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Potential Effects of Institutional Repositories on Nursing Research Dissemination

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To the Graduate Council:

I am submitting herewith a thesis written by Sarah Jane McClung entitled "Potential Effects of Institutional Repositories on Nursing Research Dissemination." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Information Sciences.

Suzie L. Allard, Major Professor

We have read this thesis and recommend its acceptance:

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Accepted for the Council:

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Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

Potential Effects of Institutional Repositories
on Nursing Research Dissemination

A Thesis Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Sarah Jane McClung
August 2012

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ABSTRACT

Institutional repositories (IRs) might be important tools for nursing faculty to utilize as they have the potential to improve research dissemination on a timely basis to the nursing community at large. This topic is worth investigating because the field of nursing has been struggling for many decades to facilitate the relationship between theory and methods by transferring the knowledge gained from nursing research to the approaches used in nursing practice. The recent focus on evidence-based practice in nursing education is proof of the field's attempts at shrinking the information gap between nurse researcher and nurse clinician. Methods for dissemination have mainly focused on oral presentations, traditional publication routes, and poster sessions. IRs are a little researched approach to dissemination for nursing research that could prove to be effective in circulating research in a more timely and less formal way.

By comparing the nursing faculty from a university that has an IR, the University of Tennessee, Knoxville, with a university that does not, Virginia Commonwealth University, one can investigate if the presence of an IR helps to influence the nursing faculty's attitudes and behaviors regarding the dissemination of their research. The presence of an IR could cause nursing faculty to be more likely to consider alternative methods of dissemination, such as open access journals, Web 2.0 applications, and submissions to the IR itself, when constructing their research dissemination strategy. These discovered attitudes and behaviors could help academic health sciences librarians evaluate how to better promote IR usage for nursing or advocate for the creation of an IR.

While the research results of this exploratory study provided many approaches for health sciences librarians to improve IR use by and promotion for nursing faculty, including providing a

reminder system, educational sessions, and technical support, the results suggested that the research culture a university possesses could be the influencing factor for faculty to be more inclined to disseminate their research using open access and alternative dissemination methods rather than the presence of an IR specifically.

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CHAPTER I: INTRODUCTION AND STATEMENT OF THE PROBLEM

In the medical field, it is believed that the most effective patient care is realized by integrating the best research evidence with personalized health services in a timely manner (Dobbins, 2010; Brown & Schmidt, 2009). As a “practice discipline” and an “applied field,” nursing is dependent on a knowledge base that guides clinical practice (Stommel & Wills, 2004, p. 412). For this reason, nursing knowledge “gained through research should inevitably manifest itself in some clinical application” (Montgomery et al., 2001, p. 124). In order to implement the best possible care in the clinical setting, it is the responsibility of each nurse to utilize up to date information in practice (Cronenwett, 1995). Nursing’s recent and evolving focus on evidence-based practice demonstrates the field’s efforts and challenges with the implementation of research. Flynn & Quinn (2010) define evidence-based nursing as “a complex concept that incorporates not only the findings of relevant research but also the context in which nursing is practiced, the needs, values and preferences of patients and clients and individual nurses’ professional expertise and judgment” (p. 600). In short, the advancement of the field and its ability to stay on the cutting edge of healthcare requires the use of research by practicing nurses (Montgomery et al., 2001).

Thanks in large part to technological innovations, the nursing field’s ability to discover, exchange, and execute findings has been greatly increased (Montgomery et al., 2001). The amount of nursing information, most notably the number of nursing journals, has been rapidly increasing over the last three to four decades (Dickson, 1996). Statistics aside, as Dickson (1996) points out, “an increase in the number of journals does not necessarily translate into an increase

in the number of research studies accessed by nurses.” Over time, her observation has been consistently proven to be correct. Despite the increase of nursing research, the use of these findings in clinical settings remains low.

In order to determine why the use of research in practice is not more commonplace despite its well-cited importance and what can be done to increase its use, one must start at the roots of the research-practice gap. The endurance of this gap in the nursing field is attributed to many things, but one reason that is mentioned more than others is the problem of dissemination. Despite nurses’ utilization of different dissemination methods, they often do not attempt to match their research findings with their intended audience nor do they endeavor to find additional methods of dissemination outside of the standard three Ps: presentations, posters, and papers. To improve dissemination, and, subsequently, potentially decrease the research-practice gap, new methods of dissemination must be thoughtfully utilized. The open access movement has created a great number of timely methods that could assist nurses with improving upon these shortcomings. Repositories, specifically institutional repositories, are one of the open access tools that has the potential to progress nursing research dissemination. Additionally, because academic libraries commonly maintain institutional repositories, emphasizing their use opens up avenues for librarians to further assist nurses with their research and its dissemination.

The research-practice gap and research dissemination shortcomings in the nursing field are widely reported. As the open access movement, of which IRs are a part, sweeps academia, the opportunities for nurses to improve these professional deficiencies are growing abundantly. Because an IR is an open access beacon created by and placed within the university itself, its presence could be influential in the ways in which nursing faculty think about and choose to

disseminate their research. Repository use, especially of institutional repositories, within the nursing field has been scarcely researched. Because so little research has been conducted on IRs and the ways in which nurses contribute to, utilize, and are influenced by them, the researcher has designed a study to help fill this gap in the research. Alternative methods of dissemination, such as open access journals, Web 2.0 applications, and submissions to the IR itself, could be utilized more often by nursing faculty who are members of a university that hosts an IR. By comparing the nursing faculty from a university that has an IR with a university that does not, one can investigate if the presence of an IR helps to influence the nursing faculty's attitudes and behaviors regarding the dissemination of their research. These discovered attitudes and behaviors could help academic health sciences librarians evaluate how to better promote IR usage for nursing or advocate for the creation of an IR.

Research Questions

The main research question this study attempts to answer is does the presence of an IR influence the current practices and perceptions of nursing faculty regarding the dissemination of their research. Knowing these current practices and perceptions, how can academic health sciences libraries better approach nursing faculty to contribute to an IR or advocate for creating an IR for nursing research?

CHAPTER II: LITERATURE REVIEW

A solid understanding of the enduring nature of the nursing field's research-practice gap and its related dissemination problems is key to building an argument for the potential value of IRs for nurses. The shortcomings of popular dissemination methods currently used by nurses will aid in this argument, as will the discussions regarding the growing nursing repository research and use. Very little research has been conducted regarding nurses' use of or attitudes towards alternative research methods. The potential for IRs to be as a possible tool to improve nursing research dissemination has also been little explored. The researcher's goal is to build upon this previous research and to continue the conversation to include alternative dissemination strategies that could benefit both nurse researchers and nurse clinicians.

Research-practice gap

Practicing nurses are struggling to match their care with research-supported methods. On the surface, the process of translating nursing research into practice may seem to be straightforward; however, the continual presence of the research-practice gap suggests that this process is not as simple as one may originally think (French, 1999). Montgomery et al. (2001) define research-practice gap as "the discrepancy that exists between what researchers have learned is effective for clinical practice and what providers in direct patient care do with patients" (p. 125). Evidence shows that little consideration is given to evidence-based research and that healthcare decisions are primarily based on the experiences and opinions of the clinicians (Dobbins, Ciliska, Cockerill, Barnsley, & DiCenso, 2002). The research practice gap is a major one: research suggests that there is a lag of eight to 15 years between the time

information is generated and the time it is used in clinical practice. This lag is problematic in healthcare since it can negatively affect patient care and the outcome of their treatment (Dobbins et al., 2002). Thus, the lack of awareness of current research translates into the potential lack of patient care improvement (Montgomery et al., 2001).

There are many reasons why the research-practice gap has endured. Simply having a research policy or recommendation in place in a clinical setting does not make an impact on patient care (Scullion, 2002). When it comes to actively pursuing the use of research, some recurrent problems reported include nurses' lack of time for undertaking research due to taking care of patients, negative attitudes towards research, and information overload (Cronenwett, 1995; Dickson, 1996; Scullion, 2002; Le May, 1999). These issues are small, however, when compared to the two barriers that have been identified as being the most problematic for implementing research in practice: (1) interpretation problems and (2) access or awareness problems (Dickson, 1996). Interpretation problems concern the clinicians' ability to understand research articles. Access and awareness problems refer to the clinician's ability to access relevant research and their awareness of the existence of the research in the first place.

In terms of interpretation, the nursing field's recent focus on evidence-based practice in all levels of education has increased newer clinical nurses' abilities to both understand and perform research, but seasoned practicing nurses still report problems interpreting research results (French, 1999; Montgomery et al., 2001). These older nurses feel uncomfortable with the methods, analysis, and language used in nursing research and do not feel confident critiquing the information they are able to find. This barrier is present "in part ... because researchers tend to write for other researchers" (Funk, Tornquist, & Champagne, 1989, p. 362). There have been

calls to make research articles more user friendly by changing their content so that clinicians will be able to better understand the work of nurse researchers (Cronenwett, 1995; Montgomery et al., 2001; Rassool, 2005). Additionally, it is felt that the research this is being conducted is not clinically relevant and largely useless for practicing nurses (Dickson, 1996).

Even if the clinical nurses can understand the nursing research, there still remains the problem of awareness. Publishing research in even the most respected nursing journals will do little for the profession if practicing nurses cannot gain access to it (Freemantle & Watt, 1994; Cronenwett, 1995). Like solving interpretation problems, a nurse's ability to locate information is a skill that can easily be enhanced by continual education. Additionally, access to major nursing literature and databases can be improved by technology and funding. What if the nursing research is simply not available to be easily accessed in the first place? No amount of training or technology can make the relevant studies be authored and accessible (Montgomery et al., 2001).

Dissemination

Only when nurses publish studies can other nurses access them in some fashion. Because nursing is a research-based field, nurses are constantly developing initiatives to improve patient care. "Nurses identify clinical problems and changes in practice that could improve care, propose new approaches and interventions, implement them, and evaluate changes in processes of care and outcomes related to the interventions" (Oermann, 2009, p. 91). Despite this abundance of research, one study that surveyed 161 nurse researchers revealed that only ten percent had submitted their findings for publication (Dickson, 1996). Even when research is submitted for publication, it is often difficult to get smaller studies published in the top nursing journals

(Oermann, 2009). This lack of publication is even more evident when compared to other medical disciplines. Despite the substantial growth in nursing research, the number of publications still lags behind (Stommel & Wills, 2004).

A large amount of nursing research is conducted by independent clinicians. They are typically small research projects that are completed for educational requirements (Dickson, 1996). Additionally, “[m]any master’s theses and doctoral dissertations become isolated projects that do not clearly fit into a program of research that leads to the development of new knowledge for clinical practice” (Montgomery et al., 2001, p. 125-126). The majority of these independent and educational project results are never reported and, therefore, not included in the pool of nursing knowledge because of their small size and the fact that they are typically underfunded. As a result, these findings are not made known beyond the original clinical setting, limiting the ability of nurses to build on each other's work. Instead, they develop their own strategies for each of their settings although findings from previous research could prove helpful and might minimize the possibility of needing to “reinvent the wheel.” Oermann (2009) notes, “Projects done in one clinical setting can guide nurses' decision making in other settings. We cannot improve care quality with each institution trying out a new solution rather than building on the experiences of others” (p. 91).

One of the reasons clinical nurses publish a low percentage of nursing research is because they lack the time and resources for writing. “It is difficult for nurses to carve time in their busy schedules to prepare a manuscript, particularly when they may have no experience in doing so” (Oermann, 2009, p. 91). However, a more important problem stems from the fact that nurses have historically not recognized the importance of their research findings and the subsequent

need to disseminate their new ideas, proposals, and findings (Oermann, 2009). In fact, it has been argued that “the current way in which research findings are disseminated is the most important contributing factor” toward the research-practice gap (Dickson, 1996).

Dissemination is defined as the “communication of clinical, research, and theoretical findings for the purpose of transitioning new knowledge to the point of care” (Brown & Schmidt, 2009, p. 399). Also referred to as knowledge exchange, transfer, or translation, the principles of dissemination are founded on collaboration and effectual communication (Flynn & Quinn, 2010). New knowledge is spread systematically from the producers to the users so that research findings can be translated into action to improve the health and experience of patients (French, 1999; Freemantle & Watt, 1994).

The four components of dissemination include “the source, the message, the medium, and target users” (Scullion, 2002, p. 70). This study will focus on the medium and the audience, specifically the dissemination of nursing research to other nurses and will not include the dissemination of research to the general public. Research dissemination is considered an essential element of evidence-based practice. It adds value to nursing research because, without dissemination, no one would be able to read about the latest studies (Flynn & Quinn, 2010; Brown & Schmidt, 2009). Despite an increase in nursing research and the subsequent increase in the effort to distribute findings, general awareness of dissemination is pretty low and it is often misconceived to be a passive process (Smith & Mateo, 2009; Scullion, 2002). Often the simple act of distributing findings in some isolated fashion is incorrectly considered dissemination (Scullion, 2002). In this way, dissemination is easily confused with diffusion.

Because simple diffusion is ineffective in the utilization of research findings, it is important to distinguish between diffusion and dissemination (Rassool, 2005). Diffusion is a passive sharing of knowledge whereas dissemination plays a more active role in information sharing (French, 1999). During the process of diffusion, the researchers are minimally concerned with the practitioners and the process of research utilization (Scullion, 2002). Conversely, dissemination acknowledges the social constructs that are present in various contexts and attempts to communicate the findings in ways that a group can easily access it, as well as shape the utilization and translation processes to accommodate the practitioners (French, 1999; Freemantle & Watt, 1994). In this way, “dissemination is more than a two-way process: it is intersectoral, interdisciplinary, and interlinking; it requires capacity and commitment” (Tenove, 1999, p. 98). Relying too heavily on diffusion minimizes authors’ responsibility to considerably report their findings (Scullion, 2002). Thus, dissemination is “a major departure from the 'publish and run' culture” (Scullion, 2002, p. 74).

As a key part of the research process, the dissemination of research is necessary to successfully conclude a research project (Flynn & Quinn, 2010). The cycle of scientific development includes "theory development, research, dissemination, and application to practice” (Brown & Schmidt, 2009, p. 400). The sharing of research is critical to the whole cycle, as nurse researchers are accountable for informing healthcare providers how their findings advance nursing knowledge and, therefore, practice. “Research can reinforce knowledge or uncover new information, and it is important to communicate either outcome to others” (Byrne, 2001, p. 731). Even though it is one of the last phases in the research cycle, it is argued that dissemination should be considered during the initial design stages of research so that the key elements of

dissemination, “source, message, method and target groups,” can be addressed from the beginning to ease the entire process (Scullion, 2002, p. 65). A recommendation of at least twelve percent of a research project’s resources and time should be spent on dissemination (Scullion, 2002). Such a high figure leaves one to believe that dissemination efforts are largely being neglected and that more emphasis needs to be placed on dissemination by all those involved in research funding, the research itself, and implementing research in practice (Dickson, 1996; Scullion, 2002). Leaving the dissemination process until the implementation phase endangers the success and accessibility of research findings (Scullion, 2002). Dickson (1996) surmises that, “Dissemination activities have not been acknowledged as indicators of research performance; perhaps, if they were, their value would be enhanced.”

Dissemination methods

Before discussing dissemination methods, the first step to choosing a method should be considered: audience analysis (Stommel & Wills, 2004). When deciding upon a dissemination strategy, audience is a factor that should be seriously considered. The research study’s “aims, purpose and scale” will determine which strategy is decided upon (Flynn & Quinn, 2010, p. 601). The method(s) selected need to be compatible with the preferences known about the target audience (Scullion, 2002). While taking the extra steps to target research to a specific audience can be problematic and time consuming, the efforts will help to ensure that relevant information is available for the audience so that they can improve their decision making process in the clinical setting (Freemantle & Watt, 1994). Audience analysis should not be considered optional; instead, it is a critical part of any research project design (Scullion, 2002).

It should also be noted that findings have shown that dissemination is most effective when multiple methods are used (Brown & Schmidt, 2009; Scullion, 2002; Dickson, 1996). “[I]n order to ensure that research findings reach the intended audiences it may be necessary to produce and deliver the research message in multiple and varied formats” (Flynn & Quinn, 2010, p. 601). There is no single way of dissemination, “no magic bullet,” that will successfully work for every research dissemination undertaking and intended audience (Freemantle & Watt, 1994, p. 135). If research findings are to be used in the nursing field and their use is to become standard, nurse researchers must continue to utilize the variety of approaches available to them and to continue to discover new ways to disseminate findings (Le May, 1999; Dickson, 1996).

Known as the three Ps, posters, presentations, and papers, have historically been the three primary ways of dissemination and remain as the most popular methods in the nursing field (Brown & Schmidt, 2009; Dudley-Brown, 2012). Poster and presentation dissemination largely occurs through participation in formal research conferences put on by associations and societies (Funk, Tornquist, & Champagne, 1989; Brown & Schmidt, 2009; Rassool, 2005; Flynn & Quinn, 2010; Scullion, 2002; Dobbins et al., 2002). Nursing conferences have consistently been well attended and their importance widely noted (Le May, 1999; Rassool, 2005). Poster presentations, panel presentations, and roundtable presentations are all popular conference forms (Stommel & Wills, 2004; Betz et al., 2011). On a smaller, less formal scale, group presentations, such as evidence-based grand rounds and evidence-based clinical rounds commonly take place in clinical settings (Betz et al., 2011; Dudley-Brown, 2012). Consultations and mentoring can also be considered a form of oral dissemination (Betz et al., 2011; Le May, 1999).

A general advantage to face-to-face oral communication for dissemination is that nursing has a strong oral tradition based on the fact that “the very essence of practice appears to revolve around interpersonal interaction” (Le May, 1999, p. 55). For educational activities, active techniques are considered to be better than passive methods, mostly due to the possibility of direct and immediate interaction between presenter and audience (Scullion, 2002; French, 1999). This interaction can increase the dialogue between nurse researchers and practicing nurses (Funk, Tornquist, & Champagne, 1989). An additional advantage of presentations is that they can be utilized for dissemination of research findings while the author is waiting for publication (Holtzclaw, Kenner, & Walden, 2009).

A general disadvantage to oral dissemination can be the expenditure, as enabling the presenter and audience to be in the same location can be cost prohibitive (French, 1999). To the disadvantage of conferences, evidence shows that dissemination methods involving personal, one on one contact with the receiver(s) of the information are more effective than those in group settings (Dobbins et al., 2002). The content of conferences is also criticized. The varied topics can cause a fragmented view of current research areas (Funk, Tornquist, & Champagne, 1989). Research presented is often not directly related to practice as the presentations are usually directed to other researchers and not clinicians; therefore, making conferences not as useful for clinicians (Funk, Tornquist, & Champagne, 1989; Cronenwett, 1995).

The last P, papers, deals primarily with traditional publications. Formal, professional nursing journal articles are commonly considered to be the most popular form of dissemination in the field (Funk, Tornquist, & Champagne, 1989; Dickson 1996; Stommel & Wills, 2004; Flynn & Quinn, 2010; Forbes & Phillipchuk, 2001). Informal articles in lay publications, such as

newsletters, newspapers, and magazines primarily published by nursing organizations and societies, are also widely distributed and read by clinicians and researchers alike (Stommel & Wills, 2004; Smith & Mateo, 2009; Forbes & Phillipchuk, 2001; Montgomery et al., 2001; Flynn & Quinn, 2010). Nursing research is often summarized in these publications into more user-friendly and practical formats, such as systematic reviews and fact sheets, that assist practicing nurses with accessing, understanding, and utilizing research (Montgomery et al., 2001; Scullion, 2002; Forbes & Phillipchuk, 2001).

Scientific journal articles are considered to be “the gold standard for dissemination” because of their wide distribution and ease of retrievability through databases like Medline and CINAHL (Cumulative Index of Nursing and Allied Health Literature) (Holtzclaw et al., 2009, p. 125). In this way, a large number of nurses can be influenced by the single effort of writing an article (Smith & Mateo, 2009). Written publications are also considered to be a more familiar, permanent, and durable form of dissemination and, for these reasons, have the potential to contribute more to long term nursing scholarship (Holtzclaw et al., 2009; French, 1999).

Some disadvantages to utilizing print for nursing research dissemination include the amount of research that gets published, the time lag involved, and the mismatch of audiences. The amount of nursing research that is published in journals is a small portion of the number of studies that are actually conducted in the field. Whether it is a result of the researchers’ disinterest or inability to author an article, the journals’ unwillingness to publish the studies, or a combination of both is not entirely clear. The gap between the execution of the research and its publication can be two or three years; a sizable time lag for health sciences information. Lastly, the majority of nursing research that is published is featured in research journals that are read

predominately by nurse researchers and not clinicians, the target audience of most nursing research. Nurse clinicians are more likely to read “practice-oriented journals” and lay publications (Funk, Tornquist, & Champagne, 1989, p. 362).

Books and book chapters, while obviously also types of publications, are not frequently cited as methods of dissemination for nursing research. This omission is most likely due to, compared to journal articles, the even longer amount of time it takes to produce a book-length work and the limited physical and database distribution of books and their chapters (Holtzclaw et al., 2009).

Besides the three Ps of dissemination, there has been some discussion of additional methods of dissemination. Continuing education is identified by practicing nurses as one of the most common approaches for learning about research (Freemantle & Watt, 1994; Bonnel 1994). Attendance at educational programs, such as research and professional seminars and workshops, is highly encouraged or even mandatory for the nurses to keep abreast of trends and technologies (Rassool, 2005; Flynn & Quinn, 2010). In this way, information can easily be shared with clinicians in a timely manner (Bonnel, 1994). Journal clubs, either in person or online, are also popular in clinical settings (Betz et al., 2011; Rassool, 2005; Dudley-Brown, 2012).

Over the last few years, increased attention is being paid to electronic, specifically web-based, ways to disseminate nursing research (Flynn & Quinn, 2010). Producing an online version of a journal article has the advantage of being longer than a print article and including supplemental material that can either not be printed easily or is not considered appropriate for the print publication. Many journals limit the number of pages an article can be. The online version of the article can work around this restriction and publish the full work electronically (Oermann,

2009). Examples of additional article materials that can be added online include “a lengthy appendix, a podcast, hyperlinks from the print article’s reference list to the actual reference, a PowerPoint presentation, and photos” (Smith & Mateo, 2009, p. 444). Outside of the framework of traditional, formal publications, many online, open source tools can be used to produce vehicles for informal research dissemination. Vodcasts, aforementioned podcasts, forums, user groups, listservs, social media, wikis, creating content for websites and blogs, and commenting on websites and blogs are just a sampling of options available for researchers online (Betz et al., 2011; Smith & Mateo, 2009). The rise in web-based tools has subsequently highlighted the importance of multimedia for the dissemination of health science research (Flynn & Quinn, 2010).

There are many advantages to utilizing online and open source tools for research dissemination. Considerable time, money, and effort are saved by, not only authors, but reviewers, editors, publication staff, and the audience as well when they chose paperless options to publish and access studies. With the use of technology, the dissemination of information can be instantaneous if the author so chooses. Web-based tools also enable the ability to easily edit or update content, link related content by the use of hyperlinks, and create a dialogue between the reader and author through email, blog comments, and tweets (Smith & Mateo, 2009).

Regardless of the method, the use of research in the clinical setting will only be successful if it is in an environment that is supportive. “The work culture should support the sharing of research findings through role modeling by leaders and through positive comments about research dissemination activities at the time of performance appraisal” (Cronenwett, 1995, p. 436). Because it has been argued that the organizational climate and the processes used by

organizations to implement research are more important than the individual nurses' knowledge of research, the cultivation of an environment that encourages research use is imperative in the quest for evidence-based practice (Rassool, 2005).

Repositories as a way to improve dissemination

A bleak picture of the nursing profession is produced by focusing on nurses' shortcomings in disseminating their research findings and their under-utilization of available information (Le May, 1999). Despite an increase in the quality of nursing research and the subsequent increase in the effort to use multiple methods to disseminate research findings, the current state of nursing research dissemination is far from the ideal model (Smith & Mateo, 2009; Montgomery et al., 2001). "Research conducted by nurses, disseminated to broad populations of health care providers, and then used by nurses who provide direct care to patients, represents the ideal triad of research-based clinical practice" (Montgomery et al., 2001, p. 125). The continued breakdown of nurse clinicians to effectively utilize research in practice in a timely and consistent manner has been explained in a variety of ways; however, most of these explanations include the inadequacy of current nursing research dissemination methods. "[I]f nursing research is to make a difference in practice, changes must be made in both the kind of information disseminated and the medium of communication" (Funk, Tornquist, & Champagne, 1989, p. 363).

One reason for the flawed flow of information is the organizational and professional barriers put in place that researchers must work around. To acquire higher academic status and to receive funding from their institutions, researchers are, if not expressly required, heavily pressured, to publish in traditional peer-reviewed journals. The traditional formal publication

process takes more time and effort to accept and publish research findings. “This pressure influences not only the nature of the research that they carry out, but also the language in which the research is reported” (Dickson, 1996, p. 9). These barriers have caused major bottlenecks at all stages of research dissemination (Tenove, 1999). It is argued that nursing researchers will not stray from the traditional routes and embrace informal and open access dissemination until institutions recognize the importance of publishing for clinicians and researchers can then receive promotions for publishing in less formal ways (Forbes & Phillipchuk, 2001). Regardless of institutional support, disseminating research in less formal ways could alleviate both the time gap and access issues that nursing research dissemination has continually encountered (Le May, 1999). Embracing the aforementioned multiple format approach to dissemination could assist those nursing researchers concerned about academic promotions until a paradigm shift occurs.

As far back as 1990, there has been support for one open access approach, the repository, for nursing research (Aaronson). While Aaronson and her advocates have argued for a national nursing repository, “dissemination occurs at multiple levels” (Dudley-Brown, 2012, p. 244). Dissemination emanates outward, starting at the specific site of the original research. The next level is the institutional level, followed by the external level. Whether it be local, regional, national, international, or all four, the external level encompasses any dissemination that occurs outside of the institution, depending on the nature and content of the research (Dudley-Brown, 2012; Rassool, 2005). The importance of institutional and local level dissemination is important because clinicians need information that is relevant and adapted to their specific environment. This information is rarely available in traditional scholarly communications (French, 1999; Forbes & Phillipchuk, 2001).

As knowledge most often filters down from academic research to clinical nurses in order to initiate change in practice, this method of open access research dissemination, the repository, should also originate in an academic setting (Rassool, 2005). Further, because academic libraries are so closely associated with research, are traditionally the first location for academics and healthcare professionals to access research, and have already been experimenting with institutional repositories (IRs) for a number of years, these libraries prove to be an excellent location for nursing research to be included in a repository (Freemantle & Watt, 1994, p. 134). An IR is a type of digital library or digital receptacle that includes full-text work in any stage of development that is written by faculty members who teach at a particular university. As part of an IR, nursing research can be disseminated in an informal way to meet the needs of both nurse researchers and practicing nurses. The information can be disseminated on all levels of dissemination, according to the content of the research. IRs could provide the common ground for and interaction between practicing nurses, nurse researchers, and those who enable the availability of research that is needed for increasing nursing research dissemination and, subsequently, closing the research-practice gap (Dickson, 1996; Scullion, 2002).

Nursing repository research and use

Very often, mention of nursing research dissemination was slipped into one of the last chapters in nursing research and evidence-based practice textbooks. Tips on how to write an effective paper, present with confidence, and create an eye-catching poster were pretty much the limit to their information. Few sources went beyond the three Ps, especially the older resources. Repositories for nursing use were first mentioned in the 1990s in a limited number of articles. Some of the newer chapters and articles began to discuss dissemination modes made available by

the rapidly evolving nature of the web and the proliferation of open access. Along with the ubiquitous nature of the web and the call for open access, discussions of repository use for nursing began again in two different forms: repositories for electronic theses and dissertations and institutional repositories. Again, very few researchers have approached the subject.

Aaronson first argued the use of repositories for nurses in 1990. Her chief concern was creating a national nursing repository for the data that has accumulated from nursing research studies. She states that,

If a national repository of nursing data existed to house and disseminate the data from these and other studies, it could enhance the value of the original investment, provide opportunities for many researchers to explore problems they might otherwise be unable to pursue, and substantially move nursing research and science forward. (p. 312)

Since “serious investigators often accumulate more data than they can use,” the excess could surely be used by other nurses who do not have the resources to collect their own original data (Aaronson, 1990, p. 311). The datasets could be used for and combined with additional studies that shed a different or longitudinal light on the statistics. Lastly, Aaronson (1990) points out that placing nursing data that is federally funded in a repository places the information in the public domain, an obligation for federal funding.

Estabrooks and Romyn (1995) agreed with and continued Aaronson’s idea of sharing nursing data in a national repository. They warned that if nurses do not understand the advantages of data sharing, “it is unlikely that nurse researchers will begin to integrate plans for it into their research programs or press for the infrastructure required to enable data sharing” (p. 78). One wonders if this lack of understanding is what prevented a national repository to come to

fruition. They reiterated many of the advantages of a repository mentioned by Aaronson and included the possibility of incorporating multimedia in a repository. Estabrooks and Romyn (1995) presented a more balanced view of a repository by discussing many of the hurdles involved in creating one. They touched on the reluctance of researchers to share their data: “The challenge for nursing is to demonstrate that such academic rewards as tenure and publication are better promoted through sharing rather than amassing and storing data” (p. 80). Data ownership issues, the need to plan for data sharing during research development, funding issues, and using existing data repositories to house nursing research are all included and predate the same issues surrounding today’s institutional repositories (Estabrooks & Romyn, 1995).

Discussions regarding nurses utilizing a more specific type of repository, the electronic theses and dissertations (ETD) digital archive, began in 2004. Goodfellow (2009) defines an ETD as “a master's thesis or a doctoral dissertation that is archived and circulated electronically rather than archived and circulated in the traditional print and bound format” (p. 160).

Goodfellow’s (2004) chapter touches on the advantages to ETDs and how to create a repository for them. Some of the advantages she cites include immediate access, the ability to reach a wider audience, multimedia capabilities, and the ETD’s position as a marketing tool for both the student and university. The student can include a link to the ETD in his or her resume so that a potential employer can evaluate the candidate’s skills and interests prior to an interview. For the school itself, housing an ETD archive could help promote “university name recognition, the quality of the research produced, and the prestige that often accompanies research” (Goodfellow, 2004, p. 28). Goodfellow (2004) also mentions that nursing scholars are quickly recognizing the

value of ETDs as these repositories allow them to view the most up to date research in a timely manner.

Goodfellow continued her research on ETDs in 2009. She found that lack of research continues about nursing research in ETDs and that they continue to be underutilized:

It is not known how frequently ETDs from graduates of schools of nursing are searched, retrieved and then utilized by nurse scholars ... This may be because most nurses are not familiar with ETDs unless they specifically work with masters or doctoral students from universities requiring ETDs. (p. 160)

Additionally, she stated that American universities have been slower to initiate ETDs than international universities. Goodfellow (2009) expanded upon her listing of advantages by mentioning ways that ETDs can reach beyond just nurse researchers. For example, faculty can utilize ETDs in classroom discussions and assignments about research frameworks and methods. Goodfellow (2009) also discusses the disadvantages to paper theses and dissertations. Print copies are less known, more costly, less retrievable, and take more time to both be produced and retrieved compared to ETDs. For these reasons, “ETDs are 100 times more likely to be circulated than traditional print and bound copies of theses or dissertations” (Goodfellow, 2009, p. 160).

Goodfellow (2009) advocated that ETDs contribute to the dissemination and preservation of nursing knowledge by improving graduate nursing education, increasing the availability of research, reducing the cost of dissemination, and advancing the technology of digital libraries. Continued use will only increase the value of ETDs and assist in bridging the nursing research-practice gap.

Macduff (2009) discussed placing ETDs in IRs instead of their own separate repository. He took ETD research a step further by conducting a study of nursing research dissemination with the use of ETDs. He emailed a link to his own ETD to relevant contacts and lists as well as posted a link to it on his own website in order to see how many hits his ETD would receive over a six month period. Based on the impressive number of hits he received during his study, he concluded that it “clearly demonstrates the dissemination power of housing an e-thesis within an IR and actively promoting it via email and the world wide web” (p. 1016). Macduff (2009) viewed ETDs as a better alternative for dissemination of graduate research over the traditional publication route where a thesis or dissertation needs to be reworked in order to be appropriate for publication. He argued that housing theses and dissertations in IRs is more advantageous than posting them on personal websites because the university has higher web visibility due to its conformity to cataloging standards. Additionally, there are many online portals that enable one to search across open access IRs. Macduff (2009) concluded that universities need to support nursing scholars’ use of ETDs and IRs as well as conduct more studies on their use so that they can be further improved upon.

Lastly, Krevit and Crays (2007) specifically discussed the importance of developing an IR, free of content constraints, such as the aforementioned ETDs, for nurses. They detailed a pilot program of a multi-institutional repository for the Houston Academy of Medicine and the University of Texas School of Nursing. They explained how the use of a repository would meet the School’s needs:

To address critical nursing shortages and extend their reach, faculty, researchers, and clinicians at the SON are creating a new pedagogical environment that includes e-

learning, archived streaming video, and other educational technologies. The concept of the institutional repository fits this new paradigm very well. (p. 119)

The needs of the University of Texas's School of Nursing are similar to many schools of nursing across the country and their shift to embracing technologies that enable e-learning is not unique. Therefore, it is likely that IRs can fit other nursing programs' paradigms as well. For example, the University of Tennessee has created an IR called Trace (Tennessee Research and Creative Exchange) and upon searching the IR, the researcher discovered over 200 items that had been submitted by nursing faculty. This level of participation suggests that a number of nursing faculty see the educational value in disseminating their research through these electronic means.

IRs are a little researched approach to dissemination for nursing research. As a type of open access tool, the presence of an IR could cause nursing faculty to be more likely to consider alternative methods of dissemination, such as open access journals, Web 2.0 applications, and submissions to the IR itself, when constructing their research dissemination strategy. By comparing the nursing faculty from a university that has an IR with a university that does not, one can investigate if the presence of an IR helps to influence the nursing faculty's attitudes and behaviors regarding the dissemination of their research. These discovered attitudes and behaviors could help academic health sciences librarians evaluate how to better promote IR usage for nursing or advocate for the creation of an IR.

CHAPTER III: RESEARCH METHOD

The exploratory study used mixed methods to address the two research questions: “Does the presence of an IR influence the current practices and perceptions of nursing faculty regarding the dissemination of their research?” and “Knowing these current practices and perceptions, how can academic health sciences libraries better approach nursing faculty to contribute to an IR or advocate for creating an IR for nursing research.” An online survey with both open- and closed-ended items was distributed to nursing faculty at two universities to quantitatively assess nursing faculty’s attitudes and reported behaviors. These results were then split and compared two ways, by school and by faculty rank. A qualitative content analysis of dissemination methods in research output histories was used to compare the actual dissemination methods used by the faculty members with their reported behaviors found in the survey results. Additionally, the researcher evaluated the contents of an IR and compared these findings with the reported behaviors found in the survey results and the content analysis of the research output histories.

Population and sample

The population consisted of 93 full-time nursing faculty members from two universities, one with an IR and one without. Specifically, these universities were the University of Tennessee, Knoxville (UT) in Knoxville, Tennessee and Virginia Commonwealth University (VCU) in Richmond, Virginia. These two universities are both public, research-intensive universities and have similar sized nursing faculties with both schools of nursing located on the same campus as the universities’ hospitals. The faculty were organized into three groups according to their rank: collateral, tenure track, and tenured. All non-tenured faculty, including

clinical instructors, were considered to be collateral faculty. The researcher decided to use the term collateral because the nurses that were interviewed during the pilot testing used the term and it is a part of VCU faculty vocabulary. Table 1 provides a breakdown of each university's nursing faculty. All full-time faculty members from each university received the questionnaire. A third of each faculty was randomly selected for evaluation of their curriculum vita (CV) by the researcher. In the case of not receiving a requested CV, the researcher searched for the faculty member in CINAHL (Cumulative Index of Nursing and Allied Health Literature) and Google School, as well as the selected publications listed on the university websites to determine a research output history. Additionally, the researcher searched for all UT nursing faculty in UT's IR, Trace (Tennessee Research and Creative Exchange).

Instrumentation

The primary research instrumentation chosen for the quantitative portion of the research design was a questionnaire. The questionnaire was open for faculty to fill out online for 10 days. It consisted of 40 questions with 21 close-ended questions and 19 open-ended items. Branching logic was applied to the majority of non-demographic questions, so not all questions were asked of all respondents. The questionnaire can be found in Appendix A.

The researcher also randomly selected a third of the population from which to request CVs so that she could evaluate the actual dissemination methods used by the faculty members and compare them with the reported behaviors in the survey results. The researcher requested CVs from 31 faculty members, 18 from UT and 13 from VCU. Only 12 CVs were sent to her. The remaining research output histories were determined by searching for the faculty in CINAHL and Google Scholar, as well as the selected publications listed on the university websites.

Table 1. University faculty figures

University	Collateral	Tenure Track	Tenured	Total
UT	27	12	14	53
VCU	7	18	15	40

Additionally, the researcher searched for all UT nursing faculty in Trace so that the number of faculty with items in Trace could be compared to the reported behaviors found in the survey results and the actual behaviors found in the research output histories.

Procedures

The procedures the researcher followed for data collection were multistep. She collected the names, email addresses, and positions of the nursing faculty members from both of the schools' websites. Next she created the online survey and composed the survey invitation emails that included informed consent. The email can be found in Appendix B. After the researcher received IRB approval from UT, she sent the survey invitations and randomly selected a third of the faculty and emailed them an additional request for their CVs. This CV request email can be found in Appendix C. Assistance was sought from VCU's dean of the School of Nursing and an associate dean at UT's College of Nursing to encourage their faculty to participate in the study in order to improve the response rates. Both of them obliged and emailed their faculty for the researcher. At the end of the research study period, the researcher searched the selected publications listed on the university websites, CINAHL, and Google Scholar for the faculty from

which she failed to receive CVs. In order to determine if the journals in which the faculty members had published articles were open access, the researcher searched for the journal titles in the Directory of Open Access Journals. She also searched for all of the UT faculty members in Trace for authored items. Research output histories and Trace items were limited to the last ten years to reflect the timeframe that was given in the survey questions. As each portion of the research was collected, she input the results into the appropriate program for analysis.

Pilot testing

The researcher reviewed the survey questions with one nursing faculty member at UT and two nursing faculty members at VCU to ensure that they are understandable and used the correct nursing language. Based on this feedback, the questionnaire was edited accordingly.

Data management

REDCap (Research Electronic Data Capture), a web-based survey and database software, was used to create and distribute the online questionnaire. Once the data collection was closed, the data was exported to SPSS. All received CVs were downloaded to a password-protected computer located in a locked office. The research output histories and Trace analysis results were compiled in Excel spreadsheets. Faculty members were given a number identification in a key created in a separate Excel file. These numbers were used in the research output histories and Trace analysis spreadsheets so that no identifiable information was included and the names of faculty could not be linked with the data collected. Access to the data was restricted to the researcher and her committee.

Limitations

Limitations of the study included the small size of the population, the fact that it only included two schools, time restrictions, and lack of contact with the nursing faculty. Since the size of the population was only 93 and encompassed two universities, the results of the study may not be representative of the larger academic nursing population. The research study was only open to the faculty members for 10 days. A higher response rate, especially for receiving the requested CVs, may have been possible if the faculty were given more time to complete the study. Additionally, if the researcher had better contact with more of the faculty members, it is possible that the faculty could have been more inclined to answer the questionnaire and or share their CV with a familiar face. Approaching the majority of them as a stranger could have deterred some of the faculty from participating.

Data analysis

Once the data collection was complete, the open-ended and scaled survey questions were coded. Demographic information was reported in aggregate so individuals could not be identified. The survey results were then split according to university so that the results could be compared to see if any differences between the schools could suggest that the presence of an IR has any influence on nursing faculty's attitudes and behaviors regarding the dissemination of their research. Results were also split according to faculty rank in order to determine if rank causes differences in dissemination attitudes and behaviors. Results from the research output histories and Trace analysis were compared with the survey results to either further support the survey findings or to point out differences between reported behaviors and actual behaviors. Research results were organized by the topics addressed by the survey questions to aid in identifying patterns, themes, and similarities.

Data coding

In order to aid in data analysis, the researcher coded open-ended and scaled survey questions. For the open-ended survey questions that asked for lengths of time, the researcher coded the answers so that they were grouped into increments of five years. The exception was for the length of time faculty members have worked at their respective universities. The researcher divided responses up by less than seven years, seven years, and more than seven years to account for the length of time needed to obtain tenure. For the remaining open-ended questions, like answers were grouped according to keywords identified from the text of the responses.

For scaled questions regarding how frequently the respondents had conducted and disseminated research, the researcher created the scale based on conversations the VCU nursing liaison librarian has had with nursing faculty. Faculty had expressed that tenure track and tenured faculty are expected to produce at least two journal articles a year. The researcher thus defined the research frequency scale as such: never (zero research studies), occasionally (averaging one research study a year), frequently (averaging more than one study to two studies a year), and very frequently (averaging over two studies a year).

For the remaining scaled questions, respondents were asked their opinion about a number of topics and to respond on a scale from 0 to 100 with 0 labeled as “not at all,” 50 labeled as “neutral,” and 100 labeled as “absolutely.” REDCap’s slider, or scaled, questions are created on a scale of 0 to 100, so the researcher had no choice but to use this scale. She divided the responses in the following way: answers falling between 0 and 20 were categorized as “not at all,” answers falling between 21 and 40 were categorized as “no,” answers falling between 41

and 60 were categorized as “neutral,” answers falling between 61 and 80 were categorized as “yes,” and answers falling between 81 and 100 were categorized as “absolutely.” The researcher felt that dividing the scale into five even parts would enable a fair representation of the range of opinions possible between “not at all” and “absolutely.”

CHAPTER IV: RESEARCH RESULTS

Despite the small population size of the study, some themes could be gleaned from analyzing the results from the data collection of this exploratory study. The three-way evaluation of nursing faculty practices enabled the emerging trends of reported behavior in the survey results to be checked against the actual behavior discovered by the researcher in the research output histories and Trace evaluation. The assumptions that alternative dissemination methods would be more commonly used and more widely accepted among UT faculty were not always proven correct. The faculty were also organized by rank since the goals of dissemination differ according to what stage a faculty member is in professionally. In this way, the results were also stratified. Although faculty rank did play a part in usage and attitudes, collateral faculty often did not perceive the opportunities an IR could provide for them, as was anticipated.

Demographics

Out of the 93 faculty members to whom the survey was emailed, 20 UT faculty and 13 VCU faculty responded, giving the researcher an overall response rate of 35.5%. UT's response rate was slightly higher than VCU's. A stratified look at the breakdown of respondents can be found in Table 2. The majority of responses were from tenured faculty. It should be noted, however, that out of the tenured faculty, only three responses were from VCU. This lack of response from VCU tenured faculty could be for a variety of reasons. One such reason may be that, because they have already achieved tenure and made the most fervent efforts to disseminate their research as best as they could in order to achieve promotion, they did not see the value in responding to a survey about research dissemination. Coupled with the fact that VCU does not

have an IR, confusion regarding the subject matter could account for a further decrease in interest.

The respondents were closely split between those who have worked at their respective universities for less than seven years and those who worked more than seven years: 18 faculty members have worked less than seven and 15 faculty members have worked more than seven years. No respondents have worked exactly seven years. The seven-year mark is an important and telling mark because seven years is the traditional time length needed to achieve tenure at a university. Over 60% of both UT and VCU faculty members reported that they have been conducting research for 0-15 years.

Table 2. Stratification of survey responses

Faculty Rank	Total Population	Number of responses	Percentage who responded
Collateral	34	11	34.4%
Tenure Track	30	8	26.7%
Tenured	29	14	48.3%

Research and dissemination behavior

In the first section of the survey, respondents were asked how frequently they have conducted research and disseminated it over the last ten years. When looking at both the universities as a whole and the results broken down by rank, faculty members across the board disseminated less than they researched. These findings reinforce the observations that were made by Dickson (1996), Oermann (2009), and Stommel and Willis (2004) regarding nursing dissemination lagging behind. As demonstrated in Figure 1, UT faculty have a wider gap between their research figures and their dissemination figures, but VCU faculty also demonstrate the trend to disseminate less, even if it is only by a marginal difference.

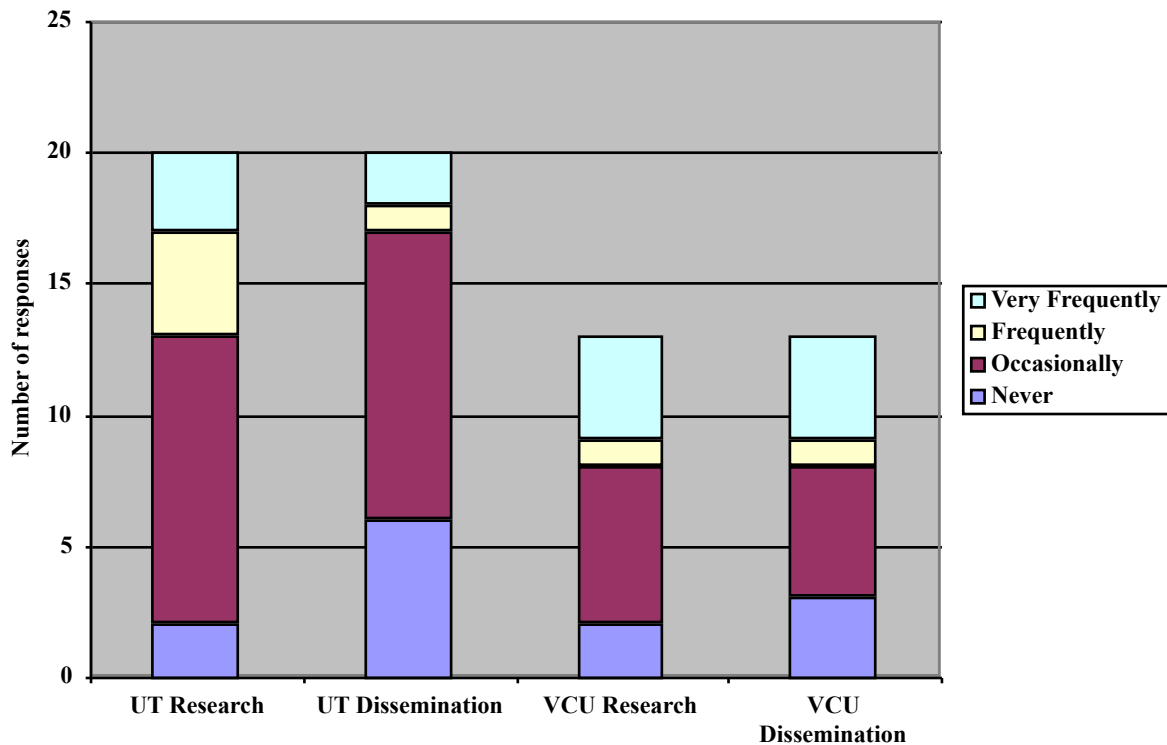


Figure 1. Research frequency versus dissemination frequency by university

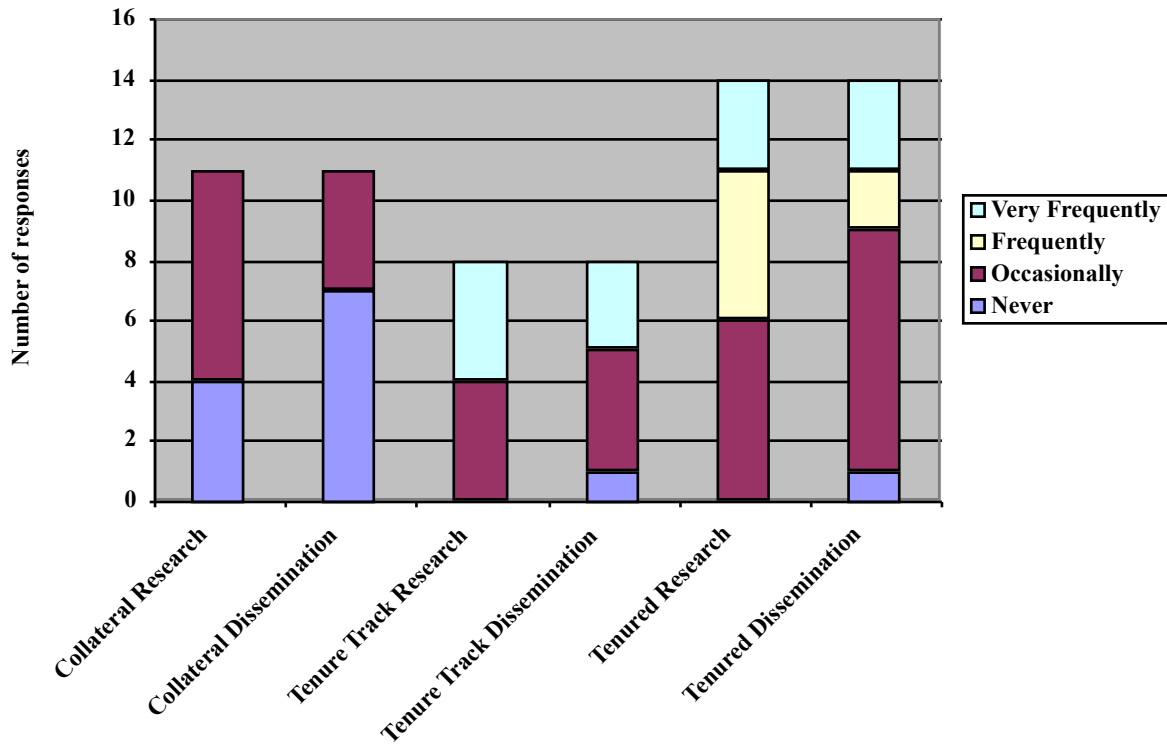


Figure 2. Research frequency versus dissemination frequency by rank

Figure 2's stratified results reinforces the consensus found in the literature review that collateral faculty do in fact conduct research, but disseminate it less compared to tenure track and tenured faculty (Dickson, 1996; Oermann, 2009). It should be noted, however, that one tenure track and one tenured faculty member stated that they have not disseminated research over the last ten years, despite all tenure track and tenured faculty stating that they have conducted research. This lag in dissemination is therefore not just an issue for collateral faculty.

These differences between research conducted and research disseminated are not necessarily negative findings for the field of nursing and could be accounted for by many explanations. It cannot be expected that all research will be or should be disseminated. Some

research studies do not amount to significant findings or are simply not fit for dissemination to a wider audience. When failure to disseminate does come down to the researcher, however, the survey respondents listed the following as barriers they encounter while attempting to disseminate research: time constraints, competition, fees, copyright, reviewers, poor collaborations, lack of experience, resources, page limits, lack of options for their type of research, and difficulty writing. Far and away, the most common barrier, mentioned by over 50% of respondents, was time.

When asked how they typically disseminate their research, over 75% of faculty members mentioned peer-reviewed journals, over 30% mentioned conferences, and one faculty member included manuscripts. These findings are in close alignment with the traditional methods of dissemination most commonly used by nurses that were discussed in the literature review (Brown & Schmidt, 2009; Dudley-Brown, 2012).

IR familiarity

When asked if they were familiar with IRs, 70% of UT and only 38.5% of VCU faculty members answered that they were. This difference is not surprising given the fact that UT has an IR and VCU does not. Stratified results showed that over 60% of both tenure track and tenured faculty were familiar with IRs while only 45.5% of collateral were. Again, this difference is not unforeseen since collateral faculty traditionally conduct less research than tenure track and tenured faculty and, therefore, would not be as familiar with different ways to disseminate research.

Both university faculties were asked if their school had an IR. 65% of UT faculty knew that their university did have the technology. No UT respondents thought that their university did

not have one, but seven were unsure. When asked specifically about Trace, 75% of UT faculty had heard of it. Out of the five UT respondents that had never heard of Trace, four were collateral and one was surprisingly a tenured faculty member. The difference in UT faculty knowing what an IR was and what Trace was suggests that some faculty members do not recognize Trace as being an institutional repository. It is not surprising that the majority of those UT faculty that had not heard of Trace were collateral faculty members since, as previously mentioned, they traditionally do less research.

The majority of VCU faculty were unsure whether or not their university had an IR. Three VCU collateral faculty members incorrectly thought that their university had an IR. The researcher is unsure as to why these respondents thought that VCU had an IR as nothing similar, to her knowledge, is available at VCU with which they could confused it. Perhaps they simply just assumed that VCU had one since they had heard of the technology. Only three VCU faculty members knew that VCU did not have an IR.

When asked if any university where they previously worked or studied had an IR, over 60% of UT and VCU faculty answered “no” or “unsure.” Out of those who responded that a university where they previously worked or studied had an IR, only one faculty member at UT and only one faculty member at VCU stated that they had submitted something to those IRs. Neither of these faculty members was collateral. These low numbers are to be expected since IRs are relatively new tools. It is possible that the VCU faculty member that stated that he or she had submitted something to another IR could be influenced by that past action in regard to the dissemination of his or her research while working at VCU.

Trace

The seven faculty members who responded “unsure” to whether or not UT had an IR were excluded from the following questions that pertained to IR submissions, thus decreasing the number of respondents to 13. Out of the 13 that knew that UT had an IR, five faculty members stated that they had submitted something to it: one tenure track and four tenured. No collateral faculty members stated that they had submitted to the IR. To test these numbers, the researcher searched for all 53 of the UT nursing faculty in Trace. 20 or 37.7% of faculty had at least one item listed in Trace that was published in the last ten years. This figure matches very closely with the 38.5% of survey respondents who stated that they have submitted to Trace, confirming that the respondents’ answers were representative of the entire faculty. Stratified results of the number of faculty members that had items in Trace can be found in Figure 3. These results conform to the previous conclusions that have been drawn about collateral faculty research behaviors.

The items UT respondents identified as having been submitted to Trace include research results, articles, a CV, and abstracts. It is disappointing, but not surprising, that none of the faculty members had taken advantage of the multimedia capabilities IRs offer. When asked why they submitted these items to the IR, respondents mentioned that the potential for increased use, distribution, and visibility of their research, as well as the ability to create a place where their research interests could be better publicized, were draws to the technology. One faculty member did state that the reason he or she submitted an item to Trace was because of a requirement to do so during a Trace training session. When asked if they would submit to the IR in the future, three out of five faculty members answered that they would. One faculty member clarified his or her assertion by stating that he or she would submit again because his or her items were frequently

accessed. The one faculty member that stated that he or she would probably not submit again alleged that he or she did not have the time to. The last remaining faculty member did not answer the question. While the number of respondents was small, it is encouraging that the majority of IR submitters would submit again because they have a good understanding, and in some cases, first hand experience, of the advantages to using the tool.

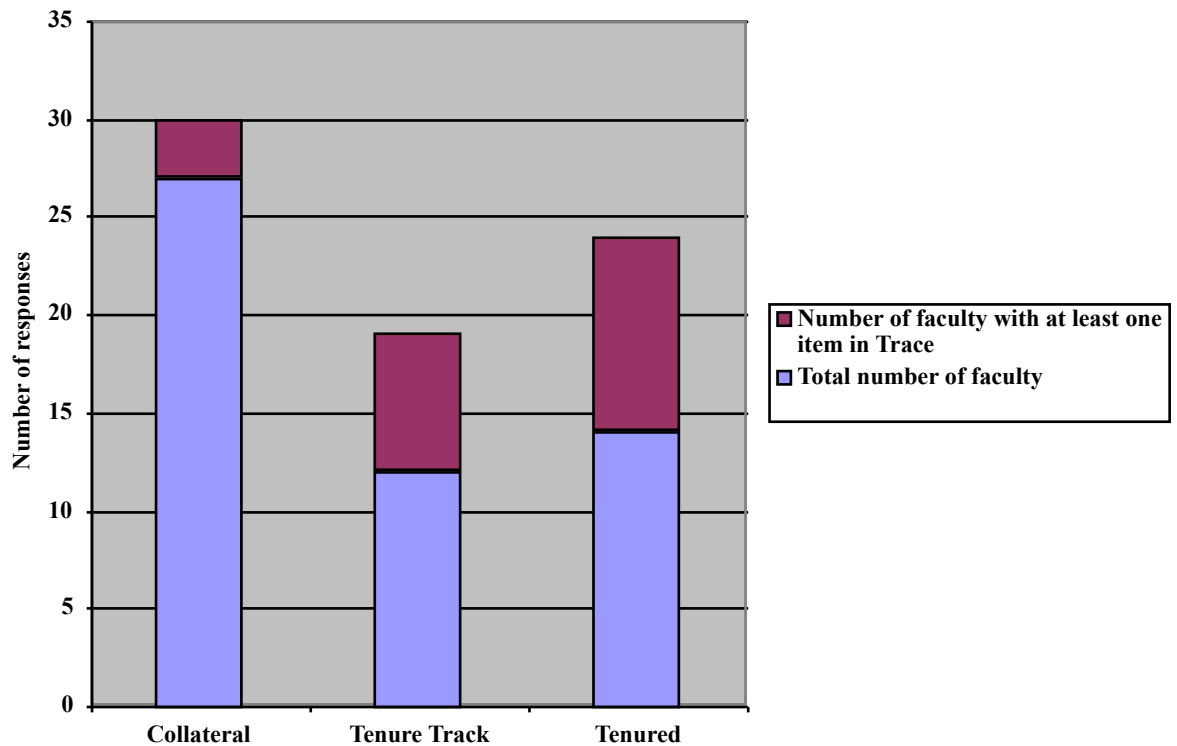


Figure 3. Stratified UT faculty members versus faculty with items in Trace

The remaining eight UT faculty members that stated that they had not submitted to the IR were asked why they had not submitted items. Four stated that they either did not do research or have not been the principal investigator on the research studies they have done. Two faculty members stated that they wanted to publish in peer-review journals first, demonstrating the importance the academic community places on traditional publication methods in order to gain authority. One faculty member stated that his or her works were copyrighted, implying that he or she could not submit them due to this perceived restriction. This is a common copyright misperception regarding IR submissions when, in fact, most copyright allows authors to deposit works into repositories. One faculty member was simply not interested in submitting in general. Interestingly, the last faculty member stated that he or she had articles in Trace, making the researcher think that this faculty member did not realize that Trace is UT's IR.

UT respondents who knew that UT had an IR were asked if they considered it to be successful. Because IRs rely on participation in order to be effective, the researcher loosely defines successfulness as the IR being used. Many of the survey participants did as well. Figure 4 breaks down the responses to show that a slight majority felt it was either successful or absolutely successful. Reasons listed for the IR being successful included knowing that several faculty members use it, receiving usage reports and emails from IR users that let faculty know that it is being used, and increasing usage. Reasons listed for the IR being unsuccessful included the fact that submissions were not acceptable for promotion, the opinion that too few faculty members used it besides "power users," and the fact that faculty were not using it to access other faculty members' work. While it is hard to argue that seeing an increase in contributors and users

of an IR is not a testament to the tool's success, faculty will not see the full value and the subsequent success of an IR until this method of dissemination qualifies for academic promotion.

VCU's opinions on an IR

VCU faculty members who were either unsure or knew that the university did not have an IR were asked if they thought VCU should create one. Figure 5 shows that the majority of faculty were neutral about the topic, most likely because they were unfamiliar with IRs. Reasons for being for an IR included the potential to enhance both research dissemination and university recognition. Some concerns that were raised over having an IR were the value an IR has besides sharing research and how usefulness it is because of promotional criteria. Once again, even though faculty can grasp the advantages of having an IR, the fact that alternative methods of dissemination do not count towards promotion is mentioned, emphasizing the importance of not only what one researches, but how one disseminates it.

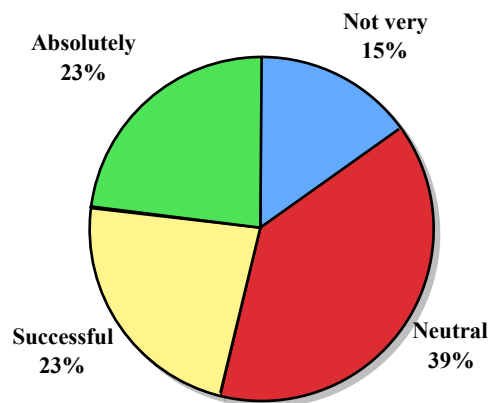


Figure 4. UT faculty opinion of the success of their IR

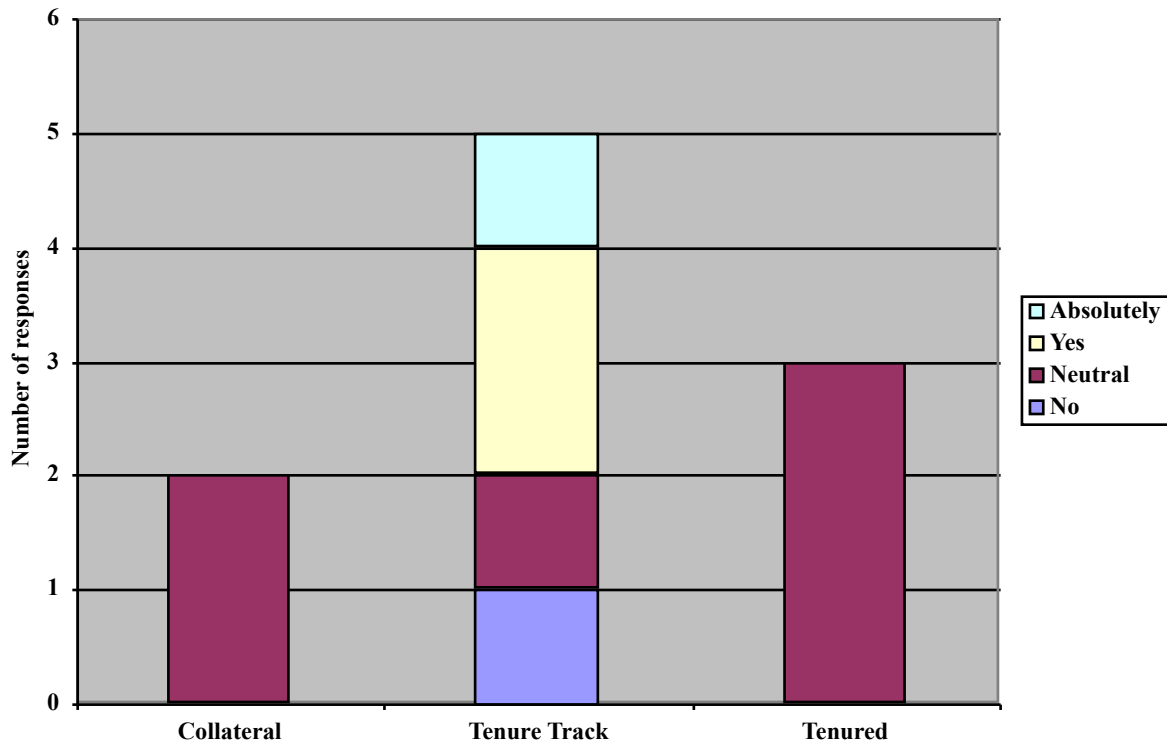


Figure 5. VCU faculty opinion on creating an IR

Library involvement

Those that knew that UT had an IR were asked if they were encouraged by someone to submit to it, regardless of whether or not they did submit any items. If they answered that they were encouraged, they were asked by whom they were encouraged. Stratified results of who encouraged the faculty members can be found in Figure 6. The reason there are 14 responses for 13 respondents in the graph is because one faculty member mentioned that both a librarian and fellow faculty member had encouraged him or her. Only one faculty member, a collateral faculty member, stated that he or she was not encouraged by anyone to submit to Trace. Almost 70% of faculty members stated that a librarian encouraged them, although it should be noted that none of

the three collateral faculty members mentioned that a librarian encouraged them. The remaining faculty members stated that a fellow faculty member had encouraged them. It is clear that the librarians at UT are doing a good job at reaching out to the nursing faculty about submitting work to Trace. Since no collateral faculty mentioned being encouraged by a librarian, that could be an area for UT librarians to explore in the future. Knowing that fellow nursing faculty are encouraging one another to submit to Trace further suggests that faculty members possess a good understanding of the advantages of IRs and see the value in continuing to contribute to them.

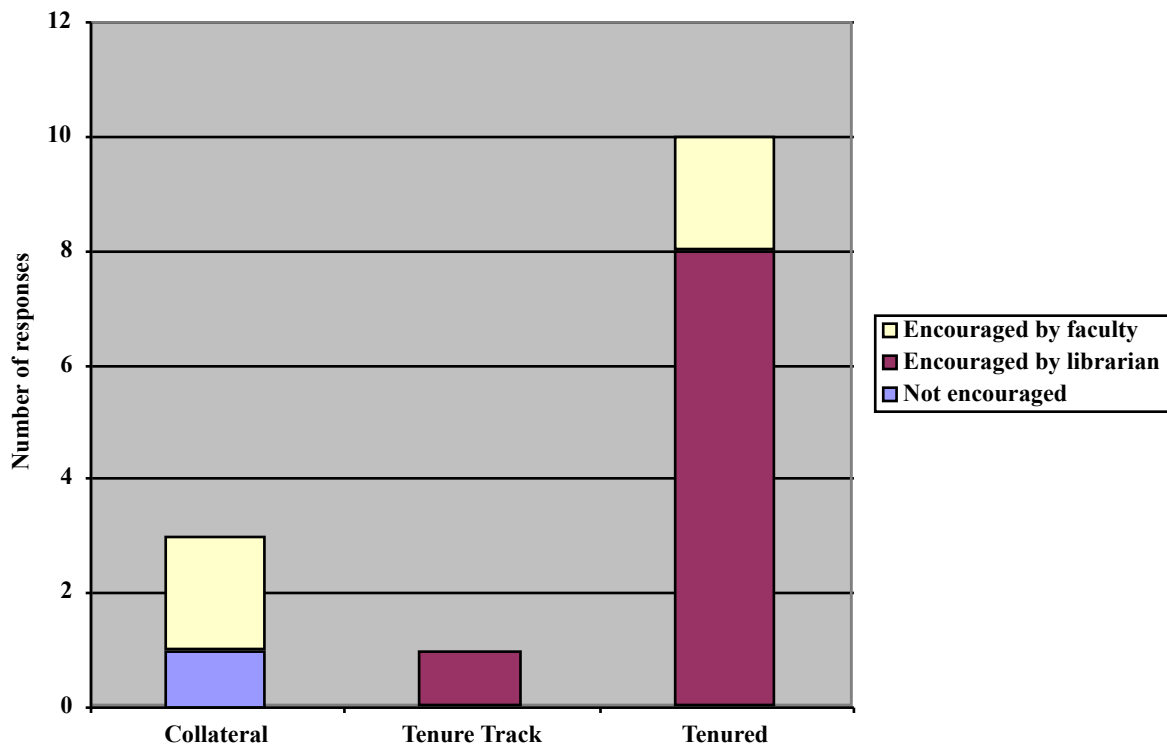


Figure 6. Who encouraged UT faculty to submit to Trace

When asked if the library plays an active enough role in promoting the IR and assisting faculty members with it, 40% of UT faculty answered yes. When asked how the library and its staff can better help faculty contribute to the IR, the most common answer was by increasing awareness and promotion of the IR. Other responses included offering more technical support, sending reminders for faculty to submit items to Trace and to offer follow up support, offering personal sessions so that a librarian can help faculty decide what to submit, and providing someone else to post their items in Trace for them. Some of these suggestions seem realistic for UT's library to implement, such as the reminder system and personal sessions, but others would require a significant amount of staff time and library funds.

Alternative dissemination behavior and attitudes

Respondents were asked a number of questions regarding their alternative research and dissemination habits. Figure 7 breaks the responses down by university and Figure 8 breaks the responses down by rank. As previously mentioned, two faculty members, one UT and one VCU, have submitted work to other IRs. When all respondents were asked if they had ever used another university's IR while conducting research, no UT faculty responded that they had. Only one tenure track VCU faculty member stated that he or she had. The incredibly low use of other university's IRs is surprising, especially for UT since most UT faculty are familiar with their own IR and one would think that they would apply that knowledge of IRs when conducting research.

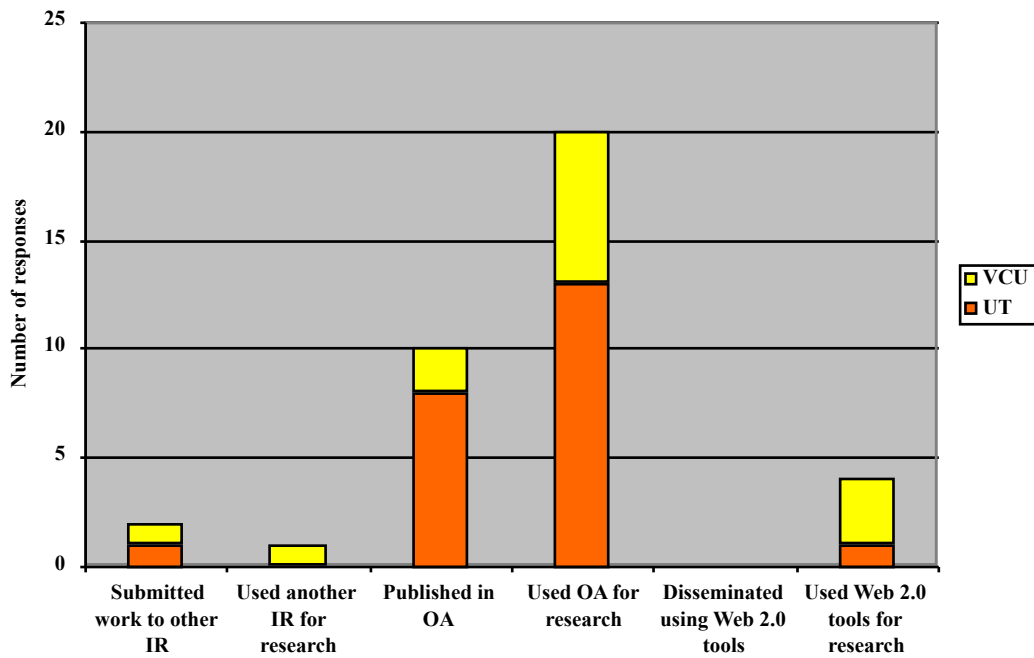


Figure 7. Alternative research and dissemination methods by university

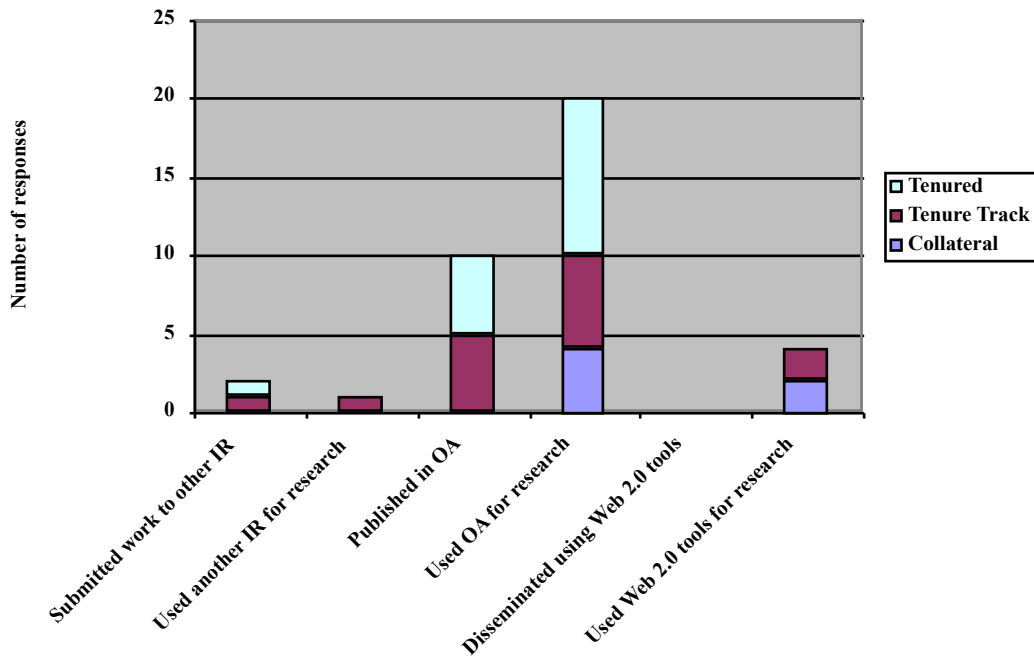


Figure 8. Alternative research and dissemination methods by rank

When asked if they have ever published an article in an open access journal, UT faculty members stated that they published significantly more in open access than VCU faculty: 40% of UT and only 15.4% of VCU faculty members answered yes. This difference is curious and the researcher checked these statistics against the findings she discovered when conducting the research output histories. While the research output histories will be discussed more in depth in a later section, the analysis showed that only 5 out of the 18 UT histories (27.8%) contained publications in open access journals. This difference between reported open access publication and actual open access publication suggests that perhaps UT faculty are not as familiar with the open access movement as they thought they were. The research output histories for VCU faculty showed that the same percentage as survey response answers, 15.4%, had published in open access journals. The overall stratified results showed that no collateral faculty members stated that they had published an article in an open access journal while 62.5% of tenure track and 35.7% of tenured faculty stated that they had. The fact that so many tenure track faculty have published articles in open access is surprising given that the majority are most likely aiming for tenure and open access publications are not traditionally accepted for promotion.

When asked if they had ever used an open access journal while conducting research, UT and VCU were much closer in their responses: 65% of UT and 53.8% of VCU faculty members answered yes. Doing research in open access journals was by far the most popular alternative activity that the faculty were asked about. The stratified responses regarding using open access journals for research showed that over 70% of both tenure track and tenured faculty stated that they have used an open access journal for conducting research while only slightly over 30% of collateral stated that they had. This difference may be contributed to the fact that collateral

faculty do less research all around than tenure track and tenured faculty rather than just using open access journals less.

Next the respondents were asked about Web 2.0 tool usage. No UT or VCU faculty members responded that they have used Web 2.0 tools to disseminate research findings, but one UT and three VCU faculty members stated that they have used Web 2.0 tools while conducting research. The stratified results showed that no tenured faculty answered that they have used Web 2.0 tools while conducting research while two of both collateral and tenure track faculty have. What surprises the researcher most about these results is that, even though it is a small difference, VCU faculty members stated that they had used Web 2.0 tools more often than UT faculty. She is uncertain as to why this is. It is not unexpected that Web 2.0 tools have not been used often in general, as effective academic use for them is still evolving and catching on. Tenured faculty may be less likely to use these tools because they are more likely older than collateral and tenure track faculty and older adults tend to use Web 2.0 tools less often than younger adults.

Respondents were asked if they generally considered themselves to be someone who uses alternative methods of dissemination for their research. Figure 9 breaks the responses down by university and Figure 10 breaks the responses down by rank. Across the board, the most common response was “not at all.” No faculty responded “absolutely.” Surprisingly, UT faculty answered negatively slightly more than VCU. Considering nearly 40% of UT faculty have submitted items to Trace, many of these faculty members have clearly used alternative dissemination methods and have most likely used them more often than VCU faculty. Perhaps they simply do not consider these IR submissions to be an alternative method of dissemination.

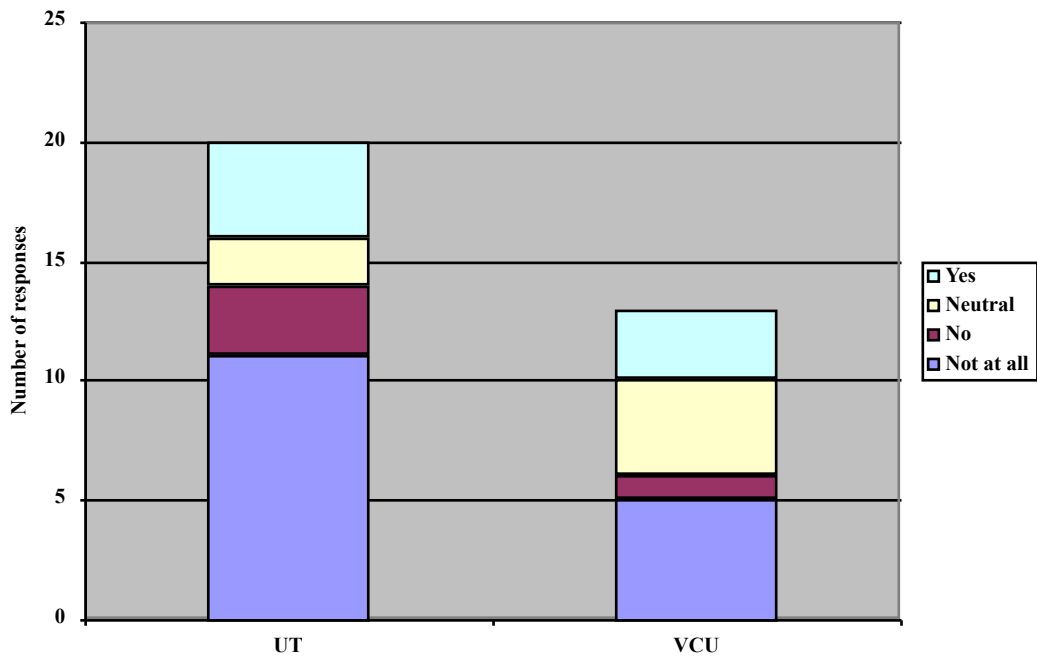


Figure 9. Perceptions of being an alternative dissemination user by university

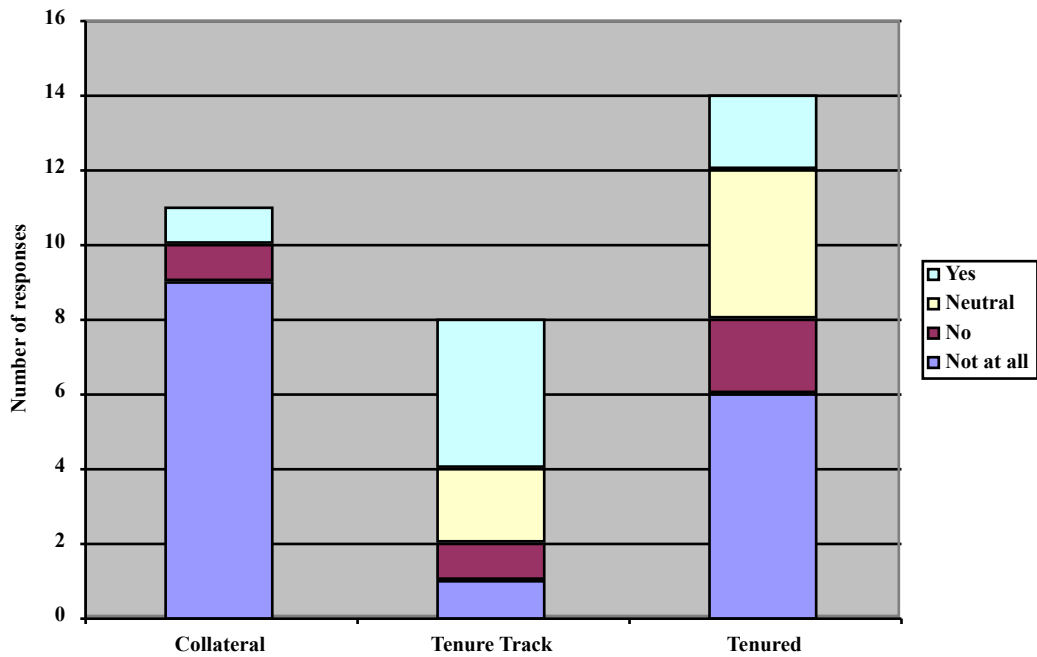


Figure 10. Perceptions of being an alternative dissemination user by rank

When the results were stratified, tenure track faculty stated that they were the most open to the idea of being a user of alternative dissemination methods and collateral faculty stated that they were the least. Considering that tenure track are concerned about achieving tenure, it is surprising that they answered the most positively toward the idea of being an alternative methods user. As mentioned previously, the reason why collateral faculty scored so negatively is most likely due to the fact that they conduct less research all around, not just with alternative dissemination methods.

Reasons that faculty listed for not being an alternative methods user included costs associated with open access, copyright concerns, tenure and promotion concerns, scholarly value concerns, the fact that their target population does not use alternative methods to access information, preference for traditional methods, and time. While some open access journals do charge authors to publish in their journal, not all do. Additionally, few other alternative methods charge fees, so this deterrent from using alternative dissemination methods is actually a common misunderstanding. The misconception of copyright was addressed previously in this chapter, as was the tremendous focus on promotional criteria.

Reasons for considering themselves to be an alternative methods user included having submitted to and reviewed for open access journals, the fact that their target population does use alternative methods, using open access to do research, trying to be more computer literate, and moving more towards using alternative methods. It is interesting that two faculty stated their target population as a reason to both use alternative methods and not use alternative methods considering some doubt was shed in the literature review as to whether nurses considered their

audience when disseminating their research (Flynn & Quinn, 2010; Freemantle & Watt, 1994; Funk, Tornquist, & Champagne, 1989; Scullion, 2002).

Open access

The last survey questions that were asked of the respondents pertained to the open access movement. UT and VCU faculty were similar in their familiarity with the open access movement: over 60% from both universities stated that they were familiar with it. Respondents were asked if they supported open access. The researcher associated support with using, contributing to, or being open to the idea of open access. The survey participants largely considered support in similar terms. Figure 11 breaks the responses down by university and Figure 12 breaks the responses down by rank. UT's responses varied more than VCU's. VCU's faculty responses were contained between "neutral" and "absolutely" while UT's faculty responses hit all of the classifications. It should be noted that the only "no" and "not at all" responses came from UT faculty. Since UT is the university in this study that has the IR, these negative responses were surprising.

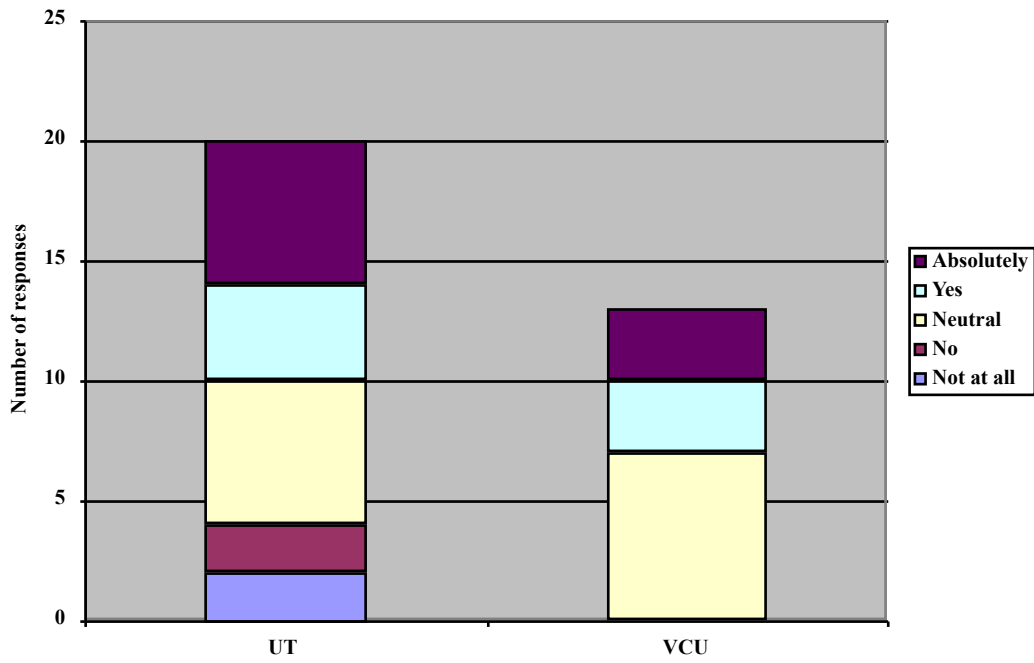


Figure 11. Open access supporters by university

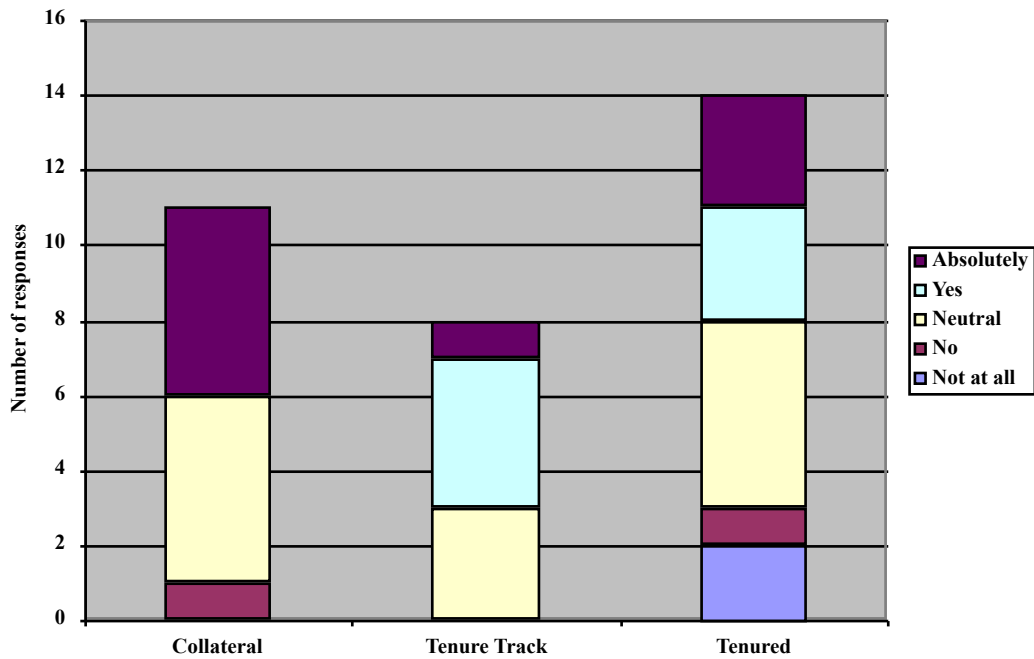


Figure 12. Open access supporters by rank

The responses from tenured faculty were the most varied out of the stratified results and contained the only two “not at all” responses. Tenure track faculty appeared to be the most open minded since their results were contained within “neutral” to “absolutely;” however, collateral faculty answered with the most “absolutely” responses. As mentioned previously, since tenure track faculty are concerned with making tenure, it is surprising that they are so supportive of open access when most open access publications would most likely not be considered for promotion. Another surprise is that collateral faculty were also so supportive of open access since they do the least amount of research out of all of the ranks. Since they are the least concerned about promotion and tenure; however, they may be able to focus more on the advantages to open access rather than its disadvantages.

Reasons listed by faculty for being a supporter of open access included the fact that it has the ability to improve and increase access, visibility, sharing, and speed of research; it can be used for clinical practice; its ease of use; the fact that tax supported research should be open access; its ability to lessen the control of journal publishers; its ability to decrease the amount of subscription fees the library has to pay; and it offers a rigorous peer-review process. This well-rounded list of reasons makes the researcher think that the faculty have been well informed about open access.

Reasons listed for not being a supporter of open access included the need for authors to retain control of their work, its costs, it being a disservice to the scientific community, skepticism about it being a legitimate venue, quality concerns, the lack of reality regarding open access, and tenure concerns. Many of these concerns have been addressed earlier in this chapter as being misconceptions or misunderstandings regarding both the open access movement and alternative

dissemination methods. The topic of tenure has also been thoroughly covered. While the researcher agrees that sometimes open access is incorrectly promoted as a “magic bullet” for solving research dissemination problems, she feels that it is an perfunctory reason for not supporting open access all together.

Research output histories

Lastly, the researcher evaluated the research output histories over the last ten years from a randomly selected third of the faculty members. The researcher requested CVs from 31 faculty members, 18 from UT and 13 from VCU. Only 12 CVs, seven from UT and five from VCU, were sent to her. The remaining research output histories were determined by searching for the faculty in CINAHL and Google Scholar, as well as in any selected publications listed on the university websites. While these search results are mostly not as thorough as a CV would have been, the results should be representative of the faculty’s research as a whole. Out of the 31 reviewed research output histories, seven or 22.5% of faculty members have published articles in open access journals. A breakdown of the results can be seen in Figure 13.

Out of the seven faculty members who have published in open access journals, five were UT faculty and only two were from VCU. Stratified results showed that five were tenured, one was tenure track, and one was non-tenure. Both of the VCU faculty members are tenured. Comparing these stratified research output history results with the survey responses, tenure track faculty’s reported open access publication is far greater than their actual open access publication. While five out of eight tenure track faculty members (62.5%) stated that they had published an article in an open access journal, the researcher only found one out of eight tenure track faculty (12.5%) that actually published in an open access journal during the research output history

evaluations. The researcher feels that the same assumption she applied earlier to UT faculty also applies to tenure track faculty: perhaps they are not as familiar with the open access movement as they thought they were.

The low number of open access publications in general is not surprising since it is still a relatively new publication method and has had some trouble, for reasons previously mentioned, gaining popularity. The fact that UT faculty members have published in open access journals more is to be expected since UT is the university that has the IR in this study. The fact that tenured faculty are the majority to publish open access articles is also anticipated, especially for the VCU faculty, since they are less concerned about adhering to promotional criteria since they have already achieved tenure.

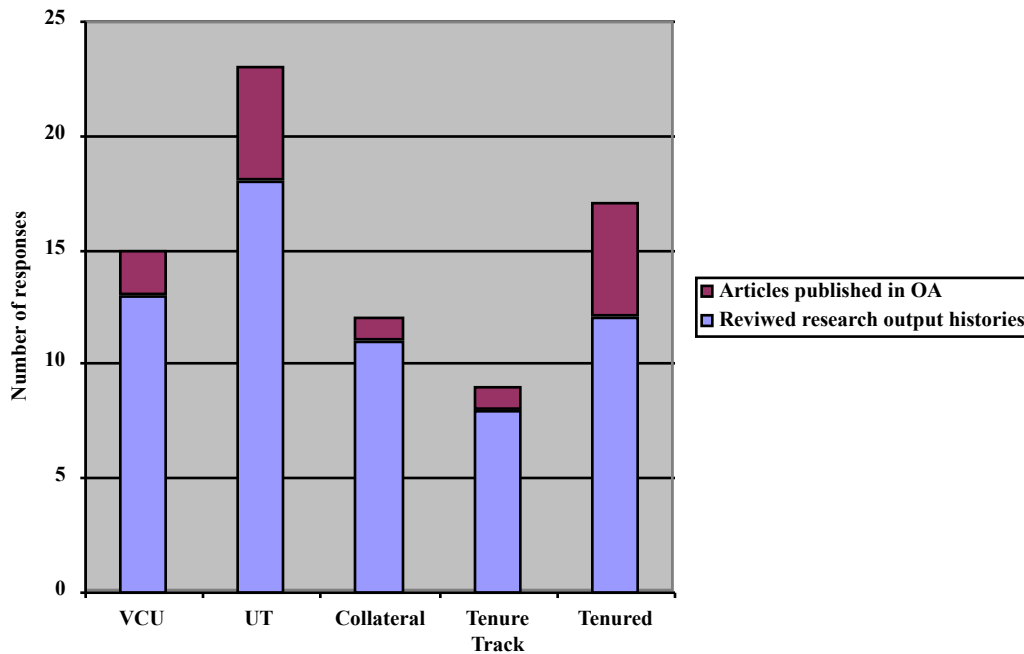


Figure 13. Research output histories versus open access publications

The researcher went on to compare the five UT faculty members who have published in open access journals to the list of faculty found in Trace. She discovered that three faculty members who have open access publications were found to have items in Trace. Even though the size of the population is small, it is encouraging to see that the majority of open access authors are also embracing Trace as a way to disseminate their research efforts. It is possible that Trace could have encouraged these faculty members to publish in open access, but it would be nearly impossible without directly asking the faculty members themselves about which was the cause and which was the effect.

While conducting the research output history evaluations, the researcher also looked for research that was disseminated using alternative methods; that is, methods outside of the traditional routes of journal publications, conference presentations, books, and book chapters. Seven or 22.5% of faculty members were found to have utilized alternative methods. Five of them were from UT and two from VCU, with five being tenured and two being tenure track. Alternative methods discovered included being a web conference presenter; coauthoring an online practice alert; submitting online, non-journal submissions to ERIC; submitting research studies to an online nursing repository; and having a dissertation hosted in another university's repository. Additionally, two faculty members, one being tenured UT and one being tenure track VCU, were found to be reviewers of open access journals. Even though being a reviewer for a journal is not necessarily a form of research dissemination, it most likely means that the faculty member is at least partially approving of the open access movement. For this reason, the researcher wanted to capture this willingness to support open access through actions by including these findings in the results.

The submissions to the online nursing repository were the most surprising finding for the researcher since this faculty member worked at UT and had not submitted any items to Trace. The researcher feels that faculty members tend to be loyal to their universities and attempt to improve the university's recognition through their research efforts, making an IR the more likely candidate over a general repository if one was to submit work to one.

CHAPTER V: DISCUSSION AND IMPLICATIONS FOR FUTURE RESEARCH

Discussion

The two questions driving this research study were: “Does the presence of an IR influence the current practices and perceptions of nursing faculty regarding the dissemination of their research?” and “Knowing these current practices and perceptions, how can academic health sciences libraries better approach nursing faculty to contribute to an IR or advocate for creating an IR for nursing research.” While the results the researcher was able to garner from her data collection were not conclusive enough to form definitive answers, they at least aid in starting a conversation regarding how and why nursing faculty use alternative dissemination methods to disseminate their research and what health sciences librarians can do to better market an IR towards nursing faculty.

Research question 1

The researcher’s first question relied on the comparison between a university that had an IR, UT, and a university that did not, VCU. Despite the assumption that UT would be more open toward the topics covered in this study, UT’s responses were not always more supportive of open access or alternative dissemination methods compared to VCU’s. In fact, UT faculty members seemed to harbor a more negative perception toward being a user of alternative dissemination methods and held more varied views on supporting open access, even though close to 40% of UT nursing faculty have submitted items to Trace, which is a type of alternative dissemination. For this reason and for having a significant difference between reported practices and actual practices, UT faculty members may not know as much about open access and alternative

dissemination as they think they do. While VCU's responses made them more likely to use Web 2.0 tools while conducting research, UT nursing faculty were more likely to publish articles in open access journals. Since choosing to disseminate one's own research through open access is more of a statement than being dependent on the format of a resource that is being used, UT's nursing faculty's actions appear to be supporting the open access movement and alternative dissemination methods more so than VCU's faculty, despite UT's thoughts to the contrary.

In terms of the IR being a driving force behind UT's nursing faculty practices, more evaluation would be required in order to answer confidently. It is difficult to say whether or not the IR itself influences UT nursing faculty's dissemination practices and perceptions since not all faculty members were sure that UT had an IR. Additionally, without asking faculty directly, it is nearly impossible to determine if the IR or having published in an open access journal is the cause or the effect in the situation. One faculty member may have approached the sequence differently than another faculty member. Additionally, there is always the possibility that the two were done independently of the other and no thought was given about their connection.

Even though there may be a difference in how many faculty thought that they had published in open access and how many had actually published in open access, the fact that UT faculty were willing to think that they have had an article published in an open access journal is promising for the open access movement because it demonstrates that even though they may not have actually done it, the idea of being published in an open access journal is acceptable to them. It is a move in the right direction.

Regardless of Trace's specific role in influencing nursing faculty research dissemination, it is clear to the researcher that something about UT's research culture regarding open access and

alternative dissemination methods is having an influence on the faculty. Many of the UT survey respondents mentioned that their colleague's use of and encouragement of submissions to Trace are what shaped their views about the tool. The researcher believes that this willingness to embrace open access comes from a type of research culture that is being cultivated intentionally at UT. UT faculty formed a Scholarly Communications Committee in 2004 to act as an advising board for issues relating to electronic scholarly communication, including open access (University of Tennessee, Knoxville University Libraries, n.d.b). They created a type of "road show" in 2010 that they presented to UT's colleges, schools, and departments in order to explain the changing landscape of academic publishing and to introduce Trace in a more tailored fashion. The first road show was presented to the College of Nursing (Phillips, 2010). It should also be noted that UT has created an Open Publishing Support Fund for faculty members to use to pay for fees associated with publishing articles in open access journals (University of Tennessee, Knoxville University Libraries, n.d.a). Providing monetary support is perhaps the most telling out of all of the actions UT has undertaken to promote open access in that they are truly "putting their money where their mouth is" to encourage faculty and eliminate barriers.

This very culture and the driving forces behind it are undoubtedly from where the idea for an IR came. Since Trace is the most prevalent, public-facing, university initiated push toward open access and alternative dissemination, the researcher assumes that it has most likely had a large role in the behavior and attitudes of faculty that are familiar with it. As stated before, it is nearly impossible to tell without directly asking faculty though. Perhaps a better conclusion to draw then is that UT's research culture, of which Trace is a part, enables nursing faculty

members to investigate open access and alternative dissemination methods more so and with more support than a university that does not have such a culture.

It is important to note, however, that even though having a supportive university culture is important, a significant increase in open access publication and alternative dissemination use will not come to fruition until these methods are accepted as criteria for promotion and tenure across the academy. As was evident by the repeated mentions in the survey responses, open access will not be fully embraced until tenure track faculty can rely on their open access publications to grant them tenure.

One of the biggest hurdles for open access journals to be eligible towards granting the author tenure or promotion is their lack of impact factors. Many open access journals do not have impact factors because electronic articles, which open access journals are comprised solely of, are used differently than articles from print journals and, therefore, do not conform to the same kind of criteria that can be applied to print journals to configure their impact factor.

Traditionally, print journals were assessed as a whole, but with the advent of electronic publishing, articles can now be found and used as stand alone entities (Alexandrov, 2011). This shift from journal-centric to article-centric has not been represented well in tenure and promotion criteria. Perhaps when it is, journal impact factors will not be held in such esteem and, subsequently, open access will be viewed more favorably.

Research question 2

The researcher's second question relies more so on the stratified results of the research study in order to determine how best health sciences librarians can either promote an IR or advocate for the creation of one. When organized by rank, faculty responses were all over the

board in regards to practices and perceptions of IRs, open access, and alternative dissemination methods. Collateral faculty were least open to the idea of alternative dissemination methods, but were most supportive of open access. Based on a significant difference between reported open access publications and actual open access publications, tenure track faculty may not know as much about open access as they think they do. Tenured faculty are the most likely to publish in open access journals.

Librarians would do well to adjust their approach to speaking with nursing faculty about IRs according to what rank the faculty currently is and what their dissemination needs currently are. Having an understanding of the faculty's research audience may help as well since that will most likely influence their willingness to use alternative methods, as was evidenced in the survey responses. For faculty who complain that there are a lack of options for their type of research or mention the same barriers to dissemination that the survey respondents mentioned, librarians could market the IR as being a viable alternative.

Based on the survey responds, areas where a librarian could expand the reach and scope of an IR include collateral and tenure track faculty. UT's collateral faculty responses showed that they were the least likely to know of or use Trace. Since collateral faculty do conduct research but are less likely to disseminate it, librarians could market the IR toward these faculty by explaining its potential role in helping to close the research-practice gap in that there is no peer-review process involved and it can offer immediate dissemination. Checking to make sure that the hospital policy about distributing institute-based research allows for this type of dissemination would be a wise preventative measure in order to protect the collateral faculty member from any unintended breaches of contract. Tenure track faculty's responses were more

open-minded about alternative dissemination and open access than expected. Librarians could tap into this willingness to try out new methods by increasing their focus on the unique research and dissemination needs of tenure track faculty.

The researcher feels that some of the perceptions held by the surveyed nursing faculty might be a consequence of misperceptions about open access and alternative dissemination methods since many faculty are confused about what an IR is, what open access is, and what alternative dissemination methods are available to them, as was evidenced by some conflicting survey responses. Even if they were aware of these things, faculty were not always sure how they fit into their ability to achieve academic promotion or esteem. Health sciences librarians could offer educational sessions about the topics that were mentioned repeatedly in the survey responses to help dispel some of the prevailing misconceptions regarding open access, such as copyright, concerns about remaining control of research, costs, and peer-review concerns. Additionally, UT librarians could use the term “institutional repository” more often with faculty in order to aid in their understanding that Trace is part of a larger movement and subsequently enable faculty to more effectively engage in that larger conversation.

Many of the suggestions UT faculty listed for ways that the library could better help faculty contribute to the IR seem doable. A reminder system is something that could be relatively easy to implement; however, an option to easily opt out should be included for those who are not interested in such a service. Personal sessions are also easy for librarians to do, as consultations are something at which they excel. Tech support could also be offered in personal sessions or perhaps a tutorial of some kind could be created, if it has not been already. Promotion of the IR could prove to be a bit trickier as it typically involves a large amount of time to do well and to be

effective. The researcher is sure that if UT's librarians had the time and the staff to provide a person or people to post items to Trace for the faculty members, they would be willing to oblige; however, most libraries are short on both time and staff, so this suggestion seems the most unlikely to be implemented. Perhaps on a departmental level, the College of Nursing could assign an administrative assistant to work closely with the Trace staff to post items to Trace for the College.

In terms of advocating for the creation of an IR at a university that currently does not have one, the researcher feels that based on the survey results, the best way for health sciences librarians to do so would be to aid in creating a supportive research culture. They could start the conversation by providing educational sessions on open access in order to dispel misconceptions and to answer questions about the movement. From there, librarians could attempt to find allies in all corners of the university in order to start a community of support until there are enough supporters to vie for the creation of an IR.

Recommendations

Based on the aforementioned limitations of the study, the researcher would recommend future studies focusing on nursing research dissemination, IRs, and the role of health sciences librarians to strive to produce a larger sample size, ask more pointed survey questions, and attempt to make more direct contact with the nursing faculty members before requesting their participation. Expanding the study to include more nursing departments whose universities are evenly split in regards to having an IR and not having an IR would provide a larger population from which to collect data and could produce results that are more representative of the academic nursing field as a whole. These aspects could enable stronger conclusions to be made.

A reworking of the survey questions could also provide a richer set of data from which to base future results. While the current study asked questions regarding how the library could improve support for the IR, the researcher failed to create a foundation on which to place these improvements by not determining what work the librarians had already done to assist the nursing faculty members. Additional questions could focus on how they have come to know about open access, alternative dissemination methods, and IRs and if their university has offered any informational sessions on these topics. Providing definitions in future surveys for terms like open access, alternative dissemination methods, and institutional repositories could also ensure that the faculty members and the researchers are on the same page when referring to these terms, as confusion tends to revolve around them.

Lastly, the researcher recommends that future researchers attempt to have more contact with the nursing faculty members before requesting their participation in the study. As some faculty members are confused about IRs and open access and may even feel threatened by them, being able to speak, in person or by telecommuting, at a department meeting to introduce the study, for example, may help in diffusing any sort of misgivings faculty may have toward participating in a study about a topic to which they may feel adverse. The researcher feels that this type of contact could especially increase response rates for receiving CVs from the faculty members since these research output histories contain a good amount of personal information. In lieu of having this much contact with the nursing schools, since it is very likely that it could prove nearly impossible to do for all universities being included in an expanded study, finding at least one well respected faculty member at each university to collaborate with that understands the study and can advocate on the researcher's behalf could also aid in increasing response rates.

Conclusion

The field of nursing has been struggling for many decades to facilitate the relationship between theory and practice. A wide research-practice gap and low research dissemination levels continue to prevail despite many efforts to improve both. The researcher argues that IRs and other forms of alternative electronic methods could be important tools for nursing faculty to utilize as they have the potential to improve research dissemination on a timely basis to the nursing community at large. Since an IR is usually created by and maintained by the university library, effectively promoting the repository to nurses could open up the opportunity for health sciences librarians to assist in closing the research-practice gap and improve nursing research dissemination. While this research study did not provide concrete answers to both its research questions, the researcher hopes that her study inspires continued research on the intersection of nursing research dissemination and alternative dissemination methods.

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APPENDIXES

Appendix A: Survey Questions

At which university do you work as a nursing faculty member?

- University of Tennessee
- Virginia Commonwealth University
- Other

Please explain why you chose Other.

What is your title?

Is your title:

- Collateral
- Tenure earning
- Tenured
- Other

Please explain why you chose Other.

How long have you held this position at your university?

How frequently have you conducted research over the last 10 years?

How frequently have you been able to disseminate your findings from completed research studies?

For how many years have you conducted research?

Are you familiar with institutional repositories?

- Yes
- No
- Unsure

To the best of your knowledge, does your university have an institutional repository?

- Yes
- No
- Unsure

Have you ever heard of Trace (Tennessee Research and Creative Exchange)?

- Yes
- No

To the best of your knowledge, has any university where you have earned degrees and or worked had an institutional repository?

- Yes
- No
- Unsure

If your current university has an institutional repository, have you ever submitted anything to it?

- Yes
- No

If your previous university employer and or a previous university where you earned degrees had an institutional repository, have you ever submitted anything to it?

- Yes
- No

If you have submitted something to your current university's institutional repository, what was it? Check all that apply.

- Research results
- Procedures
- Articles
- Datasets
- Multimedia items
- Other

Please explain what other materials you have submitted to your university's institutional repository.

If you submitted something to your university's institutional repository, why did you submit it?

If you submitted something to your university's institutional repository, would you submit another work? Why or why not?

If you did not submit anything to your university's institutional repository, why didn't you submit something?

If your university has an institutional repository, were you encouraged by someone to submit to it?

- Yes
- No

If you were encouraged to submit, what was that person's position (librarian, fellow faculty member in your department, etc.)?

If your university has an institutional repository, do you feel like the library plays an active enough role in promoting and assisting you with it?

- Yes
- No
- Unsure

If your university has an institutional repository, what can the library and its staff do to better help faculty contribute to the repository (tech support, etc.)?

If your university has an institutional repository, would you consider it to be successful? (Place a mark on the scale)

Not at all Neutral Absolutely

What is your rationale for selecting the number that you did?

Have you ever used another university's institutional repository for research?

- Yes
- No

Have you ever published an article in an open access journal?

- Yes
- No

Have you ever used an open access journal while conducting research?

- Yes
- No

Have you ever used Web 2.0 tools (wikis, blogs, YouTube, etc.) to disseminate your research?

- Yes
- No

Have you ever used Web 2.0 tools while conducting research?

- Yes
- No

Would you consider yourself to be someone who uses alternative methods of dissemination (open access, Web 2.0 tools, etc.) for your research? (Place a mark on the scale)

Not at all Neutral Absolutely

What is your rationale for selecting the number that you did?

How do you typically disseminate your research findings? Why?

What barriers have you encountered while attempting to disseminate your research findings?

If your university does not currently have an institutional repository, do you think that it should? (Place a mark on the scale)

Not at all Neutral Absolutely

What is your rationale for selecting the number that you did?

Are you familiar with the movement to migrate research publications to open access journals?

- Yes
- No
- Unsure

Do you support the open access movement? (Place a mark on the scale)

Not at all Neutral Absolutely

What is your rationale for selecting the number that you did?

Appendix B: Survey Invitation and Informed Consent

Dear Nursing Faculty Member,

My name is Sarah McClung and I am a master's candidate in the School of Information Sciences at the University of Tennessee- Knoxville, as well as a library assistant at Virginia Commonwealth University. You are invited to participate in my study, "Potential Effects of Institutional Repositories on Nursing Research Dissemination."

The purpose of this study is to determine if the presence of an institutional repository influences the behaviors and attitudes of nursing faculty regarding the dissemination of their research. The research will help to determine if institutional repositories are a dissemination method worthy of further promotion and study for the nursing field by health sciences librarians.

You will take a 10-20 minute survey. The survey will be open until Thursday, March 29. The survey does not record who participated and your identity will be kept confidential. After you take the survey, your responses will be aggregated for reporting.

A third of the nursing faculty will be randomly selected to submit their CVs to the researcher for qualitative review. An additional email will be sent to those selected for this CV review. Any identifiable information will be deleted from the CV and results will be aggregated for reporting.

There is no foreseeable risk involved in participating. Your answers will be kept confidential. Data will be stored securely and will be made available only to persons conducting the study. No reference will be made in oral or written reports which could link participants to the study.

Your participation in this study is voluntary; you may decline to participate without penalty at any time. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. Clicking on the survey link constitutes your consent to participate and that you are at least 18 years of age.

Please click the URL if you wish to participate in the study: [survey URL]

Thank you very much for your participation. If you have questions at any time about the study or the procedures, you may contact the researcher, Sarah McClung, at [researcher's email address] or [researcher's phone number]. If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

Appendix C: CV Request Email

Dear Nursing Faculty Member,

As mentioned in my previous email regarding my research study, “Potential Effects of Institutional Repositories on Nursing Research Dissemination,” a third of the nursing faculty will be randomly selected to submit their CVs to the researcher for qualitative review. **You have been randomly selected to submit your CV.** Any identifiable information will be deleted from the CV and results will be aggregated for reporting.

There is no foreseeable risk involved in participating. Your answers will be kept confidential. Data will be stored securely and will be made available only to persons conducting the study. No reference will be made in oral or written reports which could link participants to the study.

Your participation in this study is voluntary; you may decline to participate without penalty at any time. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled.

Please submit your CV to [researcher’s email address] before Thursday, March 29.

Thank you very much!
Sarah McClung

VITA

Sarah McClung grew up in eastern Pennsylvania before graduating cum laude from the University of Mary Washington in 2008 with a B.A. in English. She currently works as the Research and Education Assistant at Tompkins-McCaw Library for the Health Sciences at Virginia Commonwealth University in Richmond, VA. She plans to pursue a career in academic librarianship, focusing on technical services and scholarly communication.