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Comparing the Effectiveness of Masters-Prepared and Non-Masters-Prepared Nurse Leaders

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MSN, Marymount University, 2006

BSN, Marymount University, 2000

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2017

Abstract

The complex nature of healthcare requires nurse leaders to be skilled in professional practice, communication, teamwork, and problem solving to improve staff satisfaction and patient outcomes. The American Association of Colleges of Nursing and Institute of Medicine promotes graduate education for nurse leaders to enhance the delivery of quality care to the nation's diverse patient populations. Guided by the diffusion of innovation theory, this project explored the differences in nursing care hours, staff turnover, nurse quality indicators, as well as leadership characteristics on units lead by masters-prepared and non-masters-prepared nurses. Forty-eight nurse leaders completed the impact of graduate education among nurse leaders (IGENL) survey addressing perceptions of their ability to change practice, teamwork, communication, and problem-solving skills. Staffing reports, Nurse Quality Indicators (NQI), and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data were collected from 34 hospital units. Data were summarized and *t* tests were conducted to examine the differences in NQI and HCAHPS data from units lead by nurses with and without a graduate degree. No significant differences were noted in these measures. In the IGENL survey data, the nurse leaders with a graduate degree had significantly higher scores on the leadership characteristic subscales of professional practice, communication and teamwork, and problem solving than did those without. The outcome of this project can contribute to positive social change within healthcare organizations by supporting the pursuit of graduate education for nurse leaders, which could enhance leadership attributes and subsequently improve staff satisfaction and patient outcomes.

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Dedication

This project is dedicated to my husband, who has been the inspiration, strength, and the *wind beneath my wings*. Without his help and inspiration, I could not have done this. I am grateful for his presence and grace. I am much obliged to the Mighty Planner, who has given me this opportunity to uplift myself.

Acknowledgments

I would like to recognize my preceptors and mentors for their guidance and encouragement. I would like to thank Mrs. Susan Theodoropolous, who encouraged me when I was down in the ditches and helped me climb out of it. I would like to recognize Ms. Michelle Lardner for sparking me with the idea for this EBP project. I would like to thank Mrs. Kathryn Thompson for being such a gracious and knowledgeable preceptor and guide, without whom I could not have reached my goal. I would like to thank Ms. Marnie Dodson for being such an excellent guide in teaching me National Database of Nursing Quality Indicators (NDNQI) and for championing the organizational front. Last, but not the least, Ms. Darlene Vrotsos for being the paramount instrument for the project's fruition.

Table of Contents

List of Tables

List of Figures

Section 1: Introduction

Introduction

Healthcare reform, consumerism, and advanced technology have changed the success of healthcare organizations and mandated that nurse leaders be skilled in human resources, strategic planning, and financial management (Institute of Medicine [IOM], 2010; Meyer, 2008; New, 2009). As leaders in healthcare in many settings, nurses have piloted and partnered in charting out new models of care delivery as the national movement of healthcare reform led the change in healthcare quality and the associated care (IOM, 2010). The American Association of Colleges of Nursing (AACN; 2010) attested that nurses should attempt higher education to advance their capacity to enhance the delivery of quality care to our nation's diverse patient populations.

Background

The concern of cost-effective, quality care led to the discussion of graduate education preparation and its impacts on nurse leaders' performance at the study site. The *Vision 2020: Future Nurse Managers Project Survey* indicated that nurse managers agreed that masters level (MSN) preparation would be the ideal educational requirement (Scoble & Russell, 2003). The study site expressed enthusiasm to incorporate IOM's (2010) recommendations to increase the number of baccalaureate nurses, doctorates, implement more nurse residency programs, and encourage nurses to engage in lifelong learning by 2020. The nurse leaders at the study site explored various avenues and concluded that there was a need for an analysis of the current status standing of the organization in this initiative. As a clinical nurse leader, I was asked to complete a

literature review and identify the gap within the organization. I proposed the impact of graduate education for nurse leaders (IGENL) study to analyse the gap in the organization.

Problem Statement and Population

The practice problem I chose for this project was to explore the effectiveness of masters-prepared nurse leaders versus non-masters-prepared nurse leaders by comparing the nursing care hours utilization, staff turnover, nurse-sensitive patient care outcomes data, as well as leadership charecteristics. The population for the project was nurse leaders who were patient care directors (APCD), patient care directors (PCD); nurses in senior leadership positions, including senior directors, associate vice presidents (AVP), vice presidents (VP), and the chief nursing officer (CNO); along with those who had staff reporting structures such as Registered Nurse clinical managers and clinical coordinators. In the study, I measured the effectiveness of the masters-prepared nurse leaders versus those who have less than a graduate education by comparing the measurement of their success in the efficient allocation and utilization of direct care nursing hours (hours per patient day [HPPD]; Duffield et al., 2011); nurse satisfaction and turnover (Purdy, Macintosh, Miguel, & Mitchell, 2014); and nurse-sensitive patient outcomes (Kane, Shamliyan, Mueller, Duval, & Wilt, 2007; Pappas, 2008), which lead to quality and safe patient care (Aiken et al., 2011; Tomey, 2009).

Purpose Statement

Kleinman (2003) has explicated that graduate education is essential for a nurse leader's performance, especially graduate preparation in nursing management and

business knowledge. I designed this evidence-based practice (EBP) study to examine the influence of graduate education on the effectiveness of nurse leaders by measuring their success in unit efficiency, staff satisfaction and turnover, nurse-sensitive patient care outcomes, and leadership attributes versus those of nurse leaders who do not possess a graduate education. The practice-related question guiding this project was: Does graduate level education augment the effectiveness of nursing leadership?

Project Goals and Objectives

The increasing consensus in the field is that the educational preparation of nurse leaders should be a masters degree as this level of education provides an in-depth comprehension of leadership issues in healthcare (AACN, 2011; Sheer & Wong, 2008). Drennan's (2007, 2012) cross-sectional survey study in Ireland established that graduate education for nurse leaders had positive effects in their practice, communication, teamwork, and problem-solving. Studies by Gonzàlez and Wagenaar (2003), Sutherland and Dodd (2008), Joyce (2009), and AACN (2011) concluded that graduate education has resulted in enhanced leadership and management capabilities, interpersonal communication, quality and risk management, critical thinking, utilization of research in practice, and in initiating positive change in the profession (AACN, 2011; Ashworth, Gerrish, & McManus, 2001; Drennan, 2010; Drennan & Clarke, 2009; Drennan & Hyde 2008a, 2008b, 2009; Gerrish et al., 2000; Gerrish et al., 2003). My ultimate goal with this EBP study was to establish the effectiveness of graduate education for nurse leadership and establish graduate education as the professional standard for nurse leadership. The outcome objective was to assess if graduate schooling aids nurse

leadership in their effectiveness by improving unit efficiency, allocation of direct nursing care hours, staff turnover, and nurse-sensitive patient care outcomes. The process objectives for assessing the IGENL were to

- establish the effectiveness of graduate educated nurse leaders' unit efficiency;
- determine staff satisfaction and less staff turnover in units managed by nurse leaders with graduate education; and
- institute improved nurse-sensitive patient care outcomes in the departments led by a masters-prepared nurse leaders.

The goals, objectives, and activities of IGENL are visually represented in Figure 1.

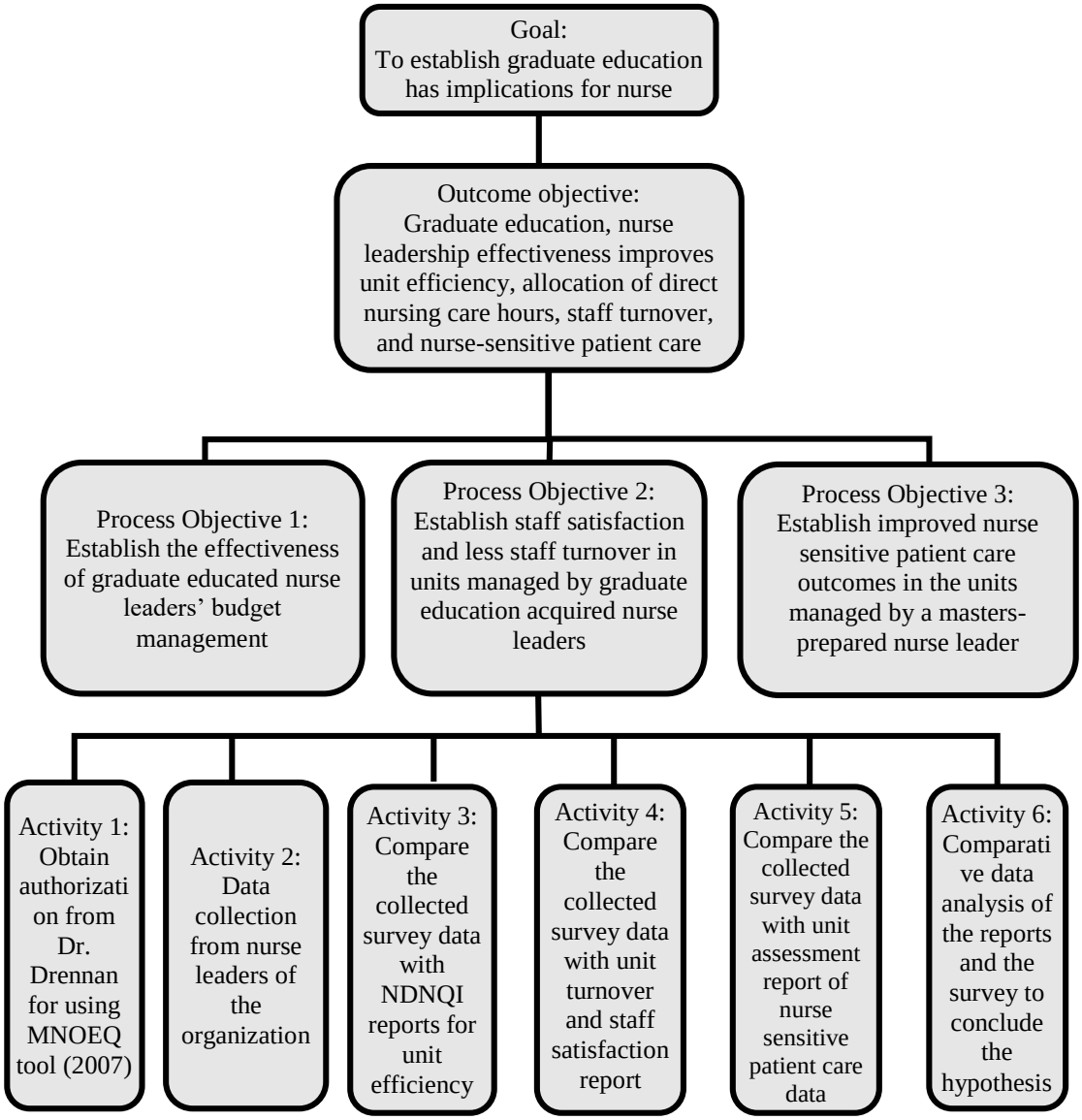

Figure 1. Hierarchy of goals, objectives, and activities.

Framework for the Project

The theoretical framework I chose for this evidence-based project about the impact of graduate education on the effectiveness of nursing leadership is the diffusion of innovations (DOI) theory by Rogers (2003). Diffusion of innovation model (DOI) (Rogers, 2003) helps with the diffusion of the organization's vision to all levels of staff.

DOI allows for new ideas to be put into practice and to evaluate their outcome. DOI also calls for attention to readiness to the stages of change inclusive of the fact that individuals are at different levels of acceptance for new ideas and changes. As explained by Kohles, Bligh, and Carsten (2013), the organization's vision could be conceptualized with DOI and the stakeholders and leadership could be actively involved in the decision-making process and guide the organization's to its success. The DOI theory also guides individuals to adapt to new ideas, products, practice, and philosophy. The steps include (a) process of knowledge helps to understand the function, (b) persuasion forming of idea, (c) decision to commit to the idea, (d) implementation putting the idea into practice, and (e) the final step of confirming the final outcome of the process (Kaminski, 2011). The DOI theory was chosen to help with understanding the process involved in the planning, implementation, and the outcomes of the IGENL project (Rycroft-Malone & Bucknall 2010, p. 57).

Nature of the Doctoral Project

This IGENL evidence-based project was a quantitative study where I employed the validated IGENL survey tool that was adapted from the Masters in Nursing Outcomes Evaluation Questionnaire (MNOEQ; Drennan, 2007) for identifying and describing the differences in the effectiveness of leadership among those who have attained a graduate education and those who have not. In this EBP project, I sought to establish the critical need for further research based on Drennan's work (2007, 2008, 2009, 2010, 2012) in the United States. In this study, I compared the effectiveness of masters-prepared nurse leaders and those who have less than a graduate education on the measurement of success

in the effective allocation and utilization of direct care nursing hours (hours per patient day [HPPD]; Duffield et al., 2011); nurse satisfaction (Purdy et al., 2014); and nurse-sensitive patient outcomes (Kane et al., 2007; Pappas, 2008) that lead to a quality and safe patient care (Aiken et al., 2011; Tomey, 2009).

The sample I used for the IGENL was the nurse leaders of a not-for-profit community hospital. The sample of organizational nursing leaders ranged from APCD to the CNO, and those who were at a level of staff reporting structures including Registered Nurse clinical managers and clinical coordinators. In this IGENL, I used an online web-based survey tool which was an adaptation of Drennan's (2007) MNOEQ tool, which was a paper survey tool. The data from the IGENL surveys were exported to Statistical Package for the Social Sciences (SPSS), Version 23 (IBM, n.d.) for analysis.

Other sources of evidence I gathered for this project included the organizational reports for the direct care hours utilization, National Database of Nursing Quality Indicators (NDNQI) and regulatory reports for staff satisfaction and turnover, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and *Greenie* reports in relation to nurse-sensitive patient outcomes, the infection control reports for individual units for hospital-acquired infection rates, and quality reports for hospital readmission rates. The validated IGENL survey tool I used was adapted from the MNOEQ tool developed by Drennan (2007) and used for studying nurse leaders. To summarize, I addressed the research question using comparative quantitative analysis of the IGENL survey results with the organizational data on the unit efficiencies to explore

if graduate education among nurse leaders makes a difference in the previously outlined outcomes.

Definitions of variables and outcomes

Effectiveness: The efficient use of the allocation and utilization of direct nursing care hours, unit staff turnover, and the differences in nurse-sensitive patient care outcomes (Kane et al., 2007; Kaplan & Porter, 2011; Kleinman, 2003; Pappas, 2008; Purdy et al., 2014).

Graduate level education: Any education that is above a baccalaureate nursing education, including graduate education in nursing, as well as other areas of specialty (Hamric, Hanson, Tracy, & O'Grady, 2013).

Nurse leader: Anyone who is an APCD of a unit, and those who are above this category including senior directors, associate vice presidents, vice presidents, chief nursing officers, and others who have supervisory cadre (Huber, 2013; McSherry, Pearce, Grimwood, & McSherry, 2012; Melnyk, Fineout-Overholt, Gallgher-Ford, & Kaplan, 2012; Sherman, Dyess, Hannah, & Prestia, 2013)**.**

Nurse-sensitive patient care outcomes: Derived from the organizational infection and quality reports by analyzing the hospital-acquired infections and hospital readmission rates (Kane et al., 2007; Pappas, 2008).

Staff satisfaction: A cluster of attitudes of different aspects of the nursing profession and as the extent to which employees like their jobs (Spector, 1997). Staff satisfaction and turnover is addressed with the NDNQI staffing reports (Djukic, Kovner,

Brewer, Fatehi, & Cline, 2013; Kelly, McHugh, & Aiken, 2011; NDNQI, 2010; Purdy et al., 2014).

Unit efficiency: Efficiency in the use of allocated direct nursing care hours for the department by the nurse leader (Suby, 2009).

Significance of the Project

Graduate education has empowered nurse leaders in influencing future models of care (Yoder-Wise, Scott, & Sullivan, 2013). Russell and Scoble (2003) established that midlevel and executive management positions must be knowledgeable and skilled. Kleinman (2003) concluded that graduate education, especially graduate preparation in nursing management and business, aided nurse leaders in career success.

Under the IOM's (2001) six core healthcare needs, the nursing leadership education standard falls under the category of efficiency. The new practice approach resulting from this project of nurse leaders' graduate education would optimize healthcare delivery with an improved knowledge base and improved skills and effectiveness in nursing leadership practice. My role in the development of the nurse leadership education policy at an organization level would help benchmark the difference in the effectiveness of the intervention (efficiency of masters-prepared nurse leaders and the control group of non-masters-prepared nurse leaders).

Reduction of Gaps

The American Organization of Nurse Executives (AONE; 2010) has reiterated that the educational preparation of nurse leaders should be at the master's level with a minimum of a baccalaureate preparation in its position statement. Studies have indicated

that the highest level of education of more than half of nursing leadership was either a diploma or an associate degree (National Sample Survey of Registered Nurses/Health Resources and Services Administration [HRSA], 2008; Sherman, Schwarzkopf, & Kiger, 2011). The relative need for measuring the gap between the existing services in communities or geographic areas has been explicated by Kettner, Moroney, and Martin (2008, p. 69). The relative need for measuring the gap between Drennan's studies (2007, 2008, 2009, 2010, 2012) in examining the differences in the effectiveness of masters-prepared nurse leaders and nonmasters-equipped nurse leaders by comparing the nursing care hours utilization, staff turnover, and nurse-sensitive patient care outcomes data for the respective groups and the need for a similar study in the United States were evidenced by the findings of the literature review I conducted.

Implications for Social Change

The product of this evidence-based study was to establish that a graduate education for nurse leadership should be a standard (AACN, 2011; IOM, 2010) at the organizational level and to illustrate that graduate-prepared nurse leaders are better equipped to lead nursing and improve patient outcomes with their knowledge, education, and experience compared to those who lack that graduate education. This project has the potential to contribute to positive social change by supporting the importance of graduate education for enhancing nursing leaders' abilities to improve patient outcomes, promote nursing satisfaction in the United States, and recommend organizational policies in the healthcare arena which could support nurse leaders in obtaining graduate education as a

strategy to improve the effectiveness in patient and nursing care. The limitations for realizing IGENL would be available data and time.

Assumptions and Limitations

The mission of the IGENL project was to identify the implication of graduate education among nurse leadership; to isolate pertinent research, evaluation, and data collection on graduate education and nurse leadership; to add to the research knowledge base about the importance of graduate education for nurse leaders; and to establish a professional regulation in promoting graduate education as a component for nurse leaders following the IOM and AACN guidelines recommendations at the organization level. The short-term goal of the program was to establish that there would be a positive impact on the effectiveness of nurse leadership with graduate education. The long-term goal of the IGENL program was to sustain the IOM's *Future of Change* (2010) notion in addition to the AACN's (2007) guidelines to nurse leadership graduate education. The availability of IGENL project's positive assumptions data that graduate education impacts the nurse leaders' effectiveness and its reliability of the data collected from surveys are organization specific. The limitation of administration, completion, wording, and consistency of the surveys would be controlled with online, web-based, encrypted surveys that are at a sixth grader' language with no abbreviations (Hodges & Videto, 2011). Even though Dr. Drennen's MNOEQ survey (2007) is the foundation for the survey questions IGENL uses only the Part 2 of the survey with added demographic questions pertaining to the need for the project and combine questions that might serve the EBP project's purpose that required validation. The validation of the reformatted

IGENL tool was be done with subject matter experts at the practicum site. Validity and reliability of the newly formatted questionnaire was reported in the manuscript. I explain the limitation of data and time in Section 4.

Summary

In Section 1, I provided the readers with an introduction to the IGENL project, its background, the purpose of the program, its goals and objectives, definition of terms used in the study, the significance of the project, and assumptions and limitations of the project. IGENL was a quantitative, comparative, descriptive EBP research project that focused on the effectiveness of the masters-prepared nurse leaders and their efficiency in the nursing care hours' utilization, staff turnover, and nurse-sensitive patient care outcomes when compared with their non-masters-prepared counterparts. The resulting data could lead organizations to develop their own practice guidelines and a policy that encourages nurse leaders who have a graduate education to pursue a Doctorate in Nursing Practice (DNP) and those who do not to attain a graduate education by 2020. In Section 2, I will present the literature review I conducted that explicated the practice question of IGENL.

Section 2: Background and Context

Introduction

For this project, I chose an EBP problem focused on determining the effectiveness of masters-prepared nurse leaders versus nonmasters-prepared nurse leaders by comparing the nursing care hours utilization, staff turnover, and nurse-sensitive patient care outcomes data. The purpose of this IGENL project was to compare and describe the effectiveness of nurse leaders who had completed a graduate education by measuring their success in unit efficiency, staff satisfaction and turnover, and nurse-sensitive patient care outcomes against those who do not possess a graduate degree. In Section 2, I will highlight the theoretical framework I used for this IGENL project and the literature review I conducted on the importance of trained nurse leaders, the significance of graduate education for nurse leaders, and the impact of graduate education among nurse leaders.

Theoretical and Conceptual Framework

The theoretical framework I chose for this IGENL of nursing leadership evidence-based project was the diffusion of innovations model by Rogers (2003). The diffusion of innovation model (DOI) (Rogers, 2003) helped me with disseminating the vision that graduate education among nurse leaders would change practice at all levels of staff at the study site. The DOI theory supports the utilization of the theory for adaption of new ideas, products, practice, and philosophy. The steps that would lead to the dissemination of IGENL would include knowledge or the awareness of the idea, persuasion in formation of the plan, decision to commit to the idea, implementation of that idea into

practice, and a final step of confirming/ adoption of the outcome of the process (Kaminski, 2011). DOI allowed for a way to practice new ideas and a way to track them towards the outcome.

Roger's DOI model (2003) stemmed from the change theory. It was a successful model for implementation and evaluation in healthcare and many other fields. DOI model (2003) has been used in different fields from examining willingness to pay for public television in Taiwan (Sarrina Li, Ku, & Liu, 2013), autism interventions (Dingfelder & Mandell, 2011), and customers' adoption of mobile banking (Dash & Tech, 2014). Lee, Hsieh, and Hsu (2011) has utilized DOI model for supporting the intentions of employees in using e-learning systems. The model has two concepts: The adoption of change among individuals and the process in which communication of the innovation among organizational members occurs. Roger's innovation-decision process leads to (a) *knowledge* (awareness of the innovation), (b) *persuasion* (person seeking the innovation with either a favorable or unfavorable attitude), (c) *decision* (the decision to accept or reject the change), (d) *implementation* (use of the innovation in practice), and (e) *confirmation* (evaluation of the results of the innovation).

The core value of the DOI is that the diffusion of innovation is not instantaneous but imparted over a period among the adopters (Rogers, 2003). The dissemination occurs in four stages–dissemination, adoption, implementation, and maintenance (Rogers, 2003). Dingfelder and Mandell (2011) opined that for a successful program innovation the diffusion should be compatible with the values, beliefs, history, and current needs of the adopters. The authors explored Rogers' framework and identified the five characteristics

of innovation that are influential in program evaluation: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003).

Kaminski (2011) recommended Rogers' DOI features such as the relative advantage, compatibility, complexity, reinvention, communication channels, time, trialability, and observability for evaluating the program's success and acceptance. In the IGENL, I will evaluate the plan by explaining the impact of graduate education to stakeholders (observability), clarifying the pertinence of graduate education for nurse leadership with evidence from literature (relative advantage) and how the provision of IOM and AACN guidelines for the education of nurse leaders is a professional standard (compatibility), explaining how the IGENL EBP program can make the guidelines a norm for the organization (trialability); and explaining its simplicity in enhancing the practice. I will also look at how the IGENL project meets the needs of the five groups of Rogers' adopters – innovators, early adopters, early majority, late majority, and laggards (Kaminski, 2011). The IGENL program will use the DOI's innovation decision processes of relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003) to evaluate its outcome. Figure 2 shows the employment of the DOI innovation-decision process (Rogers, 2003) and the steps of the evaluation process to IGENL (Hodges & Videto, 2011).

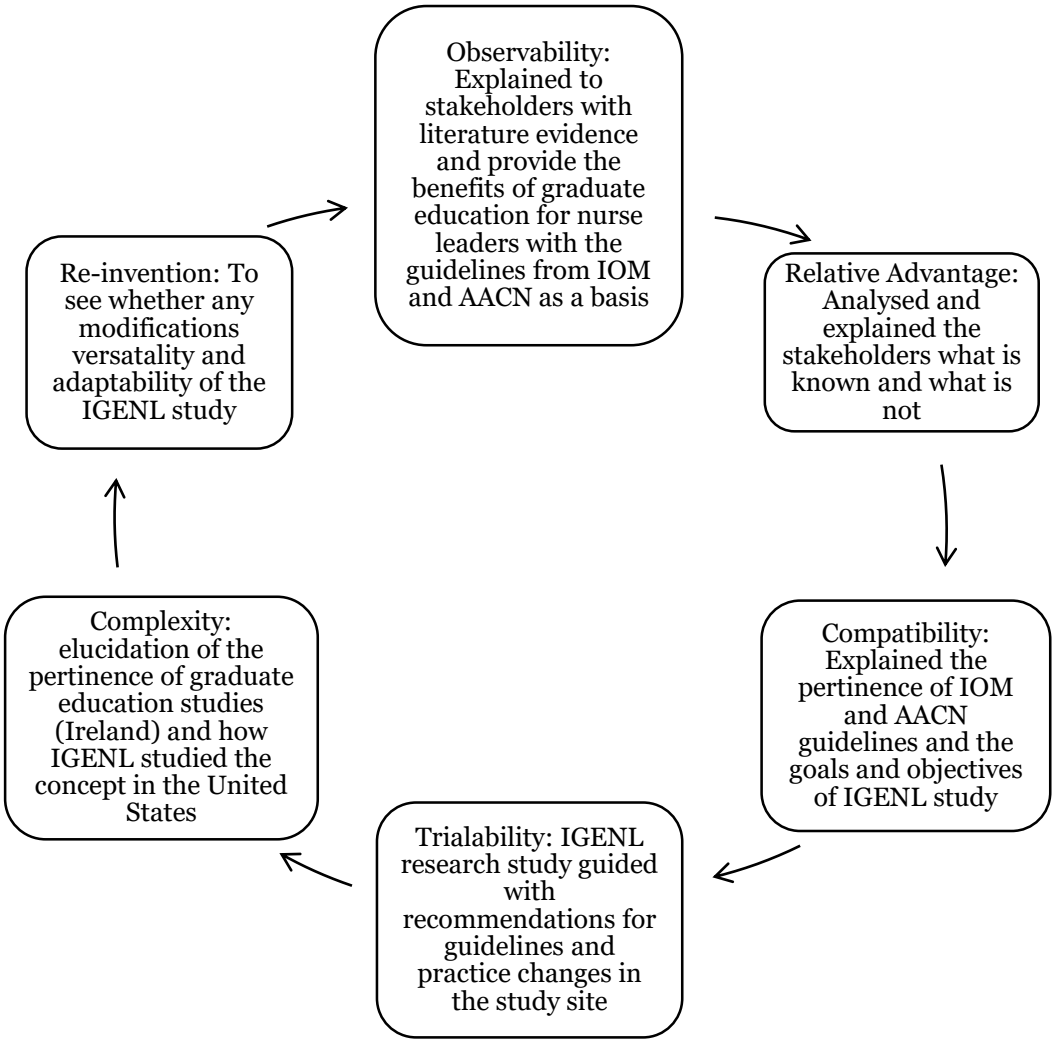

Figure 2. Employment of the DOI framework to IGENL.

Relevance to Practice

The literature I reviewed was identified by using the Ovid search engine, MEDLINE and CINAHL databases, and Google Scholar for research-based articles published in the English language between 2000 and 2016. Keywords such as *nursing leadership, patient outcomes, budget maintenance, IOM guidelines, NDNQI staff satisfaction, HCAHPS patient satisfaction, healthcare associated infections* (*HAI), readmission rates*, *staff turnover*, and *magnet components* were used. The combined

efforts of the searches resulted in identifying 1,124 references. Articles relevant to the Boolean terms *baccalaureate education, nursing leadership, IOM guidelines, ANA guidelines, graduate education, nursing administration; graduate education, budget management, patient outcomes, graduate education, staff turnover, staff satisfaction, graduate education, HAI, patient satisfaction, graduate education, 30-day readmission rates,* and *patient satisfaction* were considered for the literature review. I excluded some references from this assessment including a vast array of topics that were irrelevant key terms. The diversity of these articles was far too high to provide a complete review of them. A few examples were nursing errors, HAI, and patient satisfaction; financial budget management and nursing leadership; and graduate education and staff satisfaction. The emerging themes of the literature review were the importance of experienced nurse leaders for successful organizations and the pertinence of graduate education for nurse leaders.

Importance of Trained Nurse Leaders

Terhaar (2012) explicated that nurse leaders pave the path for success in an organization by promoting EBPs, maximizing workforce capabilities, and taking a stance in applying the EBP to the translation of best practices (White & Dudley-Brown, 2012). Research has shown that nurse leaders played a pertinent role in nursing and patient outcomes (lower medication errors, nosocomial infections, and patient mortality) while managing day-to-day operations, empowering staff, building productive work teams, maintaining quality, satisfying customers, and advancing the organization's healthcare culture (Kleinman, 2003; Kramer & Schmalenberg, 2012; Malloch & Porter O'Grady,

2009; McClure, 2005; Myer, 2008; New, 2009, Wong, 2015). They improved work environments with the implementation of a fair and just culture, executive rounds, interprofessional collaboration, team training, and care based on evidence at the microsystem levels (Laschinger, Wong, Cummings, & Grau, 2014; White & Dudley-Brown, 2012). They connected people with the purpose and facilitated organizational learning while modeling the culture of EBP and translation of that evidence (White & Dudley-Brown, 2012). Studies have shown that nurse leaders enhanced the effect on patient outcomes (Kleinman, 2003; Kramer & Schmalenberg, 2012; McClure, 2005; White & Dudley-Brown, 2012) by changing the organizational microsystems with astute allocation and utilization of direct care nursing hours ([HPPD] Suby, 2009), increasing nurse retention (Djukic et al., 2013; Kelly et al., 2011; Nei, Snyder, & Litwiller, 2015; Purdy et al., 2014); and improving nurse-sensitive patient outcomes (Kane et al., 2007; Pappas, 2008).

Significance of graduate education for nurse leaders

The Council on Graduate Education for Administration in Nursing's *Position Statement on the Educational Preparation of Nurse Executives and Nurse Managers* reiterated the importance of advancing knowledge for nursing leadership. Studies had indicated that the highest level of education of more than half of nursing leadership was at either a diploma or an associate degree (National Sample Survey of Registered Nurses/HRSA, 2008; Sherman et al., 2011). The IOM in the *Future of Nursing* (2010), the Tri-Council for Nursing (AACN, American Nurses Association [ANA], and AONE), and the National League for Nursing (NLN) emphasized graduate education as a

preferred educational level for nurse leaders. In a position statement, the AONE (2010) has reiterated that the educational preparation of nurse leaders should be at the master's level with a minimum of a baccalaureate preparation. It outlined that nurse leaders should have a competency in communication and collaboration, knowledge of the healthcare environment, leadership, professionalism, and business acumen for success (AONE, 2010; Nelson et al., 2014). The AACN (2011) demarcated that

> Master's education prepares nurses for flexible leadership and critical action within complex, changing systems, including health, educational, and organizational systems. Master's education equips nurses with valuable knowledge and skills to lead change, promote health, and elevate care in various roles and settings. (p.3)

Formal graduate education has been noted to be crucial for advancement in patient safety and quality in the ever-changing complex system of healthcare due to healthcare reform and cutting-edge technologies (Omoike, Stratton, Brooks, Ohlson, & Storfjell, 2011; Scott & Yoder-Wise, 2013). Evidence showed that effective nurse leadership with educational development has influenced healthcare costs, quality, change in unit culture and patient care quality, staff nurse satisfaction, and turnover (IOM, 2010; Jones & Gates, 2007; Meyers, 2008; Murphy, Warshawsky, & Mills, 2014; Omoike et al., 2011; Read & Laschinger, 2015; Vahey, Aiken, Sloane, Clarke, & Vargas, 2008).

Impact of Graduate Education Among Nurse Leaders

Graduate education has enriched the capabilities and the core working outcomes in healthcare environments (AACN, 2011; AONE, 2010; Committee on Enhancing the

Master's Degree in the Natural Sciences, 2008; Conrad, 1993; Joint Quality Initiative, 2004a, 2004b; National Sample Survey of Registered Nurses/HRSA, 2008; Sherman, Schwarzkopf, & Kiger, 2011; Yoder-Wise, Scott, & Sullivan, 2013). Interprofessional graduate education helped nurse leaders to develop leadership attributes such as accountability, character, and competence (AACN, 2011; Cummings et al., 2008; Gerard, Kazer, Babington, & Quell, 2014; Lau et al., 2013; Scott & Yoder-Wise, 2013) with which there were changes in their practice, communication, teamwork, and problem-solving (AACN, 2011; Ashworth, Gerrish, & McManus, 2001; Drennan, 2010; Drennan & Clarke 2009; Drennan & Hyde 2008a, 2008b, 2009; Gerrish et al., 2000; Gerrish et al., 2003; Gonzàlez & Wagenaar, 2003; Sutherland & Dodd, 2008; Joyce, 2009). Drennan's (2012) cross-sectional survey study established that nurse leaders' graduate education changed their practice, communication, teamwork, and problem-solving. The growing consensus was that the educational preparation of nurse leaders should be a master's degree as it provided an in-depth comprehension of leadership issues in healthcare and added to the myriad aspects of leadership proficiency (AACN, 2011; Drennan, 2007; Russell & Scoble, 2003; Scott & Yoder-Wise, 2013; Sheer & Wong, 2008; Sherman, Bishop, Eggenberger, & Karden, 2007).

Role of the DNP Student

I was part of the organization as a clinical nurse V (CN V). I had the responsibility of a staff nurse with added leadership attributes such as a role model, change agent, preceptor, mentor, clinical resource, and researcher. As a clinical nurse and a transformational nurse leader, I had the privilege to collaborate with the Perioperative

Business Operations and organizational Budgetary Administration Office on departmental charge capture and budgetary initiatives, conducted performance improvement projects, and research studies. As a transformational leader and a DNP student, I had a chance to be part of the boardroom to evaluate the gap analysis on the effect of graduate education among nurse leaders of the organization as the organization decided that the nurse leaders to have masters education by 2020 to be in line with the IOM's ideal (2010). The organizational ideal and the need for a gap analysis at the organization triggered the IGENL EBP project idea and was discussed with the organizational executive leaders. The perspective of positive impact of graduate education that I personally experienced further encouraged for the project. The activities that I was responsible were

- Conducted the needs assessment for the project and literature review;
- business planning including reaching-out, collaborated and involved key stakeholder of the organization;
- organizational Institutional Review Board (IRB) with protocol writing and approval of the IGENL;
- tool development and content validation of the IGENL survey;
- online build of the tool along with the survey administrator and the organizational information and technology department;
- conducted weekly and monthly huddles with the organizational executive leader for updates on the project;
- logistics and announcements for the study start;

- facilitated and answered questions about the project; and
- collected and analyzed the data after the survey conclusion.

Summary

In summary, the relative need for measuring the gap between Drennan's studies (2007, 2008, 2009, 2010, 2012) in examining the differences in the effectiveness of the masters-prepared nurse leader and a non-masters-equipped nurse leader by comparing the nursing care hours utilization, staff turnover and nurse-sensitive patient care outcomes data for the respective groups, and the need for similar study in the United States. In the literature review, I supported the need to replicate Drennan's (2007) study that was conducted in Ireland and others countries within the United States. In the literature review, I also demonstrated the effectiveness and importance of having trained nurse leaders for the nursing arena and the significance of graduate education for these nurse leaders. In the approach section that follows, I will describe the project design, the environment the project was conducted in, the sample, and the instrument that was used for data collection, the organizational data that were collected, and my data analysis approach.

Section 3: Collection and Analysis of Evidence

Introduction

For this project, the EBP problem I chose was to determine the effectiveness of the masters-prepared nurse leader versus a non-masters-prepared nurse leader by comparing the nursing care hours utilization, staff turnover, and nurse-sensitive patient care outcomes data. The purpose of the IGENL project was to compare and describe the effectiveness of nurse leaders who had completed a graduate education by measuring their success in unit efficiency, staff satisfaction and turnover, and nurse-sensitive patient care outcomes against those who had not earned a graduate degree. The practice-related question guiding this project was: Does graduate level education augment the effectiveness of nursing leadership? In Section 3, I will explain the project design including subject recruitment, online web based instrument formatting, validation of the IGENL survey tool, data collection procedures with protection of human subjects, analysis of the collected data, and results and implications of the IGENL survey outcomes.

Sources of Evidence

I gathered data from two primary sources of evidence in this project. The first source was data obtained directly from particpants who completed the IGENL survey online. The second source was archival data that were routinely gathered by the health organization targeted for this project. These sources of evidence will be described separately in the following subsections.

IGENL Survey

This IGENL project was a quantitative study that used the survey tool that was adapted and developed from the MNOEQ (Drennan, 2007) for identifying and describing the differences in the effectiveness of leadership among those who had attained a graduate education and those who had not. I chose the quantitative method due to the reasons as it (a) is reliable, objective and highly structured, (b) could be envisioned during the planning phase of the study (c) data is gathered using questionnaires or survey tools, (d) closed-ended questions in the survey tool provide quantifiable results, (e) uses statistical softwares to generalise a finding when the data is in the form of numbers, (f) reduces and restructures a complex problem to a limited number of variables, (g) establishes relationships between variables and establishes cause and effect, (h) tests theories or hypotheses, (i) assumes sample is representative of the population and (j) less detailed than qualitative data (Cresswell, 2013).

Survey Validation. I validated the IGENL survey, adapted from MNOEQ (Drennan, 2007), at the practice site. The IGENL survey was a 122-item questionnaire that was scored on a 5-point Likert-type scale (1 = Weak Understanding & Ability; 2 = Below Average Understanding & Ability; 3 = Average Understanding & Ability; 4 = Above Average Understanding & Ability; and 5 = Strong Understanding & Ability). The survey consists of three parts: demographics, premasters leadership understanding and ability, and postmasters leadership understanding and ability. The demographic questions (1–11) in the survey included questions about the level of education of the participants. Questions 12 through 21 were for nurse leaders who have only a baccalaureate education.

Participants without a graduate degree were asked to stop at Question 21 and participants with a master's degree or higher continued to answer all the thirty-two questions.

IGENL subscales. Like the MNOEQ tool (Drennen, 2007), the IGENL survey consisted of three subscales: professional practice, communication and teamwork, and problem solving. Table 1 identifies the three subscales and the questions of the IGENL subscale items classifications that were categorized accordingly.

Table 1

IGENL Tool Subscale Items Classification

Subscale	Item classification
Professional practice	Ability to question my practice
Professional practice	Ability to produce research evidence
Professional practice	Ability to introduce change in practice
Professional practice	Ability to challenge practice
Professional practice	Ability to develop solutions to practice problems
Professional practice	Ability to know what I am trying to accomplish
Professional practice	Ability to actively intervene in changing decisions
Professional practice	Ability to take decisions in practice
Professional practice	Ability to apply knowledge to a wide variety of disciplines to my practice
Communication/teamwork	Ability to orally communicate
Communication/teamwork	Ability to cope with conflict within a team
Communication/teamwork	Ability to communicate in writing
Communication/teamwork	Understanding of the feelings of a member of a group
Communication/teamwork	Ability to communicate well with others in my professional practice
Communication/teamwork	Ability to listen effectively
Communication/teamwork	Ability to work as a team
Problem-solving	Ability to produce solutions to complex problems
Problem-solving	Ability to appreciate the view point of others
Problem-solving	Ability to divide problems into manageable components
Problem-solving	Ability to listen to the ideas of others
Problem-solving	Ability to clearly describe a problem

Problem-solving	Ability to use knowledge from other disciplines in my reasoning
Problem-solving	Ability to develop ways to resolve conflict
Problem-solving	Ability to use knowledge and skills to defend my practice
Problem-solving	Ability to ask probing questions

Note. Adapted from "Masters in nursing degrees: An evaluation of management and Leadership outcomes using a retrospective pre-test design," by J. Drennan, 2012, *Journal of Nursing Management*, *20*(1), 102–112.

I scored the IGENL tool like the original MNOEQ tool (see Appendix) by Dr. Drennan with each question counting as a point on the scale. The demographic data were analyzed for the variables to describe the sample such as age, gender, attainment of a master's degree, work setting, current position in the organization, academic qualifications, professional qualifications, professional interests, and years as a nursing professional. The scoring of the IGENL is discussed elaborately in the Project Planning, Evaluation, and Summary section (Section: 4, p. 34). The relations to research question section (p. 39) also explains how the IGENL tool substantiates the research question.

The validation process for the IGENL survey included a panel of seven subject matter experts who assessed the relevance, clarity, and meaning of each question in its context. The panel members then completed the IGENL, which resulted in a mean score of 996.4, standard deviation of 21.8, and a Cronbach's alpha coefficient of internal consistency of 0.94 ($p = 0.06$). In the completed project, the Cronbach's alpha coefficient was .98 ($p = 0.02$) for the IGENL survey tool.

Organizational archival evidence. In this IGENL project, I also utilized organizational archival data such as the NDNQI (2010) and HCAHPS (n. d.) reports for

the period of January through June of 2016. NDNQI is a nationally-reputed nursing database that provides quarterly and annual reporting of structure, process, and outcome indicators to evaluate nursing care at the unit level (Press Ganey Associates, Inc., 2016). The NDNQI variables I obtained for this project were nursing care hours, nurse turnovers, RN satisfaction, and unit efficiency.

HCAHPS is a nationally-reputed, standardized, and publically-reported patient satisfaction survey required by the Centers for Medicare and Medicaid Services for all hospitals in the United States (Centers for Medicare and Medicaid Services, 2017). I gathered these data with the help of the organization's magnet program coordinator while accessing the respective data sets via secured Internet link to the websites with an unique sign on. The HCAHPS variables I examined for this study were patient days, falls, pressure ulcers, catheter-associated urinary tract infections (CAUTI), and central line-associated blood stream infection (CLABSI).

Data Collection Procedures

Sample. I selected the subjects based on if they had a nursing educational background and were in a leadership position that included reporting structures. The convenience sample for the IGENL consisted of the nurse leaders at the target healthcare organization and ranged from APCDs to the CNO and those who had staff reporting structures including clinical managers and clinical coordinators. Thirty-four units were represented from the organization. There were a total of 73 nurse leaders qualified for the study, and Table 2 provides a visual representation of their leadership positions in the organization.

Table 2

Position of Potential Participants for IGENL Study

Category	Number
RN clinical mangers	6
Assistant PCDs	27
PCDs	28
Executive nurse leaders	12
Total	73

Project Design

This IGENL project consisted of a voluntary completion of an online survey and data collected from organizational reports, (i.e., the NDNQI (2010) and HCAHPS data) to establish the efficiency of the nurse leaders who had graduate education. Two weeks prior to the start of the study, I electronically sent potential participants a PowerPoint slide announcing the start of study on the organization's intranet, "Well." The organization's chief nurse executive also announced the start of the study during daily nurse leadership huddles..

The week of the start of the study, I e-mailed an invitation, that included an encrypted link to participate in the study, to all nurse leaders by the survey administrator via Limesurvey (Schmitz, 2010). This electronic invitation included the implied informed consent verbiage (Schmitz, 2010). This e-mail was sent to all nurse leadership facilitating anonymity in the study. If willing to participate, subjects clicked the link provided in the e-mail to go to the Limesuvey IGENL survey site and completed the

survey. I downloaded the results of the completed surveys into a spreadsheet for statistical analysis.

Protection of Human Subjects

This study was approved by Walden University's IRB (approval number 04-19-16-0114439). I did not record the participants' names or contact information in any research records or in the intranet web portals during or at the end of the survey. The chief nurse officer and instittuional IRB's approval was gained during the IRB process for accessing these archival data. Survey data details were kept unidentified in a safe encrypted, password-protected web database of the practicum site. I included a noncoercion statement in the informed consent verbiage as participants were employed in the practicum site. Data will be kept under password-protected network file and the clinical research coordinator of the institution alone will have access to these files. The folder will be retained for 10 years and will be erased after 10 years as per institutional policy for all research data and documents.

Data Analysis

I tracked and documented the data in SPSS, Version 23 (IBM, n.d.). The aforementioned variables were coded into the data analysis software for analysis. Data were summarized and *t* tests were conducted to examine the difference in NDNQI and HCAHPS data between nurse leaders with and without a graduate degree.

Summary

In Section 3, I explained the IGENL evidence-based project design including the quantitative approach and the rationale for its selection, context and population of the

subject and recruitment, online web-based instrument formatting and validation of the IGENL survey tool, data collection procedures with protection of human subjects, description of the variables that were employed, and the collection and utilization of archival data from NDNQI and HCAHPS websites. In Section 4, I will present my analysis of the collected data, the results, and the implications of the IGENL survey.

Section 4: Project Planning, Evaluation, and Summary

Introduction

For this project, the EBP problem I chose was to determine the effectiveness of masters-prepared nurse leaders versus non-masters-prepared nurse leaders. The purpose of the IGENL project was to compare and describe the effectiveness of nurse leaders who had completed a graduate degree by measuring their success in unit efficiency, staff satisfaction and turnover, and nurse-sensitive patient care outcomes against those who had not earned a graduate degree. The practice-related question guiding this project was: Does graduate level education augment the effectiveness of nursing leadership? In Section 4, I will describe the findings and implications of this IGENL project study.

Findings and Implications

IGENL Project

I began data collection for the IGENL project in May 2016 and ended it in September 2016. The announcement of the project's start began with a 2 weeks' notice advertisement in the organization's intranet "Well," along with a verbal announcement in the leadership huddles conducted by the chief nurse officer of the organization. However, due to the Joint Commission regulatory inspection, the release of the of online IGENL survey was postponed to July 2016. A second 2 weeks' notice announcement was placed in the intranet from July 1st through the 15th per the IRB statement. Participants completed the online survey form July 2016 until September 2016, an 8-week period that was mandated by the institutional IRB.

Participants' demographics. I sent the IGENL survey to 73 (N = 73) qualifying nurse leaders at the study site (see Table 3). Eight of these were new staff who were hired during or after implementation of the study and did not get the encrypted link for participation so they were not included, resulting in the sample size of 65. Thirteen did not attempt the survey or open the encrypted link sent to them. Three voluntarily opted out, and one did not complete the survey after attempting. Twenty percent of the qualified sample did not attempt to open the e-mail survey request to participate. The aforementioned categories resulted with a projected and expected 73.85% participation rate (n = 48). The IGENL participation demographics are provided in Table 3.

Table 3

IGENL Participation Demographics

Categories	Numbers (Percentage)
Participants who did not attempt	13 (17.8%)
Qualified surveys	48 (73.85%)
Attempted, but incomplete	1 (1.5%)
Voluntarily opted out	3 (4.6%)
Not included	8 (11%)
Total number of qualified sample (N)	73

Note. The eight participants who were not included resulted in n = 65.

Fifty-two participants attempted the survey via the encrypted e-mail that was sent to them. Three opted out after the informed consent. One attempted the survey and did not complete. Out of the forty-nine subjects (n = 49) who completed the online IGENL

survey, three participants were males and 46 (94%) were females. The participants varied between the age of 28 and 62. Their years of practice in nursing ranged from 4 years to 41. There were five diploma nurses (10.4%), one associate degree holder, 38 had Baccalaureate of Science in Nursing (BSN), 11 had baccalaureates in other fields, 24 participants had a graduate education (16 Masters of Science in Nursing [MSN] and eight in other fields), four did not enter any educational designations, one Doctor of Philosophy (PhD), and one DNP. Fifty percent of the survey participants were graduate nursing degree holders (24/48). Sixteen had masters in nursing (33.3%) while 16.7% (8/48) in other fields such as business and advanced practice nursing such anesthesia, business administration, and positive organizational development and change. Seventy-four percent of the participants were certified in their specialty.

The participants belonged to either one of the 19 inpatient units or the 14 outpatient units. Maternal fetal medicine, preoperative screening and testing, anesthesia, and the clinical decision units were diagnostic units that were included for analysis in the departments or divisions they were structured under. The highest leadership participation was from the medical units (n = 10) and the second highest was from acute care, including the perioperative division (n = 8). A demographic profile of the participants follows in Table 5.

Table 5

Participants' Profile

Characteristics	*n* = 49
Age in years *M* (*SD*)	45.95 (9.55)
Gender % (*n*)	
Male	6.25 (3)
Female	93.75 (45)
Educational Attainment % (*n*)	
Diploma in Nursing	10.42 (5)
Associates in Other	2.08 (1)
Bachelors in Nursing	79.17 (38)
Bachelors in Other	22.92 (11)
Masters in Nursing	33.33 (16)
Masters in Other	16.67 (8)
DNP	2.08 (1)

IGENL survey instrument. I adapted the IGENL survey tool from Part II of Dr. Drennan's MNOEQ tool (Appendix). The survey had premasters (those who do not have a graduate degree) and postmasters (those who had a graduate degree) questions along with the demographic questions. Participants were required to answer the same items twice if they had a master's degree (as baccalaureate and masters respondents). The tool had 24 items that measured the nurse leaders' professional practice ability,

communication and teamwork, and problem-solving abilities before and after their master's education on a scale of 1 to 5 in order to identify the development of leadership and management abilities. In Table 1, I listed the subscales classifications and the 24 measured items. The IGENL asks respondents to rate their understanding and ability before a master's degree (premasters) and then to answer the same questions from the graduate degree holder's (postmasters) perspective on a 5-point Likert-type scale instead of the original MNOEQ 7-point scale (Drennan, 2007). The rationale for this approach was to account for the influencing factors such as education, employment experience, and maturation of the participants (Drennan, 2012).

The range of possible score was from 1 to 665 for nursing leaders without a graduate degree and a range of possible scores from 1 to 1,275 for nursing leaders with a graduate degree. The range of score of IGENL for those who had less than a graduate degree was between 201 and 606 (M = 460, SD = 90.2), while the range of scores for those with a graduate degree was 426 and 610 (M = 455, SD = 69.0) in the completed surveys. The Cronbach's alpha measure of internal consistency for the 122-item IGENL was 0.99, (p = < 0.000) and the Cronbach's Alpha graduate education scores was .98 (p = < 0.00).

Quality indicators. I included 34 units in the quality indicators. There were 20 inpatient units versus 14 outpatient units that quality indicators were obtained from. Two units did not fall in either category as they were included in the perioperative division indicators (the anesthesia and postanesthesia care unit). t tests were computed to determine the differences between masters-prepared and non-masters-prepared nurse

leaders for the quality indicators of patient falls, patient days, pressure ulcers, CAUTI, and CLBSI. Data on CAUTI and CLBSI were available only for inpatient units; therefore, the number of units included in the data analysis on these indictors varies. The analysis showed no significance between the quality indicators and the education of the nurse leaders. Table 6 shows the two-tailed significance of the quality indicators in the SPSS (IBM, n.d.) analysis.

Table 6

Quality Indicators' Significance (HCAHPS Data for Jan-June 2016)

Quality indicator	*t*	*df*	Sig. (two-tailed)
Falls	-.69	11	.50
Patient days	- .2.74	11	.02
Pressure ulcer	-2.21	8	.06
CAUTI	1.11	9	.30
CLBSI	-.39	11	.70

Nursing indices. I measured the nursing care hours, nurse satisfaction, nurse turnover, and unit efficiency indices with analysis of the NDNQI, Press Ganey Survey results, and organizational reports such as the *Greenie* report. The organization had the benchmark of achieving 85% or more for success in the unit efficiency index. Data were gathered over the period of January through June 2016.

I calculated nurse turnover from the organizational magnet report that was compiled by the magnet coordinator from the human resources report for the period of January through June 2016. For January through June 2016, the labor and delivery unit

had the most nurse turnover with 13, the adult medical unit had 12, the emergency department had 11, and the mother baby unit had 10. The rest of the units had less than 10 for this 6-month period. The maternal fetal medicine, cardiac catheterization lab, cardio pulmonary rehabilitation, ambulatory surgery center including gastrointestinal procedures, interventional cardiology and radiology, anesthesia, dialysis, radiation oncology, and clinical decision unit departments did not have data on nurse turnover, and the missing data were omitted in analysis.

I analyzed nurse satisfaction using the results of the NDNQI-RN job enjoyment subscale that consists of seven questions scored on a 1–6 point Likert-type scale. The average of these responses was calculated. Nurse satisfaction ranged between 3 and 5 on a 6-point scale. The cardiovascular step down, maternal fetal medicine, cardiopulmonary rehabilitation, anesthesia, radiation oncology, and clinical decision units had missing data because (a) the data were combined with another unit for reporting structures, (b) no RNs were part of that department, (c) the numbers were too low to report to NDNQI, or (d) the unit was not in existence at the time of the reporting. The results reported consisted of information from the nurse satisfaction scores among the reported units managed by a nurse leader with a graduate degree (n = 26) compared to units managed by a nurse leader without a graduate degree showed results that there was not a statistically significant difference between the two groups (nurse leaders with and without graduate degree).

As per the organizational plan, unit efficiency was efficacious when the numbers fell on or below the budget care hours for a unit for the fiscal year. I obtained this from

the Press Ganey Survey and organizational *Greenie* reports and calculated the results from the "Standard Overall" category of the Press Ganey Report, which is on a 100-point scale where > 85% denotes successful efficiency of a unit (Press Ganey Associates, Inc., 2016). The organization has set a benchmark score of > 85% on the *Greenie* report for the "Standard Overall" category to indicate unit efficiency. Unit efficiency on the *Greenie* report fell between 87 and 99. During the calculation of the unit efficiency data for the maternal fetal medicine, anesthesia, and interventional cardiology as these units were under another department which led to a skewed calculation. Thus, the missing data were omitted in the final analysis.

Units, such as the cardiovascular intensive care unit, which did not discharge patients; the behavioral health and recovery and wellness units where no surveys were done on these patients; the anesthesia, dialysis, cardiac catheterization, interventional cardiology/radiology, and cardio pulmonary rehabilitation units where there were no survey participation; and maternal fetal medicine, preoperative screening, operating room, cardiovascular operating room, and postanesthesia care units which were combined with other reporting departments had missing data that I eliminated during analysis. Of the remaining units (adult surgical, adult step-down, adult medical units, intensive care, cardiovascular step down, labor and delivery, mother baby, neonatal intensive care, pediatrics/surge management, maternal fetal medicine, center for outpatient surgery, cardiovascular operating room, emergency department, outpatient infusion, radiation oncology, wound healing and hyperbaric, and clinical decision), there

was no statistically significant difference in unit efficiency between units managed by a masters-prepared nurse leader compared to a non-masters-prepared nurse leader.

Nurse satisfaction, unit efficiency, and graduate education were compared to see the correlation among these variables. The significances fell to 0.484 for nurse satisfaction, at 0.600 for nurse turnover, and at 0.810 for unit efficiency. Table 7 presents the aforementioned details in tabulation.

Table 7

NDNQI/Press Ganey Survey and Greenie Reports' Significance

NDNQI/Press Ganey Indicator	*t*	*df*	Sig. (two-tailed)
Nurse satisfaction for Jan–Jun 2016	0.711	24	0.484
Nurse turnover for Jan–Jun 2016	0.534	18	0.600
Greenie report for unit efficiency	-0.244	21	0.810

Relations to the Research Question

The practice-related question guiding the IGENL project was "Does graduate level education augment the effectiveness of nursing leadership?". Variables that supported the research question were two-fold – (a) nurse leadership education and its effects on their professional practice, communication/teamwork, problem-solving, and (b) their unit efficiency. Unit efficiency variables included were nursing care hours, nurse satisfaction, and nurse turnovers for respective units along with HCAHPS quality indices such as patient falls, patient days, pressure ulcers, CAUTI, and CLBSI.

The total score on IGENL with graduate education fell at the significance of 0.860 (*two*-tailed). The *t*-tests that were computed to determine the difference in total

and subscale scores on the IGENL survey between master's prepared nurse leaders and nonmaster's prepared nurse leaders. While there was no significant difference in total scores on the IGENL survey between nurse leaders with graduate education and those that do not have a graduate degree (t = -.178, p = NS), nurse leaders with a graduate degree had a significantly higher score on the professional practice (t = -4.07. df = 2-. p = .001), communication/teamwork (t = -2.73, df = 20, p = .013), and problem solving (t = -4.93, df = 20, p = .000) subscales than nurse leaders without a graduate degree.

The data analysis showed that there was no significant difference with graduate education in regards to the unit efficiency. Increased patient days, increased ulcer statistics, increased CAUTI and CLBSI was noted in the units with nurse leaders who have less than master's degree. However, the data were not statistically significant in the data analysis.

IGENL project's relation to elements of the DOI theory. The IGENL EBP project utilized Roger's DOI decision model's relative advantage, compatibility, complexity, trialability, and observability for its evaluation. Dingfelder and Mandell (2011) opined that for the successful innovation of a program, the diffusion should be compatible with the values, beliefs, history, and current needs of the adopters. The EBP project researcher explored Rogers' framework and have identified the five characteristics of the innovation are influential in program evaluation: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). The relative advantage of the IGENL is that it is a replicate of Drennan's study that was done in Ireland and much needed in the United States. The IGENL is compatible with the

values, beliefs, history, and current needs of the practicum site as well the nursing practice. The IGENL is an easy to use tool and it can be trialed and observed as it is an online version of the Drennan's MNOEQ tool. The study results are not realized immediately. However, this realization of practice changes of the organizational policies, procedure and practice changes would be over a period of time.

Recommendations

Implications of IGENL Project Outcomes

The overall goal of the IGENL EBP project was to establish that graduate education for nurse leadership as a standard for hiring and promotion (AACN, 2011; AONE, 2010; IOM, 2010) at the organizational level and to illustrate that graduate prepared nurse leaders are better equipped to lead nursing with their knowledge, education, and experience of those who lack that graduate education. The new practice guideline that could stem from this project is the policy that encourages the nurse leaders who have the graduate education to pursue a DNP and those who do not to attain graduate education by 2020. The Figure 3 below explains the impact that the IGENL project could exert at the organizational level. However, the need for policy creation and implementation remains.

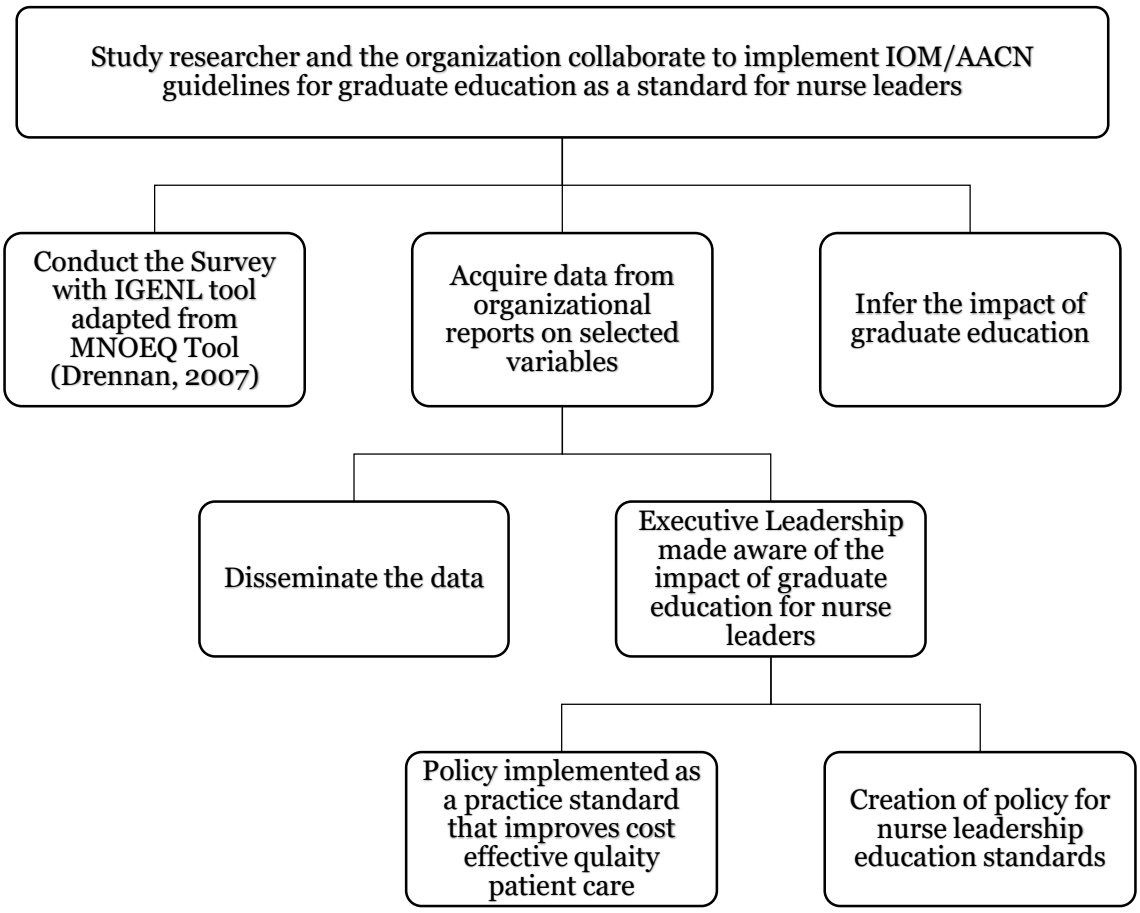

Figure 3. Conceptualization of IGENL impact.

Strengths and Limitations

The need for assessing the effectiveness of masters-prepared nurse leader has been studied by Drennan (2007) in Ireland and the need for graduate level education for nurse leaders. This IGENL EBP project aimed to replicate Drennan's study in the United States. IGENL measured the effectiveness of the masters-prepared nurse leaders and those who have less than a graduate education by comparing the measurement of their success in the effective allocation and utilization of direct care nursing hours (hours per

patient day [HPPD]; Duffield et al., 2011), nurse satisfaction (Purdy et al., 2014); and nurse-sensitive patient outcomes (Kane et al., 2007; Pappas, 2008) that lead to a quality and safe patient care (Aiken et al., 2011; Tomey, 2009).

One of the limitations of the IGENL project data analysis was amount of NDNQI, HCAHPS and Press Ganey missing data and its impact on the expected results. Some of the outpatient units' data were missing while data from some of the units' data were combined with similar acute care units under one leader. Time restriction of 8 weeks to collect data as per the organizational IRB approval also restricted the collection of data. Participation of the leaders due to joint commission inspection impeded.

Nurse sensitive indicators (HCAHPS data) - patient days, falls, pressure ulcers, CAUTI, and CLABSI - were collected on both inpatient and outpatient units but data was missing on the on the outpatient units (recovery and wellness, maternal fetal medicine, cardiopulmonary rehabilitation, preoperative screening/testing, center for outpatient surgery, operating room, gastrointestinal unit, interventional cardiology/radiology, dialysis unit, emergency department, outpatient infusion clinic, radiation oncology, wound healing and hyperbaric center, and clinical decision unit.

NDNQI and Press Ganey Survey data were collected on nursing care hours, nurse turnovers, nurse satisfaction, and unit efficiency. These data were collected both in inpatient and outpatient units. However, on the maternal fetal medicine, anesthesia and interventional cardiology/radiology units there were no data available.

The long-term goal of the IGENL study is to support the IOM's *Future of Change* (2010) and the AACN's (2011) recommendation for graduate education for nurse leaders.

The pathway to implementing the nursing leadership's education to BSN by 2016 and graduate level education as a requirement for nursing leadership by 2020 is through practice and policy changes by the organizational executive leadership. The new practice guideline that would stem from the research is that the organization encourages the nurse leaders who have the graduate preparation to pursue a DNP and support graduate education for those nurse leaders who have yet to attain graduate degree by 2020.

Analysis of Self

The IGENL project has given me the opportunity to fulfill my obligation to do research as a clinical nurse leader and to pursue research as a personal goal. As a change agent and a DNP scholar, I looked at the impact of graduate education among nurse leaders. As a transformational leader and EBP practitioner, I identified the practice gap of impact of graduation education among nurse leaders, did a literature review that showed the key elements of importance of trained nurse leaders, the significance of graduate education among nurse leaders, and the impact of graduate education among nurse leaders (Mallory, 2010). During the process of realizing the IGENL project, I have become well-versed in scientific methods, including evaluation methods, systems and organizational theories, and health policy along with tool development and validation. This project has made me realize that my strength is in the company I seek and keep. With the acquired knowledge, I believe that I could lessen the gap between scientific discovery and clinical application by continuing the IGENL study further in an outpatient setting to bridge the limitations that this project had encountered. (Vincent, Johnson, Velasquez, & Rigney, 2010).

The IGENL project not only enhanced my skill as a research scholar with the practice of philosophical theories but also equipped me with the knowledge and use of the EBP project. The research processes guided me to hone my leadership skills by contributing to nursing leadership society. IGENL has led me to pathways in developing further research and publications for the nurse leadership arena.

Summary

The IGENL study added to the research knowledge that Drennan's (2012) cross-sectional survey study attested by looking at the effectiveness of masters-prepared nurse leaders. The project's ideal walked in line with the IOM's (2001; 2010) recommendation to encourage nurse leaders to continue with graduate education and enhance the efficiency improvement concept for health care by the through changing the way the microsystems work by best allocating and utilizing direct care nursing hours, nurse retention (Purdy et al., 2014); and nurse-sensitive patient outcomes (Kane et al., 2007; Pappas, 2008).

The IGENL survey tool was adapted from the MNOEQ tool (Drennan, 2007). It was validated at the practice site by content experts for content, meaning, and reliability. IGENL's internal consistency with a Cronbach's alpha coefficient of 0.94 ($p = 0.06$). In the completed project, IGENL's Cronbach's alpha coefficient was .98 for the IGENL survey tool.

IGENL looked at the nurse leaders' education level and their units' efficiency. It analyzed data from 34 inpatient and outpatient units of a not-for profit community hospital and their nurse leaders with the parameters of HCAPHPS data for falls, patient

care days, pressure ulcers, CAUTI, and CLBSI along with NDNQI and Press Ganey Survey data for nursing care hours, nurse satisfaction, nurse turnover, and unit efficiency.

IGENL tried to answer the practice question whether graduate level education augment the effectiveness of nursing leadership. The analysis showed no significance between the quality indicators and the education of the nurse leaders. However, nurse leaders with a graduate degree had a significantly higher score on the professional practice, communication/teamwork and problem solving subscales lead to the recommendation further research with without the restriction of time, data and participants which would lead to the full extent of answering the research question.

In summary, by investing in masters-prepared nurse leaders, the organization can excel not only in patient safety and quality care, but also reach higher standards in the Magnet model's components of transformational leadership, structural empowerment, and exemplary professional practice (ANCC, 2014). I will explain the IGENL dissemination plan, project summary, and conclusion in the following Section 5.

Section 5: Dissemination Plan

Introduction

I plan on disseminating the IGENL project information through multimodal presentations at the organizational, local, national, and international arenas. I would use poster presentations and or verbal presentations for the organizational staff, in a local, national, or international conference, with or without PowerPoint slides (Venkatesh, Croteau, & Rabah, 2014), handouts, or posters. I could also propagate the research findings through sending out a manuscript to be published in a peer-reviewed journal (Walden University, n.d.; Živković, 2014) such as the *Journal of Nursing Administration,* the American Nurses Association's *American Journal of Nursing,* the *Online Journal of Issues in Nursing,* or Wiley's online *International Journal of Evidence-Based Healthcare*. The standards and format for the selected publication would be followed as the format is unique to each publication (Grove, Burns, & Gray, 2013). The opportunity of open-access publishing will also be taken into consideration as it favors the ideal of reaching a worldwide audience at little or no cost to the reader, removing monetary and legal restrictions from Internet reading and fostering the culture of EBP, while providing access to readers and publishers alike (Heller, Moshiri, & Bhargava, 2013).

Summary and Conclusions

The need for assessing the effectiveness of masters-prepared nurse leaders was studied by Drennan (2007) in Ireland, and in the valid conclusions, Drennan attested to the need for graduate level education for nurse leaders. With this IGENL EBP project, I

aimed at establishing and furthering Drennan's research in the United States. In this EBP project, I measured the effectiveness of the masters-prepared nurse leaders and those who had less than a graduate education while comparing the measurement of their success in the effective allocation and utilization of direct care nursing hours (HPPD; Duffield et al., 2011); nurse satisfaction (Purdy et al., 2014) and nurse-sensitive patient outcomes (Kane et al., 2007; Pappas, 2008) that would lead to quality and safe patient care (Aiken et al., 2011; Tomey, 2009).

The goal of the IGENL project was to establish and sustain the notions of the IOM's *Future of Change* (2010) and the AACN's (2007) guidelines to nurse leadership graduate education. The pathway to the implementation of the nursing leadership's education to BSN by 2016 and graduate level education as a requirement for nursing leadership by 2020 is through practice and policy changes by the organizational executive leadership. The practice guideline stemming from this study would be that the organization encourages the nurse leaders who have graduate preparation for their role to pursue a DNP and those who do not to attain a graduate education by 2020.

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Appendix: MNOEQ Tool

Masters in Nursing Outcomes Evaluation Questionnaire

Please return your completed questionnaire in the enclosed stamped addressed envelope to:

Jonathan Drennan,
School of Nursing & Midwifery
University College Dublin
Belfield
Dublin 4

Masters in Nursing Outcomes Evaluation Questionnaire

Part 1

Demographic, Academic and Professional Profile

Please answer the following questions as they apply to you and your employment. Where indicated please tick the appropriate box.

Researcher Use Only

Q1

1. What is your **age**_____ years

Q2

2. Please indicate your **Gender:**

Female…….[ ]1

Male…….[ ]2

Q3

3. Please indicate your main mode of **attendance** during your Masters degree:

Full-time……..[ ]1

Part-time……..[ ]2

Combination of both full-time and part-time….[ ]3

Q4

4. Please indicate the **year** you completed your Masters Degree

_____ year

Q5

5. Please indicate the main **strand** in which you completed your Masters Degree

Clinical……[ ]1

Education…….[ ]2

Management……[ ]3

Advanced Practice……...[ ]4

Research……..[ ]5

Other……[ ]6 (Please Specify)_____

Q6

6. In which of the following settings do you **primarily** work?

Clinical Nursing……..[ ]1

Nurse Education……..[ ]2

Nursing Management…..[ ]3

Nursing Research……[ ]4 Q7

Other……[ ]6(Please specify)_____

7. Please specify your current **grade** (e.g. CNM II; College Lecturer; Clinical Nurse Specialist etc.) Q8

Current Grade_____

8. Please specify your grade **prior to commencing** your Masters degree (e.g. staff nurse, CNM II, nurse tutor etc.) Q9

Prior Grade_____

9. If you changed grade **since commencing or completing** your Master's Degree, would you say this was as a **result** of undertaking a Master's programme? Q10

Yes…….[ ]1

No……..[ ]2

10. Please indicate the **academic qualifications** you currently hold (select as many as apply and please specify)

Diploma…….[ ] (Please specify)_____ Q11

Higher/Postgraduate Diploma……[ ] (Please specify)_____

Bachelor's Degree…….[ ] (Please specify)_____

Master's Degree……[ ] (Please specify)_____

PhD……[ ] (Please specify)_____

Q12

Others……[ ] (Please specify)_____

11. Please indicate the **professional qualifications** you <u>currently</u> hold (select as many as apply)

RGN……[ ]1

RPN…….……...[ ]2

RNMH……[ ]3

RSCN……..[ ]4

RM……..[ ]5

Q13

RNT……[ ]6

Others……..[ ]7 (Please specify)_____

12. <u>During</u> your Master's programme did you **<u>work</u>?:**

Q14

Full-time while attending college (39 hours per week) ……[ ]1

Part-time while attending college (less than 39 hours per week)……..[ ]2

Q15

Job-shared while in college (worked week on or week off or less)…[ ]3

Other…….[ ]4 (Please specify)_____

13. How many <u>miles on average</u> per week did you **travel** to and from College?

_____ Miles

14. What **final award** did you achieve from your Masters degree (for example 1st class, 2:1, 2:2, <u>or</u> Pass, distinction etc.)

Q16a

_____ Award

15. Please indicate the main source of **fee** support you received throughout the programme:

Q16b

Parents……[ ]1

Spouse/Partner……[ ]2

Self……[ ]3

Q16c

Savings……[ ]4

Grant from health service……[ ]5

Loan……[ ]6

16. The following questions relate to your **academic** and **research** activities since completing your Master's Degree.

a). How many **articles** have you published in academic or professional journals since completing your master's programme?

Number_____ articles/publications

Q16d

b). How many **conferences** have you presented at since completing your master's programme?

Number_____ conferences

c). Have you received funding for **research** following completion of your master's programme? Q16dii

Yes……[ ]1
No……[ ]2

Q17

d). After you graduated from university, did enrol for a more **advanced degree** (for example MPhil or PhD)

Yes….. [ ]1 (Please state type of degree)
_____
No….. . [ ]2

↓

If **No** do you intend to apply for entrance to a higher degree programme in the next 12-months? Q.18

Yes…..[ ]1 (Please state type of degree) Q.19

_____

No….. [ ]2

17. Do your professional interests lie **primarily** in:

Teaching……...[ ]1

Research……...[ ]2

Clinical Practice.. [ ]3

Other…….[ ] (please specify) _____

18. How many **hours per week** (approximately and on average) did you spend on research and scholarly writing? _____ Hours.

19. Please rank the following Instructional technique in order of those **you** felt were most effective in facilitating your learning during your masters programme (for example if lectures were most facilitative rank it as **1**, if experiential learning was the next most effective rank it **2** etc.). Q.20

Instructional Technique	*Rank*
Co-operative learning	
Student presentations	
Group projects	
Experiential learning	
Student evaluations of each other's work	
Independent research dissertation	
Student-selected topics for course content	
Class discussions	
Lecture	
Small-group teaching	
Computer workshops	

20. Please indicate how many years you are **qualified** as a nurse (if you have more than one registration, please calculate from your first registration)

Years qualified _____

MASTERS IN NURSING OUTCOMES EVALUATION QUESTIONNAIRE

Part 2

DIRECTIONS: The statements below are designed to identify your understanding and ability in a number of academic and professional areas. Each item has 7 possible responses. The responses

range from **1** (Low understanding/Low ability) through **2, 3, 4, 5, 6** (increasing understanding/ability) to **7** (High understanding/High ability). Please read each statement and first rank your ability as a result of the course (**After my Masters)**. Next, think back and rank your ability before the commencement of the course (**Before my Masters).** If the statement is not applicable, please **leave it blank**.

	UNDERSTANDING AND ABILITY *Circle the appropriate numbers where you see yourself now as a result of the Masters course and where you saw yourself prior to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.*													
	After my Masters ⟹ **Before my Masters**													
Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to think critically	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to carry out a research project	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Overall research ability	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use a computer	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding of changes in the health service	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to produce scholarly reports or papers	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Knowledge and understanding of my specialist area	1	2	3	4	5	6	7	1	2	3	4	5	6	7

The ability to question knowledge	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to conduct a web search	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to form judgements on a clearly defined set of criteria	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to work at my own pace in my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⟹ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to identify areas worthy of research	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Evaluate arguments and evidence of competing alternatives to solve a problem	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to have a say on how my time is used in my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7

A deeper understanding of what nurses do	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding of the language of research	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to challenge practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use several methods to solve problems	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to work independently in my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to knowing what I am trying to accomplish in the workplace	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to develop solutions to practice problems through inquiry analysis and interpretation	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to read academically outside the discipline of nursing	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to undertake advanced technical nursing procedures	1	2	3	4	5	6	7	1	2	3	4	5	6	7

	UNDERSTANDING AND ABILITY *Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.*													
	After my Masters ⇒ **Before my Masters**													
Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to take moral & ethical decisions in practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to apply knowledge from a wide variety of disciplines to my practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to actively intervene in changing decisions in professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to provide research evidence to introduce change	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to question my practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to make appropriate patient referrals	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to take an holistic approach to my	1	2	3	4	5	6	7	1	2	3	4	5	6	7

professional practice														
Overall ability in interpersonal skills	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to express ideas and suggestions that are listened to and used in the workplace	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to weigh the pros and cons of a possible solution to a problem	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to plan/conduct health promotion sessions for patients/clients	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to write academically	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⇒ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to apply statistics to professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Understanding of cultural differences	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability in analytical and problem solving skills	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to work as a member of a team	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to cope with conflict within a team	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to communicate well with others in my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to defend my thoughts and actions on clinical practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to critically evaluate published research	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding of the feelings of members in a group	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to develop a research instrument or questionnaire	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to analyse and interpret quantitative data	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Ability to access relevant literature to your work	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to give advice to colleagues to solve problems	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to sustain my point of view in a discussion	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⇒ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to relate to people of different races	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to speak effectively in public	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Written communication skills ability	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Oral communication skills ability	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to write a summary of findings from a analysis of data	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Ability to adapt to social situations	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Overall leadership abilities	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Overall self-confidence	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to listen effectively	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to understand myself	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to criticise my own professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Overall teaching ability	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to learn how to learn	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Being open to changing my point of view	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use knowledge from other disciplines in my teaching	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⇨ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to recognise my limitations and strive to improve my potential	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Motivation to continue my learning	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding that there are limitations to my intellectual capacity	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to be self-directed in my learning	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to provide culturally appropriate care	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to statistically analyse research data collected in my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to undertake research to test my ideas	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to realise the interconnectedness between nursing knowledge and the knowledge of other disciplines	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Ability to identify knowledge, resources and people to solve problems	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to appraise others performance	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to appraise your own performance	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use academic databases such as CINIHAL, MEDLINE, ERIC	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⇒ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to critically evaluate the relationship between the various forms of knowledge that inform nursing.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to think analytically and logically	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Ability to communicate statistical information to others	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to publish	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to transform and rethink practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to work on collaborative projects as member of a team	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to give advice to patients and their carers about their illness and treatment	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Adequate knowledge to fulfil my professional role	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to reflect on professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding of theory and concepts that inform nursing practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to introduce new ideas at work that are informed by research	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to undertake and	1	2	3	4	5	6	7	1	2	3	4	5	6	7

direct administrative activities		

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⇒ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Intellectual self-confidence	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to ask probing questions that clarify facts, concepts or relationships	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to undertake clinical examination of patients	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to cope with change in the health service	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to develop ways to resolve conflict and reach agreement	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to divide problems into manageable components	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Ability to appreciate the viewpoint of others although it may differ to mine	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Overall confidence to practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use knowledge and skills to defend controversial positions in my practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to apply research to practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

After my Masters ⇒ **Before my Masters**

Understanding and ability:	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to use statistical software packages such as SPSS, Minitab or Data Desk	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use qualitative analysis software packages such	1	2	3	4	5	6	7	1	2	3	4	5	6	7

as NUD*ST or NvIVO														
Ability to give a presentation to my peers	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Overall academic ability	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding of statistical equations	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to influence change in the health service	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to establish a relationship with patients/clients	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Understanding of the political context of nursing	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to judge the merit of both quantitative and qualitative approaches to research	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use nursing theories to inform my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to analyse and interpret qualitative data	1	2	3	4	5	6	7	1	2	3	4	5	6	7

UNDERSTANDING AND ABILITY

Circle the appropriate numbers where you see yourself <u>now</u> as a result of the Masters course and where you saw yourself <u>prior</u> to commencing the Masters course. 1 = low ability/understanding through to 7 = high ability/understanding.

Understanding and ability:	**After my Masters**							**Before my Masters**						
	Low 1	**2**	**3**	**4**	**5**	**6**	**High 7**	**Low 1**	**2**	**3**	**4**	**5**	**6**	**High 7**
Ability to apply an abstract concept or idea to a real problem	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Actively search out feedback/critique from others on my professional practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to teach in my practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to use knowledge from other disciplines in my reasoning	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to clearly describe a problem	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Acquisition of new skills and knowledge	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to listen to the ideas of others with an open mind	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to produce creative and realistic solutions to complex problems	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to collect	1	2	3	4	5	6	7	1	2	3	4	5	6	7

qualitative data through interviews														
Ability to solve statistical problems	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to motivate and guide people to accomplish a task or goal.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to take a leadership approach within my practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Ability to manage time effectively in order to achieve intended goals	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Post-graduate Research Experience Questionnaire

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Part 3

DIRECTIONS: The statements below are designed to identify your attitudes about your experience of research supervision during your Master's degree. Each item has 5 possible responses. The responses range from **1** (Strongly Disagree) through **3** (Neither Disagree nor Agree) to **5** (Strongly Agree). If you have no opinion, choose response 3. If the statement does not apply to you please choose **9**. Please read each statement. Mark the one response that most clearly represents your degree of agreement or disagreement with that statement. Please respond to all of the statements.

	Strongly disagree	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**	**Does not apply**
1. Supervision was available when I needed it	1	2	3	4	5	9
2. The thesis examination process was fair	1	2	3	4	5	9
3. I had access to suitable working space	1	2	3	4	5	9
4. I developed an understanding of the level of work expected	1	2	3	4	5	9
5. The department provided opportunities for social contact with other postgraduate students	1	2	3	4	5	9
6. My research further developed my problem-solving skills	1	2	3	4	5	9
7. My supervisor/s made a real effort to understand the difficulties I faced	1	2	3	4	5	9
8. I had good access to the technical support I needed	1	2	3	4	5	9
9. I was integrated into the department's community	1	2	3	4	5	9

10. I learned to develop my ideas and present them in my written work	1	2	3	4	5	9
11. I understood the required standard for the thesis	1	2	3	4	5	9
12. I was able to organise good access to the necessary equipment	1	2	3	4	5	9

	Strongly disagree	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**	**Does not apply**
13. My supervisor/s provided additional research relevant to my topic	1	2	3	4	5	9
14. My research sharpened my analytical skills	1	2	3	4	5	9
15. I was satisfied with the thesis examination process	1	2	3	4	5	9
16. The department provided opportunities for me to become involved in the boarder research culture	1	2	3	4	5	9
17. I was given good guidance in topic selection and refinement	1	2	3	4	5	9
18. I had good access to computing facilities and services	1	2	3	4	5	9
19. I understood the requirements for the thesis examination	1	2	3	4	5	9
20. Doing my research helped me develop my ability to plan my own work	1	2	3	4	5	9
21. My supervisor/s provided helpful feedback on my progress	1	2	3	4	5	9

22. A good seminar programme for postgraduate students was provided	1	2	3	4	5	9
23. The research ambiance in the department or faculty stimulated my work	1	2	3	4	5	9
24. I received good guidance in my literature search	1	2	3	4	5	9
25. The examination of my thesis was completed in reasonable time	1	2	3	4	5	9
26. As a result of my research, I feel confident about tackling unfamiliar problems	1	2	3	4	5	9
27. There was appropriate financial support for research activities	1	2	3	4	5	9

	Strongly disagree	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**	**Does not apply**
28. As a result of my research I feel confident in teaching research to students and colleagues	1	2	3	4	5	9
29. My research helped me apply research findings in the clinical/educational/management setting	1	2	3	4	5	9
30. My research experience has helped me critically analyse published research relevant to my area of practice	1	2	3	4	5	9
31. I carry out investigations (research) in my practice to test my ideas.	1	2	3	4	5	9

32. Research is important to my professional practice	1	2	3	4	5	9
33. I am confident that I can apply research to my professional practice	1	2	3	4	5	9
34. I am confident that I can research an area of my professional practice	1	2	3	4	5	9
35. Overall, I was satisfied with my higher degree experience	1	2	3	4	5	9

Course Experience Questionnaire
Part 4

DIRECTIONS: The statements below are designed to identify your attitudes about your experience of your Master's degree. Each item has 5 possible responses. The responses range from **1** (Strongly Disagree) through **3** (Neither Disagree nor Agree) to **5** (Strongly Agree). If you have no opinion, choose response 3. If the statement does not apply to you please choose 9. Please read each statement. Mark the one response that most clearly represents your degree of agreement or disagreement with that statement. Please respond to all of the statements.

	Strongly disagree	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**	**Does not apply**
1. It was always easy to know the standard of work expected.	1	2	3	4	5	9
2. The course developed my problem-solving skills.	1	2	3	4	5	9
3. The teaching staff of this course motivated me to do my best work.	1	2	3	4	5	9
4. The workload was too heavy.	1	2	3	4	5	9
5. The course sharpened my analytic skills.	1	2	3	4	5	9
6. I usually had a clear idea of where I was going and what was expected of me in this course.	1	2	3	4	5	9
7. The staff put a lot of time into commenting on my work.	1	2	3	4	5	9
8. To do well in this course all you really needed was a good memory.	1	2	3	4	5	9

9. The course helped me develop my ability to work as a team member.	1	2	3	4	5	9
10. As a result of my course, I feel confident about tackling unfamiliar problems.	1	2	3	4	5	9
11. The course improved my skills in written communication.	1	2	3	4	5	9
12. The staff seemed more interested in testing what I had memorised than what I had understood.	1	2	3	4	5	9

	Strongly disagree	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**	**Does not apply**
13. It was often hard to discover what was expected of me in this course.	1	2	3	4	5	9
14. I was generally given enough time to understand the things I had to learn.	1	2	3	4	5	9
15. The staff made a real effort to understand difficulties I might be having with my work	1	2	3	4	5	9
16. The teaching staff normally gave me helpful feedback on how I was going.	1	2	3	4	5	9
17. My lecturers were extremely good at explaining things.	1	2	3	4	5	9
18. Too many staff asked me questions just about facts.	1	2	3	4	5	9

19. The teaching staff worked hard to make their subjects interesting.	1	2	3	4	5	9
20. There was a lot of pressure on me to do well in this course.	1	2	3	4	5	9
21. My course helped me to develop the ability to plan my own work.	1	2	3	4	5	9
22. The sheer volume of work to be got through in this course meant it couldn't all be thoroughly comprehended.	1	2	3	4	5	9
23. The staff made it clear right from the start what they expected from students.	1	2	3	4	5	9
24. Overall, I was satisfied with the quality of this course.	1	2	3	4	5	9
25. I felt part of a group of students and staff committed to learning	1	2	3	4	5	9
26. I was able to explore academic interests with staff and students	1	2	3	4	5	9
27. I learned to explore ideas confidently with other people	1	2	3	4	5	9

	Strongly disagree	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**	**Does not apply**
28. Students' ideas and suggestions were used during the course	1	2	3	4	5	9
29. I felt I belonged to the university community	1	2	3	4	5	9
30. University stimulated my enthusiasm for further learning	1	2	3	4	5	9

31. The course provided me with a broad overview of my field of knowledge	1	2	3	4	5	9
32. My university experience encouraged me to value perspectives other than my own	1	2	3	4	5	9
33. I learned to apply principles from this course to new situations	1	2	3	4	5	9
34. The course developed my confidence to investigate new ideas	1	2	3	4	5	9
35. I consider what I learned valuable for my future	1	2	3	4	5	9
36. I found my studies intellectually stimulating	1	2	3	4	5	9
37. I found the course motivating	1	2	3	4	5	9
38. The course has stimulated my interest in the field of study	1	2	3	4	5	9
39. Overall, my university experience was worthwhile	1	2	3	4	5	9

Please return your completed questionnaire in the enclosed envelope to:

Jonathan Drennan, School of Nursing & Midwifery