particularly to those questions regarding characteristics of the innovation and characteristics of the communication. These questions focus on the quality and presentation of the research. The highest rate of non-response was in relation to the following two items, "the research has methodological inadequacies" (41.8%) and "the research has not been replicated" (43%). This implies that the respondents may not be familiar enough with research to have formed an opinion regarding methods. This is further supported by the rank ordering of barriers, in which a lack of awareness of the research was one of the top cited individual barriers to research utilization. This self-report of lack of awareness provides valuable information for program planning.

A little over sixty five percent of the registered nurses at this community hospital reported they are unaware of the research. They also reported that the relevant literature is not compiled in one place (46.8%), the amount of research information is overwhelming (55.7%), and the nurse does not feel capable of evaluating the quality of the research (54.5%). While at first glance, these results may appear dichotomous, they reflect a lack of knowledge and skill related to evidence-based practice and research utilization. This is possibly related to the high percentage of diploma and associate degree prepared nursing staff practicing within the community hospital. Fifty-four percent of the sample reported highest degree obtained as diploma or associate degree. Currently, less than 11% of this community hospital's bedside



nursing staff is baccalaureate prepared. The competencies associated with diploma and associate degree programs do not include the skills required for critical appraisal of research (AACN-AONE Task Force on Differentiated Competencies for Nursing Practice, 1995). Recent research has also highlighted registered nursing staffs' skill deficit related to electronic databases as a means of obtaining information (Pravicoff, Tanner & Pierce, 2005).

The community hospital utilized for this research study is among the 100 most wired hospitals in the nation (IDX [IDX], 2004). While the nursing staffs are reporting that the relevant literature is not compiled in one place, it is. All that is needed are the skills to access and search electronic databases such as CINAHL®, OVID®, PubMed®, Medline®, Cochrane®, UpToDate®, or EBSCOhost®. This particular institution maintains subscriptions to all the above listed search engines. The registered nurses have access from both laptop and stationary devices at the point of care. The report from the staff that the amount of research information is overwhelming suggests that they do not know how to utilize these search engines. Logging onto any one of these databases and failing to enter a well-constructed search question results in an overload of information. While these are major barriers, they can be overcome.

There are organizational strategies that have been successfully implemented, influencing the rate of adoption of innovations, facilitating evidence-based practice. These include the use of evidence-based practice rounds, critically appraised topics (one-page summary of the evidence with bottom-line recommendations for practice), and educational prescriptions in which individuals reflect on the process of evidence-based practice and determine where they currently have learning gaps (as reported in Fineout-Overholt, Levin & Melnyk, 2004). Clearly, the registered nursing staffs in this community hospital need assistance in developing the skills to utilize research as a basis for practice. There are commonalities between this study and

previously published works, which illustrate the need for organizations to support registered nurses in developing the skills for research utilization and evidence-based practice. Possible interventions include educational sessions and skill development in asking clinically relevant questions, locating the literature utilizing well-constructed questions, appraising the literature (for those with the skills to do so) and the utilization of critically appraised topics. Results of these educational interventions and organizational support could then be evaluated to determine if they result in an environment in which the barriers to research utilization are lessened and the services provided are consistent with the current professional knowledge.

### *Limitations*

An error was made when converting the BARRIERS Scale to html format to facilitate electronic administration of the survey. While the content of the BARRIERS Scale remained unchanged, the error resulted in an omission on the participant demographic sheet. Gender of respondents was not tracked. The self-report method utilized in this study may have resulted in reporting bias. Those who responded to a survey regarding the barriers to research utilization may be more interested in research utilization than those who did not respond. The response rate, which is somewhat lower than other studies that have utilized the BARRIERS Scale, may reflect response bias. Internal consistency of the scale is of concern as well. As mentioned, Chronbach's alpha of the BARRIERS Scale for factors related to the research is somewhat low at .72. In this study, the number of respondents who selected "no-opinion" or left an item on the scale blank may have worsened reliability. For ten of the twenty-nine items on the scale, more than 10% of respondents selected "no-opinion" or failed to respond. Three of these items related to characteristics of the research. However, the results are consistent with previously conducted

studies regarding the registered nursing staffs' identification of barriers to research utilization in practice.

### *Conclusions*

Despite a push for evidence-based practice from regulatory boards and health care professionals alike, and a rapid growth of evidence-based practice with recent years, it appears the barriers to research utilization within the professional practice setting remain unchanged. Since the development of the BARRIERS Scale in 1991, registered nursing staffs have consistently identified characteristics of the organization as having the most influence over research utilization. As nurses are identifying the organization as a barrier, the organization can be used as a powerful tool to enhance research utilization and evidence-based practice.

The results of this study suggest registered nurses in community hospitals have unique needs related to research utilization that have not been illustrated in the same manner by their counterparts in previous studies. The incredibly high percentage of participants reporting “no-opinion” or leaving an item blank, particularly on those items related to the use of research, suggests the staff lack experience, exposure, and knowledge regarding the availability of current research. Further exploration is needed to determine the meaning of the high-percentage of non-response as well as the meaning of “no-opinion”. While the barriers to research utilization in community hospitals are consistent with previously published works, this study offers insight into the needs of registered nurses practicing in community hospitals. In order to develop evidence-based practice within community hospitals, organizations must address the skill deficits of their staff and establish programs to meet those needs. Only then will these staff become aware of the availability of current research, critique the research, and apply these findings when providing patient care.

## Reference

- AACN-AONE Task Force on Differentiated Competencies for Nursing Practice (1995). *A model for differentiated practice*. Retrieved February 11, 2006, from <http://www.aacn.nche.edu/Publications/pdf/DIFFMOD/.PDF>
- Agency for Healthcare Research and Quality (2005). *The Southern California evidence-based practice center: A Rand health center*. Retrieved September 24, 2005, from <http://www.rand.org/health/centers/epc>
- Barta, K. (1995). Information-seeking, research utilization, and barriers to research utilization of pediatric nurse educators [Electronic version]. *Journal of Professional Nursing, 11*(1), 49-57.
- Berggren, A. (1996). Swedish midwives' awareness of, attitudes to and use of selected research findings [Electronic version]. *Journal of Advanced Nursing, 23*(3), 462-470.
- Bostrom, J., & Suter, W. N. (1993). Research utilization: Making the link to practice [Electronic version]. *Journal of Nursing Staff Development, 9*(1), 28-34.
- Brook, R. H., McGlynn, E. A., & Shekelle, P. G. (2000). Defining and measuring quality of care: A perspective from US researchers [Electronic version]. *International Journal for Quality in Health Care, 12*(4), 281-295.
- Bryar, R. M., Closs, S. J., Baum, G. Cooke, J. Griffiths, J. Hostick, T. Kelly, S. Knight, S., Marshall, K. & Thompson, D., R. (2003). The Yorkshire BARRIERS project: Diagnostic analysis of barriers to research utilisation [Electronic version]. *International Journal of Nursing Studies, 40*, 73-84.
- Burns, N. & Grove, S. K. (2005). *The practice of nursing research: Conduct, critique, and utilization* (5th ed.). St. Louis, Missouri: Elsevier Saunders.

- Camiletti, Y. A., & Huffman, M. C. (1998). Research utilization: Evaluation of initiatives in a public health nursing division [Electronic version]. *Canadian Journal of Nursing Administration, 11*(2), 59-77.
- Carroll, D. L., Greenwood, R. Lynch, K., Sullivan, J. K., Ready, C., & Fitzmaurice, J. B. (1997). Barriers and facilitators to the utilization of nursing research [Electronic version]. *Clinical Nurse Specialist, 11*(5), 207-212.
- Cretin, S. Farley, D. O., Doleter, K., & Will, N. (2001). Evaluating and integrated approach to evaluating clinical quality improvement: Clinical guidelines, quality measurement, and supportive system design [Electronic version]. *Medical Care, 39*(8), 70-84.
- Dyson, J. (1997). Research: Promoting positive attitudes through education [Electronic version]. *Journal of Advanced Nursing, 26*(3), 608-612.
- Egerod, I., & Hansen, G. M. (2005). Evidence-based practice among Danish cardiac nurses: A national survey [Electronic version]. *Journal of Advanced Nursing, 51*, 465-473.
- Estabrooks, C. A., Floyd, J. A., Scott-Findlay, S. O'Leary, K. & Gushta, M. (2003). Individual determinants of research utilization: A systematic review [Electronic version]. *Journal of Advanced Nursing, 43*(5), 506-520.
- Fineout-Overholt, E. Levin, R. F., & Melnyk, B. M. (2004). Strategies for advancing evidence-based practice in clinical settings. *Journal of the New York State Nurses Association, 35*(2), 28-32.
- Fink, R. Thompson, C., & Bonnes, D. (2005). Overcoming barriers and promoting the use of research in practice [Electronic version]. *Journal of Nursing Administration, 35*(3), 121-129.

- Funk, S. G. (2001). *BARRIERS to Research Utilization Scale*. Retrieved September 19, 2005, from <http://www.unc.edu/depts/rsc/funk/barrier1.html>
- Funk, S. G., Champagne, M. T., Tornquist, E. M., & Wiese, R. A. (1995). Administrators' views on barriers to research utilization [Electronic version]. *Applied Nursing Research*, 8(1), 44-49.
- Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1991a). BARRIERS: The barriers to research utilization scale [Electronic version]. *Applied Nursing Research*, 4(1), 45-49.
- Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1991b). Barriers to using research findings in practice: The clinician's perspective [Electronic version]. *Applied Nursing Research*, 4, 90-95.
- Gerrish, K., & Clayton, J. (2004). Promoting evidence-based practice: An organizational approach [Electronic version]. *Journal of Nursing Management*, 12, 114-123.
- Glacken, M. & Chaney, D. (2004). Perceived barriers and facilitators to implementing research findings in the Irish practice setting [Electronic version]. *Journal of Clinical Nursing*, 13, 731-740.
- Hutchinson, A. M., & Johnston, L. (2004). Bridging the divide: A survey of nurses' opinions regarding barriers to, and facilitators of, research utilization in the practice setting [Electronic version]. *Journal of Clinical Nursing*, 13, 304-315.
- IDX (2004). *Imagecast customers named to the 100 most wired*. Retrieved February 25, 2006, from <http://www.idx.com/corporate/idxchange04vol3.asp>
- Institute of Medicine (2001). *Crossing the quality chasm*. Washington, D.C.: National Academy Press.

- LaPierre, E. Ritchey, K., & Newhouse, R. (2004). Barriers to research use in the PACU [Electronic version]. *Journal of PeriAnesthesia Nursing, 19*(2), 78-83.
- McCleary, L., & Brown, G. T. (2003). Barriers to paediatric nurses' research utilization [Electronic version]. *Journal of Advanced Nursing, 42*(4), 364-372.
- McKenna, H. P., Ashton, S., & Keeney, S. (2004). Barriers to evidence-based practice in primary care [Electronic version]. *Journal of Advanced Nursing, 45*(2), 178-189.
- Melnyk, B. M., & Fineout-Overholt, E. (2005). *Evidence-based practice in nursing and healthcare: A guide to best practice*. New York: Lippincott Williams & Wilkins.
- Morin, K. Bucher, L. Plowfield, L. Hayes, E. Mahoney, P., & Armiger, L. (1999). Using research to establish protocols for practice: A statewide study of acute care agencies [Electronic version]. *Clinical Nurse Specialist, 13*(2), 77-84.
- National Institutes of Health (2005). *Questions and answers about NIH*. Retrieved September 24, 2005, from <http://www.nih.gov/faq/about/Faqs.htm>
- Olade, R. (2004). Evidence-based practice and research utilization activities among rural nurses [Electronic version]. *Journal of Nursing Scholarship, 36*(3), 220-225.
- Olade, R. A. (2003). Attitudes and factors affecting research utilization [Electronic version]. *Nursing Forum, 38*(4), 5-15.
- Omery, A., & Williams, R. (1999). An appraisal of research utilization across the United States [Electronic version]. *Journal of Nursing Administration, 29*(12), 50-56.
- Parahoo, K., & McCaughan, E. M. (2001). Research utilization among medical and surgical nurses: A comparison of their self reports and perceptions of barriers and facilitators [Electronic version]. *Journal of Nursing Management, 9*, 21-30.

- Pravikoff, D. S., Pierce, S. T., & Tanner, A. (2005). Evidence-based practice readiness study supported by academy nursing informatics expert panel. *Nursing Outlook*, 53(1), 49-50.
- Pravikoff, D. S., Tanner, A. B., & Pierce, S. T. (2005). Readiness of U.S. nurses for evidence-based practice. *American Journal of Nursing*, 105(9), 40-51.
- Retsas, A. (2000). Barriers to using research evidence in nursing practice [Electronic version]. *Journal of Advanced Nursing*, 31(3), 599-606.
- Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.
- Rogers, S. E. (1999). The extent of nursing research utilization in general medical and surgical wards [Electronic version]. *Journal of Advanced Nursing*, 32(1), 182-193.
- Sackett, D. L., Rosenburg, W. M., Gray, J. M., Haynes, R., & Richardson, W. (1996). *Evidence-based medicine: What it is and what it isn't*. Retrieved September 19, 2005, from [http://www.cemb.net/emb\\_is\\_isnt.asp](http://www.cemb.net/emb_is_isnt.asp)
- Scott-Findlay, S., & Golden-Biddle, K. (2005). Understanding how organizational culture shapes research use [Electronic version]. *Journal of Nursing Administration*, 37(7-8), 359-365.
- The Cochrane Collaboration (2004). *Cochrane: The reliable source of evidence in health care*. Retrieved September 24, 2005, from <http://www.cochrane.org/index0htm>
- U.S. Department of Health and Human Services (2000, March). *The Registered Nurse population*. Retrieved February 11, 2006, from <http://bhpr.hrsa.gov/healthworkforce/reports/rnsurvey/rnss1.htm>
- Walczak, J. R., McGuire, D. B., Haisfiel, M. E., & Beezley, A. (1994). A survey of research-related activities and perceived barriers to research utilization among professional oncology nurses [Electronic version]. *Oncology Nursing Forum*, 21(4), 710-715.



Walsh, M. (1997). How nurses perceive barriers to research implementation [Electronic version]. *Nursing Standard*, 11(29), 34-39.

Wells, N., & Baggs, J. G. (1994). A survey of practicing nurses' research interests and activities [Electronic version]. *Clinical Nurse Specialist*, 8(3), 145-151.

## Appendixes

### *Appendix A*

Critical analysis table

### *Appendix B*

Conceptual Map / Rogers Diffusion of Innovation

### *Appendix C*

Permission to use BARRIERS Scale

### *Appendix D*

Overview of Protocol for Participants / Consent

### *Appendix E*

Participant Demographic Information Sheet and BARRIERS Scale

## Appendix A

### Studies Exploring Barriers to Research Utilization among Nurses

Author and Year	Purpose	Sample	Theory Framework	Design	Instruments	Results	Implications
Funk, S., Champagne, M., T., Tornquist, E., M., & Wiese, R., A.  1991a	Develop instrument to assess clinicians', administrators', and academicians perceptions of barriers to utilization of research findings in practice	5,000 Registered Nurses	Rogers' diffusion of innovation	Descriptive, exploratory	Developed the BARRIERS to research utilization instrument	40 % response rate (n=1,989)  Barriers included factors related to nurse, factors related to quality of the research, factors related to characteristics of organization, and factors related to communication (presentation and accessibility of the research)	New tool to identify barriers to research utilization
Funk, S.,	Identify	Stratified	Rogers'	Descriptive	BARRIERS to	40% response	

Champagne, M., T., Tornquist, E., M., & Wiese, R., A. 1991b	clinicians perceptions of barriers to using research findings in practice and perceptions of factors that enhance research use	sample of 5,000 Registered Nurses employed full time	diffusion of innovation		research utilization scale	rate.  Insufficient time rated as top barrier, insufficient authority to change patient care procedures cited as a barrier.	
Bostrom, J., & Suter, N. 1993	Determine factors related to a nurses' use of research findings	7,000 nurses employed at 12 California healthcare agencies between May 1987 and March 1988	Not explicitly listed	Descriptive	Survey of Nurses' Research Attitudes and Activities	1,588 surveys returned  Staff involvement in research-related activities such as data collection is the best predictor of use of research findings in the clinical setting	Finding used to designed strategies for facilitating the transfer of research findings to practice
Walczak, J., R., McGuire, D., B., Haisfield, M., E., & Beezley, A.	Identify staff nurses members current research-related	164 registered nurses employed at a cancer center	Not explicitly stated	Descriptive	Four-part, 38 item questionnaire  BARRIERS to research	82 questionnaires were returned  Respondents familiar with	

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1994	activities, knowledge of research utilization, and perceived barriers to using research in practice				utilization scale	concept of research utilization, found research of value  Cited a number of barriers , reported little participation in research related activities  Nurses with master's degrees participate in more research related activities
Wells, N., & Baggs, J., G.  1994	Examine research attitudes and involvement of nurses working in a large (>500 beds) academic medical center  Compare interests and	Random sample of 25% of all staff. 551 surveys distributed	Not explicitly listed	Descriptive, comparative, exploratory	15-item research attitudes scale	285 surveys returned Three factors were identified: research value, confidence, and perceived support  Significant differences

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	involvement among nurses at different career levels					found for research value and confidence among three levels of clinical practice. Advanced practice nurses reported higher research value and confidence than staff nurses and nurse managers
	Explore factors to research use and conduct					52% response rate
Barta, K., M. 1995	Examine information-seeking, research utilization, perceived barriers to research utilization of pediatric nurse educators in National League for Nursing accredited baccalaureate nursing programs	409 pediatric nurse educators	Rogers diffusion of innovation	Descriptive, explorative, correlational	Nursing Practice Questionnaire-Education  BARRIERS to research utilization scale	The most frequently selected sources of information for updating instruction of BSN students were nursing journals, educational activities by specialty groups, and nursing texts

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						Highest perceived barriers: characteristics of nurse, characteristics of setting, presentation of research
						Pediatric nurse educators who selected nursing journals among their top three sources of information had significantly higher research utilization scores than those who did not
Funk, S., Champagne, M., T., Tornquist, E., M., & Wiese, R., A.	Identify administrators perceptions of the barriers to using research findings in practice and	Stratified sample of 5,000 Registered Nurses employed full time	Rogers' diffusion of innovation	Descriptive	BARRIERS to research utilization scale	40% response rate, of which 414 were classified as clinical administrators

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1995	their perceptions of factors that enhance or facilitate research use					Identified factors related to nurse, setting, and presentation of research as largest barrier	
Berggren, A. 1996	Examine the awareness of, attitudes to and use of selected research finding among members of a county division of the midwives' division of Sweden	146 members of the Midwives Association of Sweden	Rogers's diffusion of innovation	Descriptive	Nursing Practice Questionnaire	Midwives used research findings if they believed they would have beneficial outcomes for mother and baby	Additional research is needed to plan interventions to build research utilization and evidence based practice in a social system.
Carroll, D., L., Greenwood, R., Lynch, K., E., Sullivan, J., L., Ready, C., & Fitzmaurice, J., B. 1997	Explore nurse's perception of barriers and facilitators to using research findings in nursing practice	1,100 nurses working in a large urban academic medical center	Not explicitly listed (although follow Rogers' diffusion of innovation)	Descriptive, exploratory	BARRIERS to research utilization scale	356 nurses returned survey  Greatest barriers were insufficient time on job to implement new ideas, lack of knowledge, and inaccessibility of relevant literature	The advanced practice nurse is pivotal to decrease barriers to research utilization



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Dyson, J. 1997	Explore the relationship between nurses' attitudes towards research and their educational experience	61 students (also nurses)		Descriptive, exploratory	Likert-style questionnaire	Higher levels of education were associated with more positive feelings regarding research	
Walsh, M. 1997	Examine perceived barriers to research use	185 nurses employed in a community hospital	Not explicitly listed (although follows Rogers' diffusion of innovation)	Descriptive	BARRIERS to research utilization scale	141 surveys returned (76.2%)  Major barriers identified related to the clinical setting and understanding of research reports	Implications for managers and educators who seek to promote evidence-based practice
Camiletti, Y., A., & Huffman, M., C. 1998	Determine effectiveness of a Research Utilization Manual, effectiveness of administering modules at team meetings, effectiveness of in-services	60 public health nurses	Newly developed research utilization model	Descriptive, explorative	Questionnaire	42 surveys were returned  Results indicated that public health nurses valued research and felt comfortable with the	Recommendations included need to designate specific time for research activities

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	related to research for public health nurses, identify whether the public health nurses had moved beyond asking questions and were engaging in the phases of the research utilization model, and gather information to assist in future planning					concepts. They engaged in research activities if conducted at team meetings and when time was allotted. However, 67.5% were not changing their practice as a result of the initiatives  Time was cited as a barrier
Morin, K., Bucher, L., Plowfield, L., Hayes, E., Mahoney, P., & Armiger, L.  1999	Examine research utilization research utilization practice relative to developing and revising practice protocols in acute care	32 resource nurses from 11 agencies	Not explicitly stated	Descriptive, exploratory	Interview guide employed by Haber et al.	The majority of protocols submitted, while referenced, were not research based. Most institutions used textbooks and standards to support

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	agencies in Delaware					nursing practice protocols.
						Authors concluded that nurses who are responsible for developing and revising agency protocols were not familiar with the use of research findings to guide development or revision of protocols and were unsure what constituted the “use of research”
Omery, A., & Rhea, W. 1999	Describe current and future nursing research utilization activities in various clinical agencies across	20 nurses. 19 doctorally prepared and one masters prepared nurse	Change, freezing, unfreezing, refreezing	Descriptive, exploratory	20-minutes interviews  Qualitative methodologies were utilized to group conversations	Most frequent research utilization projects focused on pressure ulcers and pain management

	the United States				into themes	Barriers included lack of resources, organizational culture, change, and nurses' education
						Facilitators included leadership commitment, available resources, and a supportive organizational culture
Rodgers, S. E. 1999	Describe extent of research utilization by registered nurses in medical and surgical wards in Scottish Health Service	936 nurses from 25 hospitals	Rogers' diffusion of innovation	Descriptive	Questionnaire based on the Nursing Practice Questionnaire	73% response rate Over representation of nurses in large hospitals and charge nurse  Large variations in practice, many nurses are

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						making attempts at evidence-based practice	
Retsas, A. 2000	Establish extent of research use and research expertise within nursing division of a medical center  Identify barriers nursing staff believed interfere with ability to use research findings in clinical practice  Establish extent nursing staff perceived support in these endeavors	800 registered nurses at a teaching hospital in Melbourne, Australia	Not explicitly listed	Descriptive	BARRIERS to research utilization scale with additional open ended questions	50% response rate  Perceived organizational support as the largest barrier	Strong level of research readiness among this group when compared with other studies
Parahoo, K., &	Compares	210 medical	Rogers'	Descriptive,	BARRIERS to	High extent of	Top two barriers

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McMcCaughan, E.M. 2001	research utilization and perception of barriers and obstacles between medical and surgical nurses	nurses and 269 surgical nurses from 10 general hospitals and 14 Trusts in Northern Ireland	diffusion of innovation	comparative	research utilization scale	research utilization, less than 10% reporting seldom/never. Difference between two groups small. Medical nurses report slightly higher rate of utilization (not statistically significant)	related to organizational barriers
Bryar, R., Closs, S., J., Baum, G., Cooke, J., Griffiths, J., Hostick, T., Kelly, S., Knight, S., Marshall, K., & Thompson, D., R. 2002	Identify barriers to research implementation by nurses, midwives and health visitors in five trusts and one health authority	4,501 staff in a health authority in Yorkshire, UK	Not explicitly listed (although follow Rogers' diffusion of innovation)	Descriptive	BARRIERS to research utilization scale	44.6% return rate (n=2,009)  Need to time read and apply research; authority to change practice; critical appraisal skills; understanding of statistics, support of managers and peers	Practice change likely not to happen without support
Estabrooks, C., A., Floyd, J., A., Scott-	Report findings on a systematic review of	1,000 articles	Inclusion criteria: studies had	Meta-analysis	104 articles met study criteria	Six categories of potential individual	

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Findlay, S., O’Leary, K., A., & Gushta, M.	studies that examine individual characteristics of nurse and how they influence the utilization of research	to measure one or more individual determinants of research utilization, measure the determinant variable, and evaluate the relationship between the dependent and independent variable	determinants identified: beliefs and attitudes, involvement in research activities, information seeking, professional characteristics, education and other socio economic factors
2003		The studies also had to indicate the direction of the relationship between the independent and dependent variables, report a p- value and the statistic used, and indicate the	Additionally, methodological problems surfaced in all of the studies

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Olade, R., A. 2003	Describe attitude of nurses in rural settings toward nursing research and relationship between selected variables and nurses' attitude toward research	120 nurses in a rural practice setting	magnitude of the relationship Rogers' diffusion of innovation	Descriptive, correlational	Survey tool developed by the author	106 surveys were returned  Less than quarter of nurses in the study had favorable attitudes toward research. Attitudes and interest varied with levels of education and position. The isolation of rural nurses from nurse researchers creates an additional barrier	The influence of educators and researchers can not be over emphasized
McCleary, L., & Brown, T. 2003	Investigate barriers to research utilization and relationships between those barriers and	528 nurses in a pediatric teaching hospital	Rogers' diffusion of innovation	Descriptive	Edmonton Research Orientation Survey and the BARRIERS to research utilization	33.3% response rate  Lack of time to read research was most frequently	Congruent with previous findings  Indicate knowledge about research may not be as important as

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	participation in research, self-reported research utilization and education among pediatric nurses				scale	cited barrier	process by which organizations implement research
						Characteristics of communication and setting more likely to be cited as barriers research than were characteristics of nurse	Barriers scale measures general perceptions about barriers to research utilization and not nurses' specific experiences with barriers to implementing research
						Those who had course about reading or using research more likely to see the organization as a barrier.	
						Barriers to research use were not associated with self-reported understanding of research	
Gerrish, K., & Clayton, J.	Examine factors that influence	728 nurses	Not explicitly listed.	Descriptive	Questionnaire	330 questionnaires were returned	Health care organizations need to consider

2004	achievement of evidence-based practice						<p>Nurses relied heavily on experiential knowledge</p> <p>Organizational knowledge was used more frequently than research findings</p> <p>Lack of time, resources, and perceived authority to change practice cited as barriers</p>	<p>multiple strategies to facilitate and promote evidence-based practice. Managerial support, facilitation, and a culture that is receptive to change are essential</p>
2004	<p>Glaken, M., &amp; Chaney, D.</p> <p>Ascertain what Registered Nurses practicing in the Republic of Ireland perceive as barriers to the implementation of research findings in the practice setting and to explore</p>	<p>426 Registered Nurses who enrolled in a nursing focused academic course with Trinity College, Dublin, Republic of Ireland</p>	<p>Not explicitly listed, although follows Rogers' diffusion of innovation</p>	<p>Exploratory, descriptive</p>	<p>BARRIERS to research utilization scale</p>	<p>39.6% response rate (n=169)</p> <p>Eight of the top ten ranked barriers centered around the organization</p> <p>Top barrier was</p>	<p>The Irish Government is committed to provide the people of Ireland with evidence-base health service. This study indicates substantial changes are need to made this commitment a</p>	

	what they perceive would facilitate them in using research findings in their daily practice					insufficient authority to implement research findings	reality
						Facilitators include: Protected time for retrieval and evaluation of research findings, instrumental support from manager, informed supportive personnel in the practice setting and accessible educational opportunities	
Hutchinson, A., M., & Johnston, L.  2004	Gain an understanding of perceived influences on nurses' utilization of research, and explore what difference or	960 nurses working at a major teaching hospital in Melbourne, Australia	Not explicitly listed (although follows Rogers' diffusion of innovation)	Descriptive, exploratory	BARRIERS to research utilization scale	45% response rate (n=317)	Greatest barriers included time constraints, lack of awareness of

	commonalities exist between the findings of this research and those of studies that have been conducted in various countries during the past 10 years					available research literature, insufficient authority to change practice, inadequate skills in critical appraisal, and lack of support for implementation	
LaPierre, E., Ritchey, K., & Newhouse, R.  2004	Explore the perceived barriers to research in a specific PACU setting so that strategies could be planned to improve research use	30 PACU nurses	Rogers' diffusion of innovation	Descriptive, exploratory	BARRIERS to research utilization scale	20 surveys were returned  Greatest perceived barriers were related to attributes of the organization	Subsequently formed a research committee
McKenna, H.,P. Ashton, S., & Keeney, S.  2004	Identify barriers to evidence-based practice in primary care	356 general practitioners and 356 community nurses	Not explicitly listed	Descriptive	Evidence-Based Practice in Primary Care survey (specially designed survey)	General Practitioners ranked barriers differently than community nurses. Most significant barriers to using evidence in practice	Little has been done to identify barriers within primary care. However, identifying barriers is the first step. Extra resources will be needed if these

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						were: the limited relevance of research to practice, keeping up with all the current changes in primary care, and the ability to search for evidence-based information. Community nurses ranked barriers as: poor computer facilities, poor patient compliance, and difficulties in influencing change.	resources are to be tackled.
Olade, R., A. 2004	Identify the extent to which rural nurses utilize evidence-based practice guidelines from scientific research in	106 nurses from various practice areas in six rural counties of a southwestern state in the United	Rogers' diffusion of innovation	Descriptive	Questionnaires with open-ended questions  Focused on current utilization on nursing	20.8% if the participants stated they were currently involved in research utilization (most were nurses with	

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	their practice; to describe both previous and current research utilization activities in which they have participated, and to identify the specific barriers they face in their practice settings	States			research findings	bachelor's degrees)	
					Previous involvement in nursing research activities	Two most common areas of current research utilization were pain management and pressure ulcer prevention and management	
					Participation in medical research activities		
Egerod, I., & Hansen, G., M. 2005	To explore cardiac nurses' attitudes towards evidence-based practice and the types of knowledge they employ in clinical practice	33 head nurses and 51 bedside nurses representing one or two units in each cardiac department in Denmark. n=28	Not specified.	Descriptive and comparative	Postal questionnaire	81% response rate  Respondents had a positive attitude towards evidence based practice, although they relied on personal experience. Head nurses were statistically more familiar	Continuing education is needed for nurses for evidence-based practice to be successful

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						with the concept than bedside nurses and read scientific journals more frequently	
Fink, R., Thompson, C., & Bonnes, D.  2005	Identify changes in nurse attitudes toward research utilization and the organization's research environment pre-implementation of a multifaceted intervention to promote the use of research in practice	Registered Nurses employed at a large university affiliated Magnet hospital  Baseline: 880 surveys distributed  Post-intervention: 890 surveys distributed	Rogers' diffusion of innovation	Descriptive, experimental	BARRIERS to research utilization scale and the Research Factor Questionnaire	Pre-intervention: 24% response rate (n=215)  Post intervention: 27% response rate (n=239)  There was an improvement in nurses' perception of barriers and organizational culture post implementation of the multifaceted intervention. Journal club participation was one of the key strategies	Barriers to research utilization must be modified

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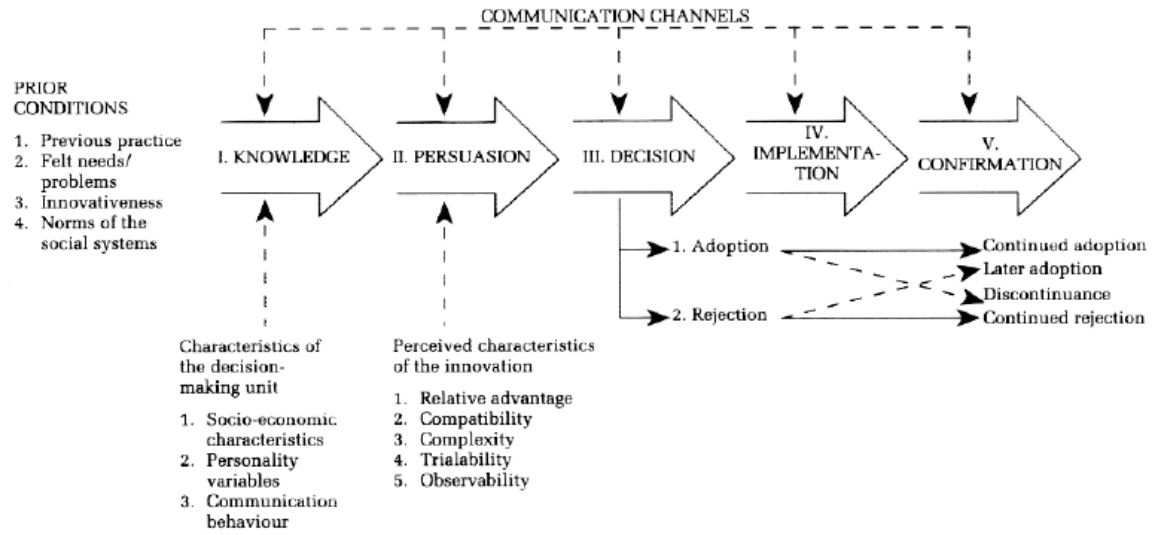
						that facilitated research utilization.	
Pravikoff, D., S., Tanner, A., B., & Pierce, S., T. 2005	Examine nurses' perception of access to tools to obtain evidence and whether they have the skills to do so	Stratified random sample of 3,000 registered nurses across the United States	Not specified.	Descriptive, exploratory	93 item questionnaire	37% response rate  Respondents acknowledged that they frequently need additional information, but feel more confident asking a colleague than using bibliographic databases	Nurses need skill building in terms of research utilization and searching in order for evidence based practice to be successful

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## Appendix B

### Conceptual Map



(Rogers, 1995, p. 163)

## Appendix C

### Permission to Use the BARRIERS Scale

From: Sandy Funk [sfunk@unc.edu]  
Sent: Tuesday, November 01, 2005 6:13 PM  
To: Schoonover, Heather  
Subject: Re: question regarding BARRIERS Scale.

Sure - feel free to administer it electronically.

----- Original Message -----

From: "Schoonover, Heather" <HSchoonover@peacehealth.org>  
To: "Sandy Funk" <sfunk@email.unc.edu>  
Sent: Tuesday, November 01, 2005 7:37 PM  
Subject: RE: question regarding BARRIERS Scale.

I have thought of another question for you. Your website states we need to request your permission for any changes to the BARRIERS Scale. I would like to utilize my employers electronic capabilities to administer the survey to our nursing staff. Initially, I was thinking that this would not be a change to the instrument, but as I am getting ready to put the BARRIERS questions into an electronic format, I realize that it does change the feel of the tool somewhat. There is obvious benefit in utilizing an electronic survey. It is much easier for my staffs. It would take less of their time, and they are used to receiving electronic surveys. It is also much easier for me in terms of data collection. Is this something I could have permission to do? I do not feel it will impact the results, but it does change the look of the tool. Thank you again for your time and feedback.

Heather

-----Original Message-----

From: Sandy Funk [mailto:sfunk@email.unc.edu]  
Sent: Friday, October 28, 2005 2:24 PM  
To: Schoonover, Heather  
Subject: Re: question regarding BARRIERS Scale.

Hi! Feel free to just use the quantitative ones - they are the only ones that are in the final score.

----- Original Message -----

From: "Schoonover, Heather" <HSchoonover@peacehealth.org>  
To: <sfunk@email.unc.edu>  
Sent: Friday, October 28, 2005 4:56 PM  
Subject: question regarding BARRIERS Scale.

Hello. I have downloaded and mailed you the permission/request form to utilize the BARRIERS Scale. I have one question. The description of the item describes it as a 29 items. When I download the scale, it has 35 questions. The last 6 questions look like they would require qualitative analysis. Does the permission to use the device grant me permission to administer the 29 questions, or do I need to administer all 35 questions? Thank you very much for your time and generosity in providing use of the BARRIERS Scale. I have enjoyed reading research that developed as a result of your original research.

Heather Schoonover RN, BSN  
Clinical Education Coordinator  
Training and Development  
PeaceHealth, LCR, SJMC  
P.O. Box 3002  
Longview, Washington 98632  
O: (360) 636-4149 P: (360) 439-0370

## Appendix E

### Participant Demographic Sheet and Barriers Scale

**Directions:**

Click in the circle next to the best choice for the question. Use the scroll bar on the right to move down the page. When finished, click the **OK** button located at the bottom of the survey.

	20-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	>65
Age in years	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Staff nurse	Charge nurse	Administrator	Nurse educator	other
Current role on health care team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Diploma	Associate	Baccalaureate	other
First nursing degree obtained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Diploma	Associate	Baccalaureate	Masters	Doctorate
Highest degree obtained or currently enrolled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Currently certified in a specialty area

- Yes
- No

	1-5	6-10	11-15	16-20	21-25	26-30	greater than 30
Number of years experience as a registered nurse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Full time	Part time	Relief
Current employment status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	White (non-Hispanic)	African-American (non-Hispanic)	Hispanic	Asian	American Indian/Alaska Native	Native Hawaiian/Pacific Islander
Racial or ethnic background	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Journal subscription	Attend conferences	Participate in employer sponsored events
Current participation in continuing education activities (you may select more than one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Articles in nursing journals indicate that nurses in practice do not use the results of research to help guide their practice. There are a number of reasons why this might be. We would like to know the extent to which you think each of the following situations is a barrier to nurses' use of research to alter/enhance their practice. For each item, indicate the number of the response that best represents your view. Thank you for sharing your views with us.

Research reports/articles are not readily available

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

Implications for practice are not made clear

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

Statistical analyses are not understandable

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The research is not relevant to the nurse's practice

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse is unaware of the research

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The facilities are inadequate for implementation

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse does not have time to read research

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The research has not been replicated

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse feels the benefits of changing practice will be minimal

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse is uncertain of whether to believe the results of the research

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The research has methodological inadequacies

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The relevant literature is not compiled in one place

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse does not feel she/he has enough authority to change patient care procedures

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse feels results are not generalizable to own settings

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse is isolated from knowledgeable colleagues with whom to discuss research

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse sees little benefit for self

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

Research reports/articles are not published fast enough

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

Physicians will not cooperate with implementation

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

Administration will not allow implementation

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse does not see the value of research for practice

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

There is not a documented need to change practice

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The conclusions drawn from the research are not justified

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The literature reports conflicting results

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The research is not reported clearly and readably

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

Other staffs are not supportive of implementation

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse is unwilling to change/try new ideas

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The amount of research information is overwhelming

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

The nurse does not feel capable of evaluating the quality of the research

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion

There is insufficient time on the job to implement new ideas

- 1 To no extent
- 2 To a little extent
- 3 To a moderate extent
- 4 To a great extent
- 5 No opinion



◀ Click **OK** to finish the survey.

## Appendix F

### IRB Forms



Research Compliance Office

#### MEMORANDUM

**TO:** Heather Schoenover  
Nursing, WSU Vancouver

**FROM:** Maathi Jandhyala (for) Kris Miller, Chair, WSU Institutional Review Board (3140) *MJ*

**DATE:** 28 November 2005

**SUBJECT:** Approved Human Subjects Protocol - New Protocol

Your Human Subjects Review Summary Form and additional information provided for the proposal titled "Barriers to Research Utilization Among Registered Nurses Practicing in a Community Hospital." (IRB File Number 8445-0) was reviewed for the protection of the subjects participating in the study. Based on the information received from you, the WSU-IRB approved your human subjects protocol on **28 November 2005**.

IRB approval indicates that the study protocol as presented in the Human Subjects Form by the investigator, is designed to adequately protect the subjects participating in the study. This approval does not relieve the investigator from the responsibility of providing continuing attention to ethical considerations involved in the utilization of human subjects participating in the study.

This approval expires on **27 November 2006**. If any significant changes are made to the study protocol you must notify the IRB before implementation. Request for modification forms are available online at <http://www.ojrt.wsu.edu/Forms.asp>.

In accordance with federal regulations, this approval letter and a copy of the approved protocol must be kept with any copies of signed consent forms by the principal investigator for **THREE years after** completion of the project.

Washington State University is covered under Human Subjects Assurance Number FW400002945 which is on file with the Office for Human Research Protections.

If you have questions, please contact the Institutional Review Board at (509) 335-9661. Any revised materials can be mailed to the Research Compliance Office (Campus Zip 3140), faxed to (509) 335-1676, or in some cases by electronic mail, to [irb@mail.wsu.edu](mailto:irb@mail.wsu.edu).

Review Type: NEW  
Review Category: XMT  
Date Received: 21 November 2005

OORD No.: NF  
Agency: NA







January 5, 2006

Heather Schoonover, RN, BSN  
St. John Medical Center  
PO Box 3002  
Longview, WA 98632-0302

RE: Your followup submission of 12/27/2005 regarding study number 05-032: Barriers to Research Utilization Among Registered Nurses in a Community Hospital (WA)

Dear Ms Schoonover:

Thank you for your response to requests from a prior review of your application for the new study listed above. Your study is eligible for expedited review under FDA and DHHS (OHRP).

This is to confirm that your application is now fully approved. The protocol is approved through the revised consent dated 12/27/05, which added PeaceHealth IRB contact information and that it has been reviewed for human subjects participation by PeaceHealth IRB. You must obtain informed consent from all subjects; however, signed written consent is not required.

You are granted permission to conduct your study as most recently described effective immediately. The study is subject to continuing review on or before 12/1/2006, unless closed before that date.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Sally J. Hunt ((541) 686-6949, fax (541) 686-1839, email: [shunt@peacehealth.org](mailto:shunt@peacehealth.org)) if you have any questions or require further information.

Sincerely,

Phyllis Brown, MD  
PeaceHealth IRB Chair

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