THE BOTTOM LINE: A STANDARDIZED APPROACH TO PREPARATION FOR

FINANCIAL MANAGEMENT AND BUSINESS ACUMEN

IN THE NURSE MANAGER ROLE

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Dedication and Acknowledgements

I want to thank my amazing family, friends, and mentors for all their advice, therapy sessions, and encouragement they have provided me over the last two years. I want to give a special shout-out to my non-healthcare family and friends who would politely ask how it is going and got a thirty-minute rant about healthcare finance. Thank you to my faculty advisor, Dr. Gill, for your advice, guidance, and understanding throughout this program.

Thank you to my wonderful partner, Adam, for all his support. In 2018, I told him I would never return to school after graduating with my master's degree. I only made it three years before going back. Thank you for your support and for listening to me talk about healthcare business and finance, even though you had no idea what I was talking about. You have been with me every step of the way, and I could not be more thankful for you. I promise I am done this time.

Probably.

Abstract

Background: After assuming the role, nurse managers are briefly introduced to healthcare business and finance concepts and not given the appropriate education or opportunities to learn and apply these principles which results in decreased contributions to organizations financial goals.

Purpose: This study is to explore the creation of a standardized financial and business management class for nurse managers that incorporates a detailed overview of healthcare business and finance concepts with specifically targeted education domains for the nurse manager role.

Methods: This project used a quality improvement quasi-experimental pilot design approach to test the effectiveness of the newly developed educational course for nurse manager skill, knowledge, and confidence development. The design also ensured the testing of nurse managers' perceptions about their preparation for the role.

Results: Post-survey mean scores increased overall compared to the pre-survey results. The project confirmed the following assumptions: 1) the standardized nurse manager business and finance orientation content focusing on daily operations instead of the broad concepts enhances nurse manager comfort. 2) The more structured exposure improved nurse managers' knowledge with financial and business concepts. 3) Standardized orientation for nurse manager roles ensures better preparation for handling daily operations.

Recommendations and Conclusion: Future research recommendations should include the outpatient and ambulatory services area. Further testing with a larger sample to confirm results is also recommended.

The project included a review of the current scholarly sources retrieved from the CINHAL, PubMed, and Proquest databases. Keywords included: Nurse Leader OR Nurse Leadership OR Nurse Manager AND Education OR Preparation OR Preparedness OR Readiness AND Financial Management OR Business Skill OR Business Management.

Background and Significance

The nurse manager role is critical in the business of healthcare. The nurse manager, while being a clinical expert in their area of practice, must also be business savvy, have expertise in financial management, and have a good sense of business acumen. These skills are crucial for the unit's financial health and for achieving strategic goals set by the organization. A deficit of knowledge of the finance and business responsibilities can severely impact a nurse manager's ability to achieve financial metrics and negatively impact their unit's overall state of being and limit the nurse manager's ability to negotiate and advocate for their unit's needs as it relates to budgeted care standards.

Unfortunately, nurse managers are often underprepared when assuming the nurse manager role related to financial and business acumen, (Arnaert et al., 2018). Many nurse managers are selected from the bedside of the unit in need because of their clinical abilities, with no prior knowledge or education in healthcare business and finance. Undergraduate nursing programs focus very little on the business of healthcare and graduate nursing programs do not prepare nurses with business and financial-related content related to a unit's day-to-day operations, which is essential knowledge for the roles and responsibilities of the nurse manager.

Nurse manager orientation competencies are not an adequate substitute for proper training and education in business and financial management. In McFarlan's 2020 study, she notes that nurse manager competencies often address business and financial competencies, but more is needed to equate to competence. Similarly, Ullrich et al. (2021) indicates in their review that there is a clear need for a nurse manager competency but did not indicate what content should be included.

Standardized training and education for nurse managers in finance and business are crucial for healthcare systems as healthcare evolves. Nurse managers should be able to contribute competently to financial and business initiatives to further the organization's goals. The nurse manager's role is vital in driving these goals' success. Organizations must address the need for preparation for the individuals in the key roles to benefit the organization further. This project will focus on finance and business content that can be standardized and translated to a nurse manager at any organization by focusing on meaningful content that is the basis of healthcare business and finance. This will allow for further standardization since it will not be specific to one organization.

Purpose Statement

This project aims to create a standardized nurse manager financial and business management class that elaborates on the high-level overview of the concepts that new managers are briefly introduced to when assuming the role and how they can apply them to practice in their daily operations. In completion of this project, the aim is that this class will allow new nurse managers to understand and apply the financial and business management concepts, translate them to the responsibilities of the role, help new nurse managers have informed discussions and understanding related to the operations of their unit(s), and have more substantiative discussions and contributions to their organization's financial and business decisions and initiatives. The class will need a sustainable model that others can reproduce so that standardization of this class and its content can occur to train future incoming nurse managers for the role without interrupting an organization's financial health. This will occur by using content that is not specific to the operations of a single organization but will teach fundamental terms, formulas,

and calculations for healthcare finance and business management and how to apply them to their daily operations.

Review of Current Evidence

In reviewing the literature, initial search terms were used in the CINHAL, PubMed, and Proquest databases. Key search terms were Nurse Leader OR Nurse Leadership OR Nurse Manager AND Education OR Preparation OR Preparedness OR Readiness AND Financial Management OR Business Skill OR Business Management. Inclusion criteria were articles published in the last five years. Exclusion criteria were articles in non-English languages, articles where the author gave a review but did not discuss methods, articles that focused on nurse executive education, and articles related to business and finance for the nursing role but for non-management roles. These search terms and exclusion criteria provided 1,705 article results. From those results, terms were refined to include 'Nurse Manager' AND 'Roles and Responsibilities' AND 'Business Management' OR Business Education' AND Financial Management' OR 'Financial Education' AND 'Preparedness' OR 'Readiness' OR 'Preparation' and the search resulted in 94 articles. The prominent central themes in these results were the lack of nurse manager competencies, lack of educational preparation, the evolution of the nurse manager role, and an unstable future of the nurse manager role.

As the nurse manager's role changes, procedures used to prepare the nurse manager have remained the same. A nurse manager must be equipped with the skills necessary to fill business and financial management. Although some research findings emphasize the lack of nurse manager competency and lack of educational preparation as negative values, Moore et al. (2016) discussed in their work that the evolution of the nurse manager role likewise affects nurse manager readiness in the field. Their research indicated that a large majority of the nursing

management workforce is approaching retirement age which places the leaders of tomorrow in the nurse manager role at high risk for role overload because as stress and burnout increase, role responsibilities also increase.

This literature review identified four consistent themes that hinder nurse manager role preparation for business and financial management. Namely, lack of nurse manager competency, lack of educational preparation, the evolution of the nurse manager role, and the unstable future of the nurse manager role as a large majority of the nursing workforce approaches retirement age.

Lack of Education Preparation

Nurse managers often feel vastly underprepared for business and financial management when assuming the manager role. Moore et al. (2016) found that 75% of participants reported feeling unsatisfied with their orientation to the role. Loveridge (2017), in her qualitative study on the stress in the nurse manager role, found that 91% of her participants reported feeling overwhelmed by the immensity of the role and were not prepared by orientation. Gunawan et al. (2017) explores this concept further and states how role factors, including role preparation, work complexity, and job demand, are defined by the nurse manager role and how the combination of the three role factors results in work stress and low performance. As a result, adequate role preparation is needed because of the high potential for role ambiguity and the direct influence role stress has on managerial performance.

For Dion et al. (2021), findings showed nurse managers lacking comfort with business and finance skills. Accordingly, financial literacy is not a universally mastered skill for nurses. The lack of knowledge prevents nurse leaders from making informed decisions and meaningful contributions to an organization's financial initiatives. Arnaert et al. (2018), in their integrative

review of the educational gaps for nurses in entrepreneurial roles, found that in the fifteen articles reviewed, all indicated that business skills, including financial management, needed to be improved in nursing education and preparation. These are necessary to properly undertake the nurse manager role in business and financial management. Waxman et al. (2018) further outline the necessary knowledge and skills a nurse manager must be prepared for when assuming the role. They note that business acumen needs to include not only the knowledge of financial content but also the understanding of how to apply it. They point out that an understanding of healthcare economics, budgeting, human resource management, and the ability to speak competently about the fiscal impacts of decisions made are crucial for success in the role.

One opportunity to prepare future nurse managers and leaders to possess financial knowledge and application is to address it at the undergraduate and graduate nursing education levels. Noh and Lim's (2015) assessment of nurses' educational needs for financial management demonstrates a clear need to adjust the nursing curriculum at the undergraduate and graduate levels to address this gap. In their assessment, they evaluated every nursing school in Korea (n=200), and only three nursing programs included a finance course as part of their nursing graduate studies.

Lack of Nurse Manager Competencies

Nurse managers lack adequate preparation from both graduate programs and core competencies for the nurse manager role. Nurse managers often list finance as the most challenging area of their role, as McFarlan (2020) noted in a study that examined implementing an educational intervention to improve nurse managers' knowledge of healthcare financial management. The literature draws attention to the need to develop nurse manager competencies for finance and business. Similarly, in national study findings, Warshawsky and Cramer (2019)

observed that only a few studies of nurse manager role preparation and development had been conducted and that policies and strategies are needed to develop nurse manager finance and business competency. These findings emphasize the need to re-educate nurse managers in relevant finance and business roles.

Ullrich et al. (2021), in their literature review, underscored the importance of appropriately educated aspiring nurse managers and recommended that nurse leaders should be trained locally to meet the specific needs of the organization. In addition, they indicated that the literature shows a clear need for nurse manager competencies in financial management and business skill without elaborating or describing the content of the competencies needed.

The development of nurse managers' financial and business competencies is especially needed when clinical staff are promoted from the bedside with no formal training or experience in the manager role. As McFarlan (2020) notes in her study, nurse managers often experience a 'learn as you go' phenomenon in the role, creating personal and professional stress. Nurse manager orientation often addresses financial management and business competency, but more is needed to translate to competence. Gunawan et al. (2017) also note that nurse managers are often selected from a clinical staff position but also point out that the hiring preferences of the decision-makers are influential in selecting candidates to support other characteristics like clinical practice or longevity in the position. They suggest that improved human resources and strategic recruitment planning for the selection of nursing manager candidates are needed; otherwise, it will negatively impact employee turnover, employee engagement, quality patient outcomes, and financial outcomes. Naranjee et al. (2019) created a framework describing what competency means in this role versus competence. They created a competence framework that

describes the knowledge, skill, and performance level required to perform in the nurse manager role and obtain the organizational goals.

Creating a financial and business competency for nurse managers can play a more significant part in meeting an organization's strategic goals. In their review, Garcia et al. (2021) held that the relationship between economic and sustainability policies concerning providing quality patient care should be the justification needed to develop managerial competencies, as it allows for a higher degree of performance and results in a health system. For Ficara et al. (2021), nurse managers felt success in the nurse manager role was preceptor dependent, which created barriers to becoming proficient in all areas required from the nurse manager role. Nurse manager competencies have predominantly been completed as high-level overviews of subject materials pertinent to the nurse manager role. The evidence suggests that the nurse manager's competency needs to be re-addressed to emphasize preparing new nurse leaders for business and financial management.

Evolution of the Nurse Manager Role

The American Organization for Nursing Leadership (AONL) released key competencies for the nurse manager role in 2015; however, the role itself needs to include standardization of expectations and duties. Kleinman (2003), in a study conducted on preparing the nurse manager for the role, argued that the healthcare industry has significantly changed, and roles of the nurse manager, nursing director, and nurse executive have shifted around, trickled down, and expanded with the market. In their mixed-method study, Kramer et al. (2007) indicated how the nurse manager role has shifted from being a management-focused role that focuses on the daily operations that were primarily insufficient to a transformational leadership role that facilitates autonomy in employees and participative management principles. As healthcare has grown, the

nurse manager role has grown with it. However, literature reviews show that role preparation assessment needs to be concurrent with what nurse managers are asked in their roles.

Future of the Nurse Manager Role

More experienced nurses have predominantly filled nurse manager roles. With a large group of this nursing population now approaching retirement age, uncertainty lurks in the future of the nurse manager role. Warshawsky and Havens (2014), in their study, noted that 72% of the nurse leaders they surveyed planned to resign from their position in the next five years. In another study, Moore et al. (2016) yielded almost similar results by finding that 55% of respondents in a 2006 aging workforce survey responded that they would be retiring by 2020. Also discussed in the study was that the nurse manager role is at high risk of role overload because stress and burnout have significantly increased just as the role responsibilities have increased and that nurse manager turnover related to stress and burnout due to increasing role responsibilities should be a priority to organizations. Phillips et al. (2017), in their cost-benefit analysis for nurse manager turnover, indicated that replacing a nurse manager costs 75% to 125% of what is paid as their annual salary and that fewer than 30% of organizations have a succession plan in place. There is a clear need for development to address the increasing burnout and turnover rates among nurse managers, which will further curb related financial implications on health organizations. Of the utmost importance is to better prepare the new incoming nurse leaders of tomorrow.

Summary of the Literature

This literature review presents four consistent themes related to the nurse manager's role as vital to preparing the nurse manager to perform efficiently within business and financial management. These themes, as discussed, are lack of nurse manager competency, lack of

educational preparation, the evolution of the nurse manager role, and the unstable future of the nurse manager role (as a large majority of the nursing workforce approaches retirement age).

This literature review put forward a clear need for developing and improving the nurse manager to a standard that allows for efficient operations within business and financial management, this in turn, will allow nurse managers to make decisions that are beneficial to the organization at a systems level and improve the bottom line. The literature demonstrates that nurse managers lack confidence in the business and financial management responsibilities of their role but highlights that the nurse manager position is one of the most crucial roles for healthcare organizations to meet their financial targets. The literature also suggests that the orientation of nurse managers only focuses on a high-level overview of these complex healthcare business and financial concepts and needs more practical demonstration of these concepts before completing orientation. Additionally, nurse manager orientation often relies on 'in the moment' educational practices, which are not conducive to facilitating a comprehensive nurse manager orientation.

Next Steps

A particular type of educational intervention focusing on the standardization, elaboration, and application of the business acumen and financial management content that nurse managers receive upon assuming their role will target this gap identified in the literature. Standardization can be achieved by utilizing content not specific to one organization's operational practices but by teaching and developing nurse managers insight into industry-standard healthcare business and finance foundational knowledge, formulas, and calculations. Additionally, focusing the design of the content of the intervention on applying it to daily operations and practice of the role

and how it relates to the organization's strategic plan will improve nurse managers' proficiency and confidence with the business and finance portion of their role responsibilities.

An educational intervention targeting these educational gaps in preparing nurse managers for their role was created based on the American Organization of Nurse Leaders 2014 framework for nurse manager competencies. This framework has been shown in the literature to increase nurse managers' confidence and proficiency when used as the basis for nurse managers continuing educational courses, specifically around business and finance. The proposed educational project coalesces these findings in the literature with the framework and expands them to include the application of the content to daily practice and operations. This intervention is designed to specifically addresses the disparity of information available regarding translating educational content that has been identified as successful in improving nurse manager knowledge, confidence, and proficiency regarding business and operational financial practices. This was achieved by designing the course content to be standardized to industry standard information and applicable to any organization's business and finance practices, specifically focusing on how the nurse manager can use the content and apply it to their daily operations and practice. This proposed class design will make progress in standardizing the nurse manager orientation for the financial and business portion of the role.

Theoretical Model

This project was designed to develop nurse manager finance and business skill in the nurse manager role to increase their ability and confidence to execute daily operations to meet their organizations' financial targets and increase their knowledge, comfort, and confidence when participating in business and financial conversations about their unit and its operations. The nursing theory used to guide the project's development was Benner's novice to expert theory.

This theory focuses on using both a solid educational foundation and personal experiences to develop skills, and this served as the guiding principle for developing the educational interventions content. Benner's theory outlines five levels of nursing experience: Novice, advanced beginner, competent, proficient, and expert (Appendix A). In her theory, Benner notes that strong foundational knowledge and skill development are critical to knowledge application. Benner's theory emphasizes skill acquisition, experiences, clinical knowledge, and practical knowledge as the basis for moving from novice to expert (Benner, 1984). The education provided in the intervention will provide the participants with the foundational knowledge for business and financial management in the nurse manager role both at a system level and at the unit level while also using their personal experiences to engage with the content during the intervention and progress to the subsequent designation of Benner's theory with the content and in practice.

Conceptual Framework

The framework used to complete the intervention used the American Organization for Nursing Leadership's (AONL) 'Nurse Manager Core Competency Framework.' This framework outlines the nurse manager's role into three categories: The science, the leader, and the art (AONL, 2014). The framework outlines that all three are essential for success in the nurse manager role. However, this intervention specifically addresses 'the science' portion of the framework, as financial and business acumen are included in that portion of the framework for nurse manager development (Appendix B). The financial management portion of the framework outlines ten specific competencies to be successful in financial management within the nurse manager role, and this intervention will focus on five of these topics. The included competencies for this intervention are maximizing care efficiency and throughput, analyzing a budget and

explaining variance, conducting ongoing evaluation of productivity, recognizing the impact of reimbursement on revenue, and understanding the relationship between value-based purchasing and quality outcomes with revenue and reimbursement, (AONL, 2014). The intervention will focus on these competencies as they encompass the daily financial management expectations of the nurse manager's daily responsibilities and the relationship those responsibilities have to an organization's financial health.

The AONL's nurse manager core competency framework was used to guide the design of the educational intervention for targeted education specific to the business and finance education for the nurse manager role. This framework profiles the nurse manager's core competencies into three distinct requirements: The science, the leader, and the art. This intervention focused on 'the science' portion of the AONL framework, which includes the healthcare business and financial management competency requirements for nurse managers.

While all three requirements are necessary for a successful nurse leader, the framework's science component is the most immediately actionable portion to influence a nurse manager's preparation for the role. The science portion of this framework includes maximizing care efficiency and throughput, analyzing a budget and explaining variances, and conducting ongoing evaluations of productivity (AONL, 2014). This part of the framework directly relates to the nurse manager's daily responsibilities, and appropriate preparation of this component of the framework can immediately affect a nurse manager's ability to meet financial goals while still being new to the role.

Methods

Context

There is variability in the nurse manager role and the preparation for the role. Many health systems have different role responsibilities and training for the nurse manager and their daily operations expectations. At the site of this intervention, the hospital sites within the same health system had varying responsibilities and training in the nurse manager role. As a result, the education and training for a critical role in a health system's economic viability are not standardized, which produces variability in successfully meeting financial targets. Additionally, the nursing school curriculum does not provide nurse managers with the education needed to assume this role before coming out of school. Our undergraduate and graduate nursing programs are deficient in providing comprehensive education related to healthcare's complex financial reimbursement structure and teaching healthcare as a business. Hence, nurse managers often seek out this information to educate themselves, which also produces variability in practice.

The four consistent themes in the literature: lack of nurse manager competency, educational preparation for the role, the evolution of the role and responsibilities, and the unknown future of the role as many nurse managers are approaching retirement, all emphasize an essential need to standardize the nurse manager role to better prepare the incoming nurse leaders of tomorrow.

Taking this standardized approach to the role and creating a sustainable, consistent finance and business course specific to the nurse managers role will assist nurse managers in being prepared to speak to a unit's financial performance and positively affect both the health system's overall financial goals and their personal goals and strategic vision for their respective units. In addition, as nurse managers grow in their knowledge, proficiency, and confidence with

healthcare business and finance operations, they will be able to speak confidently on the costs and return on investments of new initiatives that they wish to implement that improve the delivery of safe, quality, and effective care while also being fiscally responsible.

Design

This study used a quality improvement quasi-experimental pilot design approach. It involved implementing a healthcare business and financial management course specific to the nurse manager role and their daily responsibilities. This intervention used a pre- and post-education intervention tool with a Likert scale rating system to self-rate their knowledge, skill, and confidence with the business and financial education expected of nurse managers in their roles. The evaluation tool was then used to assess the relationship between the implementation of a healthcare business and financial education class for nurse managers and their perception of their preparation for the nurse manager role and their proficiency while in the role as it relates to healthcare business and finance concepts that are required of them in the role. This design also explored the utility of the components of the educational content as well as judged the value of the educational intervention being implemented and its usefulness for standardizing the nurse manager role and orientation components. The purpose of this design was to test the effectiveness of a new educational course that developed the nurse manager's skill, knowledge, and confidence with healthcare business and finance, but also gain in-depth knowledge about how our nurse managers feel they are prepared to take these roles with no standardized educational programs provided to them in the current state. The content of the educational intervention was designed around the standard training set forth by the American Organization of Nurse Leader's nurse manager core competencies.

Translational Model

The translational model selected for this project was the Plan-Do-Study-Act (PDSA) model. The PDSA model outlines that change management can be broken down into a 4-step process: development, implementation, analysis, and reflection (appendix C). The first step in the PDSA cycle, plan, is where the aim statement is created, the current process is described, the problem to address is outlined, and the causes of the identified problem are identified. The second phase, do, is where change is implemented and where data, problems, unanticipated outcomes, and observations are recorded. The third phase, study, is where the results are studied using the guiding aim statement and collected data to evaluate if the change intervention resulted in improvement. Last, the fourth phase, act, is where reflection on the outcomes occurs and reflection occurs on if the process can be further improved (Deming, 2018).

Using the PDSA model, the aim statement, 'will the creation of a nurse manager course specific to the business and finance expectations of their role will improve nurse manager knowledge, skill, and confidence with these expectations of their role?' was developed. Next, a literature review was completed, the context of the problem was described, and causes were identified. From there, the educational course was developed based on the gaps in nurse manager education and training identified in the literature by using the AONL's nurse manager core competencies framework as a guide. The course was then implemented at the intervention site.

Data was collected and analyzed using a pre- and post-survey evaluation tool to determine if the course had met the aim statement. Based on the results of the data, the effectiveness of the intervention was assessed, recommendations for the course were noted, and the results and recommendations were shared with organizational leadership at the implementation site.

This model provided the ability to quickly measure the effectiveness of the designed educational course and determine if the intervention addressed the aim statement. Observations and unanticipated problems were noted on a Pareto chart as part of the 'study' process of the model and used in improving the course when making recommendations for practice (Appendix D).

Population

The participants in this study included inpatient nurse managers and assistant nurse managers at the designated site of the intervention. The participants were informed of the study via a recruitment email to the site-specific nurse manager email distribution list, which also includes assistant nurse managers, as their roles are also responsible for daily operations and responsible for financial outcomes. The sample population had between 1 and 33 years of experience in the nurse manager or assistant nurse manager role. The inclusion criteria included those currently in a nurse or assistant nurse managerial role at the site where the intervention occurred on an inpatient unit. The exclusion criteria excluded participants with significant previous healthcare business and finance experience outside the nurse manager or assistant nurse manager role and those in the outpatient setting. The outpatient units and clinics follow different business and budgeting practices than inpatient hospital units.

Setting

The intervention occurred in a large urban non-profit 1000+ bed academic medical center in the southeastern United States with a city population of over 300,000. The implementation site has over 50 inpatient units, each with a nurse manager and one to seven assistant nurse managers to run the daily operations of each unit.

Project implementation

Participants for this intervention were recruited by convenience sampling by sending out an email recruitment message to all inpatient nurse managers and assistant managers at the intervention site (Appendix E). The recruitment email specified that their participation was voluntary and that they could withdraw at any time.

Upon registering, the participants were assigned an ID for the study to de-identify their information, which they used to identify themselves on both surveys for pre- and post-survey score comparisons. They also received an informed consent sheet (appendix F) that notified them that there was no direct link to their email and that all data collected would be de-identified using Qualtrics, a secure HIPPA compliant used at the implementation site for research and quality improvement purposes. Upon enrolling and receiving their informed consent sheet and participant ID number, participants were sent the pre-survey questionnaire (appendix G) via an anonymous survey link using the Qualtrics program to complete two weeks before attending the intervention. Participants also received the post-intervention survey (Appendix H) two weeks post-educational intervention via an anonymous survey link using Qualtrics to complete.

After completing the pre-survey, the participants were sent the schedule of the didactic course offered for the intervention through the organizations learning management system. The course was offered on two dates, and each session took approximately one hour to complete. In addition, the didactic course was used for interactional purposes to apply educational learnings to participants' areas and experiences so participants can apply learnings in real time.

Primary data was collected via the pre-intervention and post-intervention survey, which was created and administered to each attendee to measure their perceived knowledge and comfort with healthcare business and finance concepts. The pre and post-interventional survey

used a combination of free text entry, yes/no, and Likert scale novice-to-expert style questions to measure participants' responses. Each survey took approximately 10 minutes for the participant to complete.

The pre-survey consisted of 32 questions; six were related to demographic information about the participant and their education and nursing experience. The remaining 26 surveyed reported knowledge, skill, and confidence regarding healthcare business and finance experience. The post-survey consisted of only 30 questions, as three of the demographic questions were removed to minimize the time participants were typing unchanging demographic data points to encourage survey completion. One question was added to the post-survey to assess if participants felt this course was beneficial to their daily roles. Qualitative data were obtained anonymously from the pre-and post-assessment.

The researcher created this instrument by reviewing the conceptual framework and aligning those concepts with core education for daily operations in the nurse manager. Core educational components were derived from the AONL's nurse manager competency framework, and the educational content was written using the content of two healthcare business and finance educational resources. The instrument measured if their knowledge of healthcare business and finance was improved, if their opinions on their nurse manager orientation appropriately prepared them for the financial and business concepts required for daily operations of an inpatient hospital unit, and if the educational intervention was beneficial to them in their role.

The instrument created measured participant's knowledge and comfort with the following business and financial concepts and scenarios:

- Labor and productivity variance calculations,

- Calculating total full-time equivalents (FTEs) needed to staff an inpatient hospital unit

- Vacancy rate calculations

- Nurse hour per patient day calculations

- Reading budget account reports

- Calculating overtime percentages

- Calculating paid time off (PTO) percentages

- Understanding worked hours versus paid hours

- Calculating gross revenue needs

- Understanding billing and collections

- Understanding an operational budget

- Creating a capital budget

- Understanding a cash flow budget

- Forecasting volume and revenue for an inpatient hospital unit

- Forecasting expenses for an inpatient hospital unit

- Understanding revenue increments associated with throughput and length of stay

- Preparing a profit and loss statement for an inpatient hospital unit

- Creating a business plan

  Connecting clinical quality improvement outcomes to financial outcomes

Timeline and Critical Milestones

The project timeline and critical milestones can be viewed in the Gantt chart image below (appendix I).

Task	2022												2023				
	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May
Revisit literature to update literature	▭																
Edits based on new literature and instructor feedback		▭															
Develop methods for implementation		▭															
Develop content for implementation and			▭														
IRB application (UNCG & site)				▭													
Meet with clinical education and begin								▭									
Preliminary Data Analysis										▭							
Statistical analysis											▭						
Begin writing findings of intervention												▭					
Complete first draft of DNP paper													▭				
Revisions													▭				
Complete 2nd draft of DNP paper and rvisit literature review														▭			
Revisions															▭		
Final Draft of DNP paper complete and submitted																▭	

IRB Approval

Ethical protections of the participants were ensured as this intervention was reviewed by both the implementation site IRB board and The University of North Carolina at Greensboro's IRB board. In addition, participants were notified that their participation was voluntary and that they could withdraw at any time.

The created instrument was delivered to each recipient using a secure send feature that automatically encrypted the email and required institutional credentials to access the surveys to complete. Additionally, the surveys were created using Qualtrics, a secure and HIPPA-compliant program used by the implementation site for research purposes. The responses were stored securely using the encrypted box cloud storage utilized by the facility and were only accessible to the primary researcher and the facility's research coordinator. The collected de-identified data will be stored and deleted via the information technology data termination policy as stated by the implementation organization's policy and procedure.

Data Analysis

Table 1, Research Variables and Descriptions

Variable	Description
Financial	I feel confident with healthcare specific financial terms and concepts.
Business	I feel confident in my knowledge of healthcare as a business.
Calculating	I feel confident calculating my labor and productivity variance in real time.
FTE	I feel confident calculating the total FTEs needed to cover my unit.
Vacancy	I feel confident calculating my vacancy rate.
Nurse Hours	I feel confident calculating my nurse hours per patient day.
Labor	I feel confident in reading my labor and productivity report.
Budget	I feel confident in reading my budget accounts report.
PTO	I feel confident in calculating how much overtime/PTO I can approve.
Financial Performance	I feel confident contributing to conversations referencing my unit's financial performance.
Work Paid Hours	I feel confident in my understanding of worked hours vs. paid hours.
Gross Revenue	I feel confident calculating gross revenue needs.
Billing	I feel confident contributing to conversations about billing and collection for my unit.
Operating	I feel confident contributing to conversations about the operating budget.
Capital	I feel confident contributing to conversations about the capital budget.
Cash Flow	I feel confident contributing to conversations about the cash flow budget.
Variances	I feel confident contributing to conversations regarding all 7 types of variances associated.
Volume	I feel confident forecasting my unit's volume and revenue.
Expenses	I feel confident forecasting my unit's expenses.
Unit Factors	I feel confident contributing to conversations about the factors that influence my units.
Efficiency	I feel confident in my understanding of productivity and efficiency.
Revenue Increments	I feel confident contributing to conversations about revenue increments associated with throughput and length of stay.
Profit Loss	I feel confident preparing a profit and loss statement for my unit.
Opportunities	I feel confident in developing a business plan to justify new initiatives, opportunities, or expansions for my unit.
Outcome	I feel confident contributing to conversations connecting clinical quality improvement outcomes and financial outcomes.

Table 1 (appendix J) represents the list of research variables that were examined pre- and post-survey. A 5-point Likert scale (i.e., 1 = strongly disagree thru 5 = strongly agree) was used to measure each variable.

Since the research variables were measured based on a 5-point Likert scale (i.e., 1 = strongly disagree thru 5 = strongly agree), the Wilcoxon Signed Ranks Test was carried out as a non-parametric test to examine the mean difference of the variables pre and post-survey. The Wilcoxon Signed Ranks Test was conducted to examine whether there is a significant difference in the mean values of 25 ordinal variables between pre and post-survey. Table 2 (appendix K) shows the Wilcoxon Signed Ranks Test results between pre and post-survey.

Table 2, Results of Wilcoxon Signed Ranks Test between Pre and Post Survey

Variable	Mean			Sum of Rank		Wilcoxon		
	Pre-Survey	Post-Survey	Mean Difference (Δ = Post - Pre)	Negative Rank (Post < pre)	Positive Rank (Post > Pre)	Z-value	P-value	Significant Difference
Financial	3.59	4.47	0.88*	0	36	-2.565	0.01	Yes
Business	3.12	4.35	1.23**	6	130	-3.334	0.001	Yes
Calculating	2.94	4.47	1.53**	0	78	-3.093	0.002	Yes
FTE	3.88	4.94	1.06**	0	78	-3.211	0.001	Yes
Vacancy	3.82	4.82	1**	0	66	-3.064	0.002	Yes
Nurse Hours	2.82	4.71	1.89**	0	91	-3.307	0.001	Yes
Labor	3.53	4.71	1.18**	0	91	-3.27	0.001	Yes
Budget	3.41	4.53	1.12**	0	66	-2.98	0.003	Yes
PTO	3.88	5	1.12**	0	55	-2.877	0.004	Yes
Financial Performance	3.12	4.35	1.23**	3.5	87.5	-2.98	0.003	Yes
Work Paid Hours	4.24	4.88	0.64*	0	28	-2.46	0.014	Yes
Gross Revenue	2.06	4.06	2**	7	146	-3.364	0.001	Yes
Billing	1.53	3.65	2.12**	6	147	-3.423	0.001	Yes
Operating	3	4.47	1.47**	3.5	116.5	-3.27	0.001	Yes
Capital	4.18	4.88	0.7**	0	55	-3.051	0.002	Yes
Cash Flow	1.76	4.12	2.36***	0	136	-3.611	0	Yes
Variances	2.12	4.06	1.94***	3	150	-3.524	0	Yes
Volume	2.47	4.06	1.59**	13.5	122.5	-2.854	0.004	Yes
Expenses	2.88	4.29	1.41**	0	91	-3.247	0.001	Yes
Unit Factors	4.18	4.82	0.64**	0	55	-3.051	0.002	Yes
Efficiency	4.18	4.94	0.76***	0	91	-3.606	0	Yes
Revenue Increments	3.76	4.76	1**	0	66	-3.022	0.003	Yes

Profit Loss	1.82	4	2.18**	5.5	147.5	-3.437	0.001	Yes
Opportunities	2.94	4.88	1.94**	0	105	-3.325	0.001	Yes
Outcome	4.06	4.88	0.82**	0	66	-3.125	0.002	Yes

N = 17; * P< 0.05; ** p<0.01; *** p<0.001,

Financial

As shown in table 2 the mean value of Financial for post-survey (4.47) was higher than the pre-survey (3.59), indicating 0.88 increase in the financial score from pre- to post-survey. The positive sum-of-rank, which refers to those cases having higher Financial score for post-survey than pre-survey, was 36, which is higher than the zero negative sum-of-rank. The Wilcoxon Signed Ranks Test results indicated that the Financial score has been significantly improved from pre-survey to post-survey at a 95% confidence interval because of a p-value 0.01, below the standard significance level 0.05; $Z = -2.565$, $P < 0.05$. The phenomenon suggests the effectiveness of the intervention in improving Financial score.

Business

As shown in table 2, the results of the Wilcoxon Signed Ranks Test indicated that the mean value of Business score from pre-survey (3.12) was significantly increased to post-survey (4.35), with 130 positive sum-of-rank compared to 6 negative sum-of-rank: $\Delta = 1.23$, $Z = -3.334$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Business score.

Calculating

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Calculating score from pre-survey (2.94) was significantly increased to post-survey (4.47), with 78 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.53$, $Z = -3.093$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Calculating score.

FTE

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of the FTE score from pre-survey (3.88) was significantly increased to post-survey (4.94), with 78 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.06$, $Z = -3.211$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving FTE score.

Vacancy

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Vacancy score from pre-survey (3.82) was significantly increased to post-survey (4.82), with 66 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.00$, $Z = -3.064$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Vacancy score.

Nurse Hours

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Nurse Hours score from pre-survey (3.82) was significantly increased to post-survey (4.71), with 91 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.89$, $Z = -3.307$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Nurse Hours score.

Labor

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Labor score from pre-survey (3.53) was significantly increased to post-survey (4.71), with 91 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.18$, $Z = -3.270$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Labor score.

Budget

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Budget score from pre-survey (3.41) was significantly increased to post-survey (4.53), with 66 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.12$, $Z = -2.980$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Budget score.

PTO

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of PTO score from pre-survey (3.88) was significantly increased to post-survey (5.00), with 55 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.12$, $Z = -2.877$, $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving PTO score.

Financial Performance

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Financial Performance score from pre-survey (3.12) was significantly increased to post-survey (4.35), with 87.5 positive sum-of-rank compared to 3.5 negative sum-of-rank: $\Delta = 1.23$, $Z = -2.980$ $p < 0.01$. The phenomenon suggests the effectiveness of the intervention in improving Financial Performance score.

Work Paid Hours

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Work Paid Hours score from pre-survey (4.24) was significantly increased to post-survey (4.88), with 28 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 0.64$, $Z = -2.460$ $p < 0.05$ The phenomenon suggests the effectiveness of the intervention in improving Work Paid Hours score.

Gross Revenue

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Gross Revenue score from pre-survey (2.06) was significantly increased to post-survey (4.06), with 146 positive sum-of-rank compared to 7 negative sum-of-rank: $\Delta = 2.00$, $Z = -3.364$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Gross Revenue score.

Billing

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Billing score from pre-survey (1.53) was significantly increased to post-survey (3.65), with 147 positive sum-of-rank compared to 6 negative sum-of-rank: $\Delta = 2.12$, $Z = -3.423$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Billing score.

Operating

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Operating score from pre-survey (3.00) was significantly increased to post-survey (4.47), with 116.5 positive sum-of-rank compared to 3.5 negative sum-of-rank: $\Delta = 1.47$, $Z = -3.270$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Operating score.

Capital

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Capital score from pre-survey (4.18) was significantly increased to post-survey (4.88), with 55 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 0.70$, $Z = -3.051$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Capital score.

Cash Flow

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Cash Flow score from pre-survey (1.76) was significantly increased to post-survey (4.12), with 136 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 2.36$, $Z = -3.611$ $p < 0.001$ The phenomenon suggests the effectiveness of the intervention in improving Cash Flow score.

Variances

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Variances score from pre-survey (2.12) was significantly increased to post-survey (4.06), with 150 positive sum-of-rank compared to 3 negative sum-of-rank: $\Delta = 1.94$, $Z = -3.524$ $p < 0.001$ The phenomenon suggests the effectiveness of the intervention in improving Variances score.

Volume

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Volume score from pre-survey (2.47) was significantly increased to post-survey (4.06), with 122.5 positive sum-of-rank compared to 13.5 negative sum-of-rank: $\Delta = 1.59$, $Z = -2.854$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Volume score.

Expenses

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Expenses score from pre-survey (2.88) was significantly increased to post-survey (4.29), with 91 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.41$, $Z = -3.247$ $p <$

0.01 The phenomenon suggests the effectiveness of the intervention in improving Expenses score.

Unit Factors

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Unit Factors score from pre-survey (4.18) was significantly increased to post-survey (4.82), with 55 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 0.64$, $Z = -3.051$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Unit Factors score.

Efficiency

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Efficiency score from pre-survey (4.18) was significantly increased to post-survey (4.94), with 91 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 0.76$, $Z = -3.606$ $p < 0.001$ The phenomenon suggests the effectiveness of the intervention in improving Efficiency score.

Revenue Increments

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Revenue Increments score from pre-survey (3.76) was significantly increased to post-survey (4.76), with 66 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.00$, $Z = -3.022$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Revenue Increments score.

Profit Loss

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Profit Loss score from pre-survey (1.82) was significantly increased to post-survey

(4.00), with 147.5 positive sum-of-rank compared to 5.5 negative sum-of-rank: $\Delta = 2.18$, $Z = -3.437$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Profit Loss score.

Opportunities

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Opportunities score from pre-survey (2.94) was significantly increased to post-survey (4.88), with 105 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 1.94$, $Z = -3.325$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Opportunities score.

Outcome

As shown in table 2, the results of Wilcoxon Signed Ranks Test indicated that the mean value of Outcome score from pre-survey (4.06) was significantly increased to post-survey (4.88), with 66 positive sum-of-rank compared to zero negative sum-of-rank: $\Delta = 0.82$, $Z = -3.125$ $p < 0.01$ The phenomenon suggests the effectiveness of the intervention in improving Outcome score.

Results

Evaluation of Outcomes

Data was collected from a sample of 17 participants who held the roles of nurse manager and assistant nurse manager and worked in the inpatient setting. Their years of experience ranged from a minimum of 1 year to a maximum of 33 years, with the mean years of experience being 7.88 years and a standard deviation of 9.15. In addition, 65% of the participants were female, and 35% were male.

41% of all participants held a graduate degree in nursing which included a Master's, DNP, or Ph. D., and 59% of participants held an undergraduate degree in nursing which included

a diploma, associate, or bachelor. In addition, 14% of the graduate degree holders were male, and

86% were female. Conversely, 40% of the undergraduate degree holders were male, and 60%

were female (figure 1, appendix L). The mean years of experience for the graduate degree-

holding group was 14.14 years, with a standard deviation of 11.38. The mean years of experience

for the undergraduate degree-holding group was 3.5 years, with a standard deviation of 3.27.

Figure 1, Degree Group Held by Gender
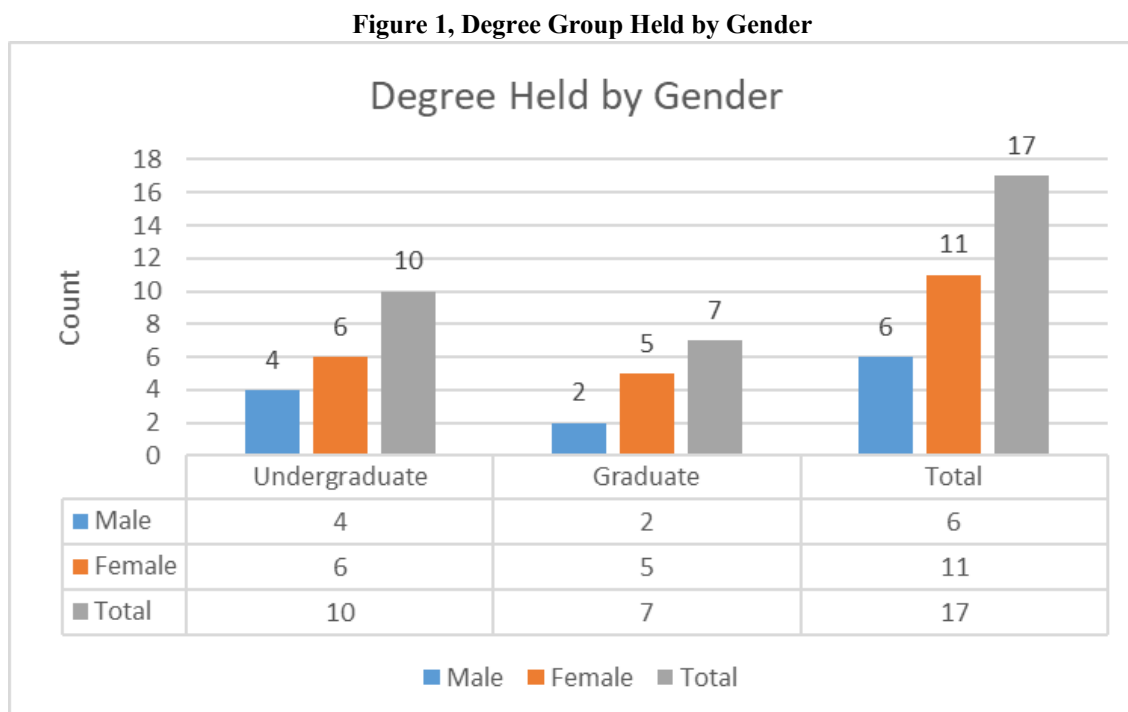
Figure 1– Depicts the breakdown gender of degree held by gender.

The lowest reported scores with knowledge, comfort, and proficiency in the nurse

manager and assistant nurse manager role on the pre-survey were the billing domain (score of

1.53) and cash flow domain (score of 1.76). Despite billing being one of the lowest-scoring

domains, it was not one of the domains with the highest increase in mean score compared to the

pre-survey. The most significant increase in mean scores on the post-survey was cash flow and

profit and loss, with a mean increase of 2.36 and 2.12, respectively.

The highest reporting score with knowledge, comfort, and proficiency in the nurse manager role on the pre-survey was the domain of work hours paid (score of 4.24), with the domains of capital, unit factors, and efficiency having the second-highest scores (Score of 4.18). All of these domains had the smallest increase in mean score from the pre-survey to the post-survey, with mean core increases of 0.64, 0.70, 0.64, and 0.76, respectively. The overall increase in the mean scores from the pre-survey to the post-survey in each domain can be seen in figure 2 (Appendix M).
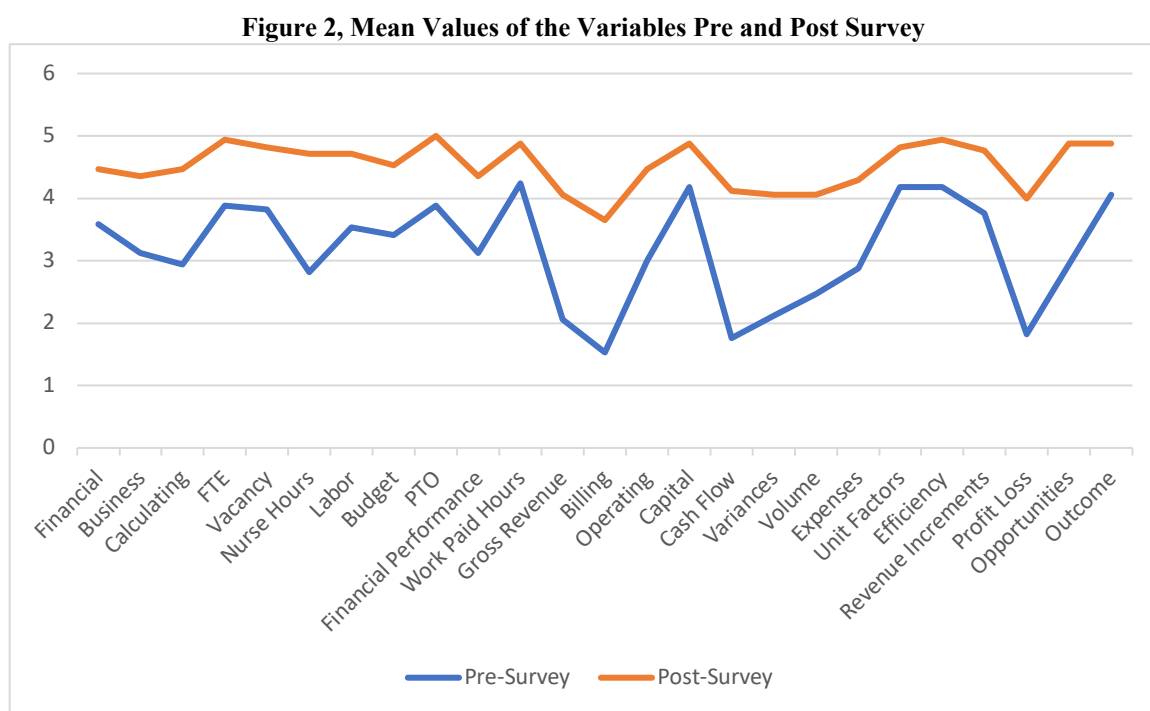
Figure 2, Mean Values of the Variables Pre and Post Survey

Figure 2 - depicts the line chart of the variables' mean values for the pre and post-survey results.

All participants were asked if a course specific to nurse manager health care business and finance and how it relates to their role responsibilities and the unit's daily operations would benefit them. Their responses can be seen in figure 3 (appendix N).

Figure 3, Course Benefit Responses
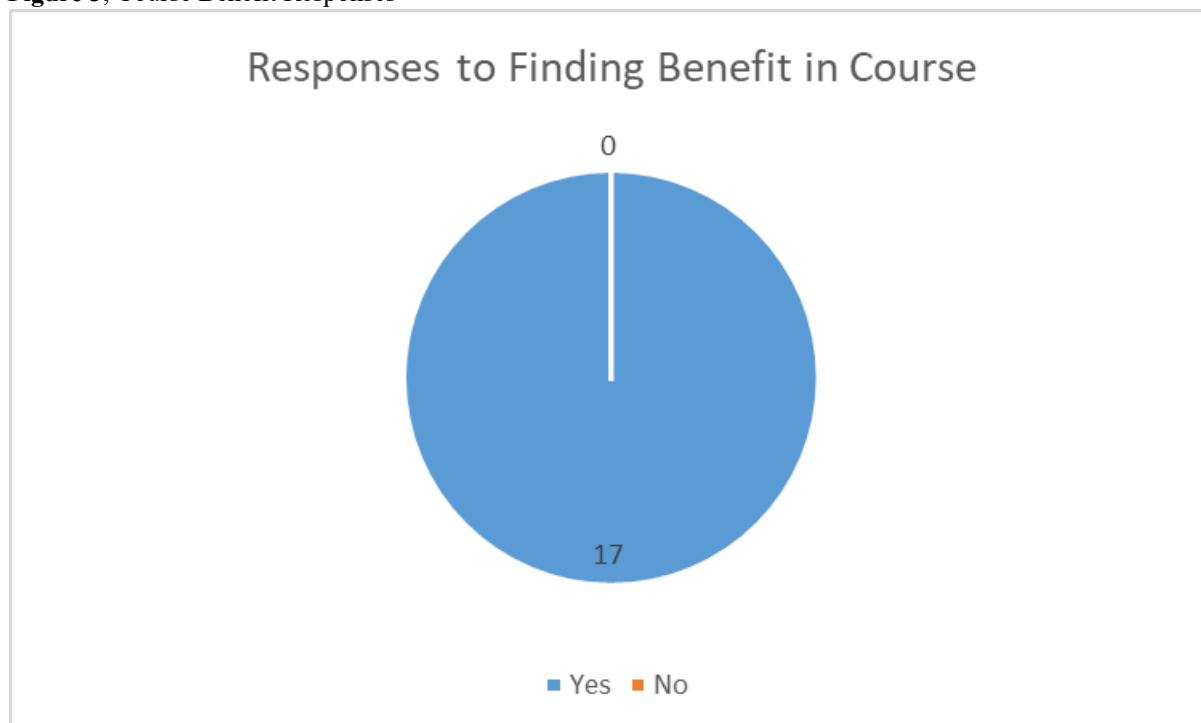
Figure 3 – Depicts participants' responses to determine if this course benefits the nurse manager role and daily operations.

Barriers to Success

This intervention was met with two significant barriers to success. The first barrier was delayed IRB approval. The IRB application had to be revised four times before approval was granted to proceed with the intervention. Each revision took approximately three weeks to receive back with determination, significantly reducing the time available to implement the intervention.

The second barrier was changes in stakeholder leadership. The intervention was previously approved by clinical education leadership, but due to the delay in IRB approval, implementation did not occur until four months after it was initially approved. During this time, changes in clinical education department leadership occurred, and the record of the intervention being approved by the previous clinical education department leadership was lost in the

transition. As a result, the project had to be reapproved, which added another week of delays to implementation.

Overcoming Barriers to Success

The intervention timeline delays due to IRB revisions caused the intervention course to be decreased from being offered four times over a month as a two-part class with one-hour sessions to one class an hour in length offered twice over a month to accommodate for the unanticipated delays. The reduction of the class structure meant that the content had to be revised for brevity to meet the new reduced time of the new class, so the content was revised and condensed to include strategic key talking points for each topic.

The re-approval process by stakeholder leadership required additional meetings with the new clinical education department leadership, where the purpose and feasibility of the intervention had to be re-examined by the new clinical education leadership. The re-examination of the project came with suggestions to alter the content of the course due to the clinical education department launching their own educational series focused on calculating staffing needs. As a result, the content that incorporated calculating staffing needs was reduced and only included to provide context for other areas of the intervention. The intervention project was resubmitted and approved by the stakeholder leadership to proceed with implementation.

Discussion

The survey results saw an overall increase in mean scores in every domain from the pre-survey to the post-survey. In addition, each increase was determined to be significant based on the Wilcoxon Signed Rank test. These significant increases in mean scores support the assumption that standardizing nurse manager finance and business orientation content to focus

on the daily operations of their role instead of using broad concepts and in-the-moment training increased their knowledge, comfort, and proficiency in these domains, as hypothesized.

The lowest scoring domains of billing and cash flow budget on the pre-survey had some of the most significant increases in mean scores from the pre-survey to the post-survey, which indicates reported increased knowledge of the topic. These significant increases in mean scores suggest a lack of exposure to these domains in their daily role, in their orientation, and in the continuing education opportunities offered to them in their role; and that more structured exposure to these domains can improve the assistant manager's and nurse manager's comfort with these business and finance concepts.

The highest scoring domains of work hours paid, capital budget, unit factors, and efficiency on the pre-survey had the most minor increases in mean scores from the pre-survey to the post-survey, which indicates that assistant nurse managers and nurse managers utilize these concepts more often in their daily operations and have more exposure to the concepts. These scores also support the assumption that standardizing orientation for these roles to have a strong emphasis on these domains will prepare new nurse managers and assistant nurse managers to better handle the daily operations of their role without and decrease the impact on the bottom line as they adjust to the role.

These findings also align with the theoretical model and translational framework used to support this intervention. The significant increases in each domain support Benner's theory of novice to expert. The participants were given the knowledge through the educational intervention that included the identified gaps in preparation of assistant managers and nurse managers that were identified in the literature; the participants reported increased knowledge in each domain on the post-survey. Additionally, these results can be linked to the translational framework. This

educational intervention was designed to target the specific area outlined by the AONL that includes healthcare business and finance education as an essential component of a nurse manager's success in the role. Therefore, the content of the intervention was specific to those components outlined in the AONL framework, and all 17 participants responded that a course in nurse manager healthcare finance and business that is specific to their role and daily operations would benefit them.

Unanticipated findings occurred during the post-survey data collection. For example, some participants reported a decreased score in several domains on the post-survey. Further exploration of this found that there needed to be more clarity in the perspective of answering the questions on the post-survey tool. Participants noted they answered the question from a perspective of realizing how much they did not know or understand about a specific domain. As a result, they rated themselves lower in that domain on the post-survey compared to the pre-survey, even though they reported increased learning in their feedback. This finding can be adjusted for in future interventions using the survey tool by clarifying the questions on the tool or altering the questions asked to be specific to what is to be measured. For example, instead of using 'I feel confident in…' on the post-survey, rephrase the question to state 'I have increased knowledge in…'. This would eliminate the ambiguity in the question and decrease variability in the reported scores on the post-survey.

While this study explored the preparation of inpatient assistant nurse managers and nurse managers, further exploration is needed on the standardization of education for assistant nurse managers and nurse managers in the outpatient and ambulatory services area. The business and finance concepts reviewed in this study were specific to inpatient areas and did not include outpatient business and financial practices and procedures. There are key differences in the

financial and business practices between the two, as inpatient uses models based on 24-hour coverage needs and use length of stay metrics to determine financial targets. At the same time, outpatient areas tend to be more volume or visit based. While there are differences between the two, this intervention can be adjusted to focus on the outpatient nurse managers by adjusting the content of the intervention to focus on the outpatient areas' business and budgeting principles.

Additionally, the content of the intervention was supported by the discussion about the intervention sites' specific business and financial practices. While concepts remain the same, not all organizations utilize healthcare finance budgeting and finance formulas the same way. For example, larger organizations may allow units to have a higher NHPPD to accommodate for higher acuity patients, while smaller rural organizations do not build that into their variable staffing plans. Therefore, supporting the concepts by discussing site-specific practices and opportunities to apply them to practice is essential.

Conclusion

Based on these findings, recommendations to practice for standardizing assistant nurse manager and nurse manager education can be made. The literature overwhelmingly reports business and finance as an assistant nurse manager and nurse manager's largest reported areas where they lack confidence. Standardizing the content of assistant nurse manager and nurse manager orientation to include a healthcare business and finance course specific to their role and responsibilities can increase knowledge of these concepts and practices, increase comfort in utilizing them in their daily roles, and proficiency to use them to make fiscally sound decisions to meet the organizations' financial targets and metrics. Including a course with this standardized information as part of the orientation process to the role can support new assistant managers and nurse managers to make appropriate fiscal decisions in alignment with the organizations' goals

and minimize the impact on the bottom line that is traditionally associated with turnover in management. Launching this course would mean assistant nurse managers and nurse managers get the training that is specific to their role and the opportunity to relate it to their practice, and they would not have to rely on 'in the moment' training which can sometimes take up to a year for them to see certain budgeting aspects. Providing this foundation earlier gives them the ability to make sound financial decisions earlier in their tenure, which can significantly impact the bottom line.

As this class was abbreviated, further expanding the content to give participants a more comprehensive education related to these topics would be ideal. For example, it could be administered as a series of classes with the daily operations budgeting content front-loaded at the beginning of the orientation process and the principles that are not daily operations but still critical to the bottom line (i.e., capital budgeting, business) can be moved toward the end of the orientation process. This would allow more time for questions and discussion in each class and for participants to receive the content in segments and build on previously learned knowledge as the courses progress.

The sustainability of this intervention can be easily achieved in the local setting as a course structure for new managers already exists. The current course structure focuses primarily on the other two components of the AONL's framework, 'the leader within' and 'the art,' which focus mainly on people management, not business management. Restructuring these courses to include 'the science' portion of the AONL framework would add the missing elements of the current training offered in the local setting. Since the infrastructure already exists and these classes are required by the organization, there would not be additional costs to the organization to implement these changes.

The next step in this project is to disseminate the findings of this intervention to the key stakeholders and offer the proposed recommendations to practice at the local level. Key stakeholders for this intervention include the chief nursing officer, associate chief nursing officers, vice presidents of each service line, director of clinical education, director of finance, and the clinical operations directors of each service line. A digital poster will be created that will briefly state the purpose of this project and outline current practice results from the pre-survey to proposed practice results as shown in the post-survey. This digital poster will be presented over a virtual meeting to all stakeholders. Critical areas of the assistant nurse manager and nurse manager educational gaps at the local level will be highlighted, and recommendations to current practice based on these results will be given. Impacts on the organization will be discussed in short-term benefits to the organization and long-term benefits overall to the organization.

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Appendix A

Benner's Novice to Expert Theory

- EXPERT
  - Has an intuitive grasp of each situation
- PROFICIENT
  - Perceives situations as whole. Has learnt what to expect in certain situations
- COMPETENT
  - Has been working in the job/area for 2-3 yrs. Demonstrates efficiency, coordination and confidence.
- ADVANCED BEGINNER
  - Can demonstrate basic levels of performance due to limited prior experience in actual situations, occasionally require supportive cues
- NOVICE
  - No experience in the situations that they are expected to perform. They are unable to use discretionary judgement

Appendix B

American Organization of Nurse Leader's Nurse Manager Core Competency

Framework

THE NURSE MANAGER

The Science:
Managing the Business

Financial Management
Human Resource Management
Performance Improvement
Foundational Thinking Skills
Technology
Strategic Management
Clinical Practice Knowledge

The Leader Within:
Creating the Leader in Yourself

Personal and Professional Accountability
Career Planning
Personal Journey Disciplines
Optimizing the Leader Within

The Art:
Leading the People

Human Resource Leadership Skills

Relationship Management and Influencing Behaviors

Diversity

Shared Decision Making

Appendix C

Plan-Do-Study-Act Model

PLAN
- Propose change idea and how it will be tested
- Predict what will happen

DO
- Implement change idea
- Collect data
- Reflect on how well the plan was followed

ACT
- Share final reflections
- Conclude whether to Adopt, Adapt, or Abandon change idea

STUDY
- Analyze data collected
- Compare results to predictions
- Capture learnings
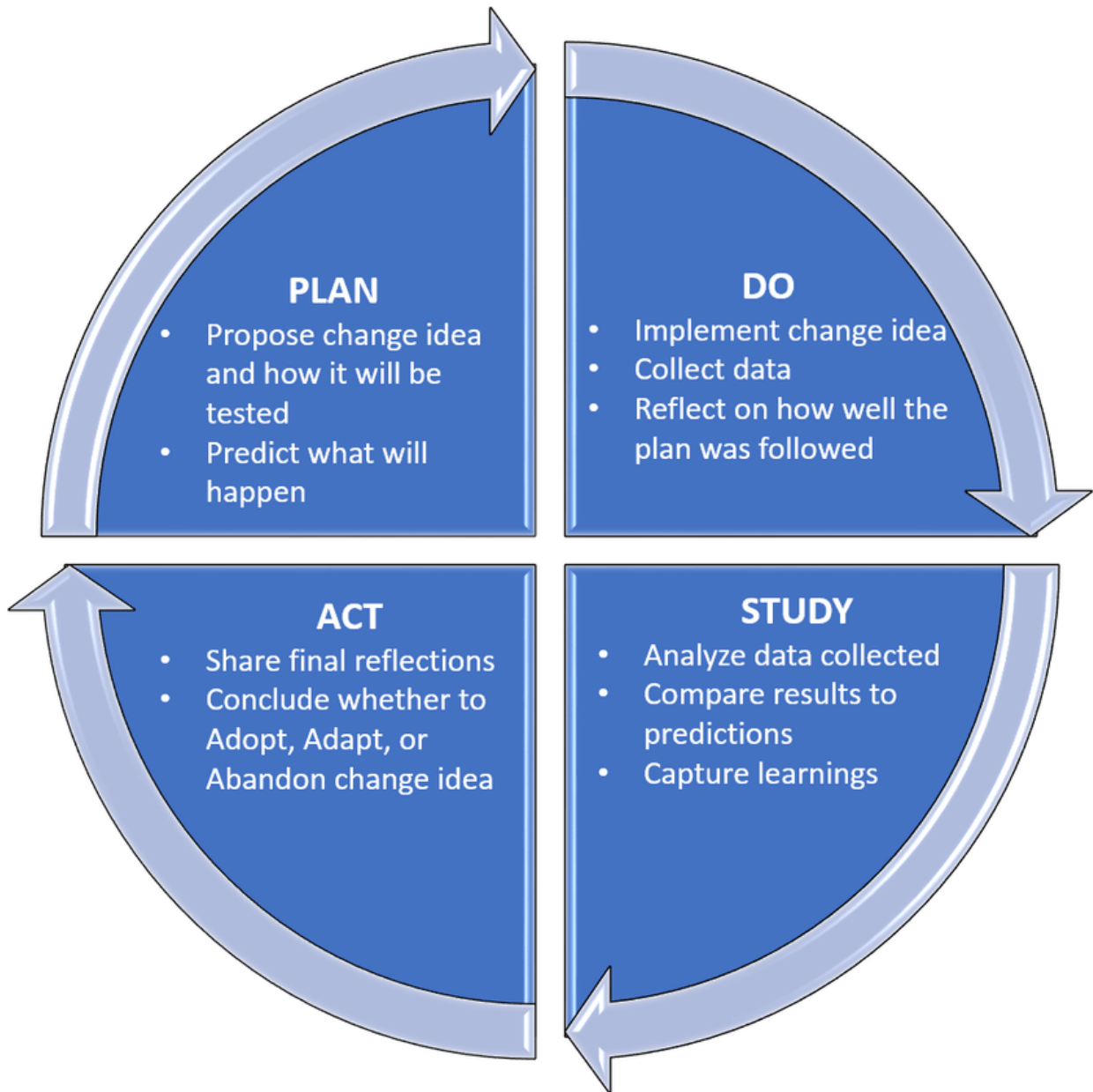
Appendix D

Nurse Manager Course Implementation – Problem Analysis

Nurse Manager Course Intervention - Problem Analysis
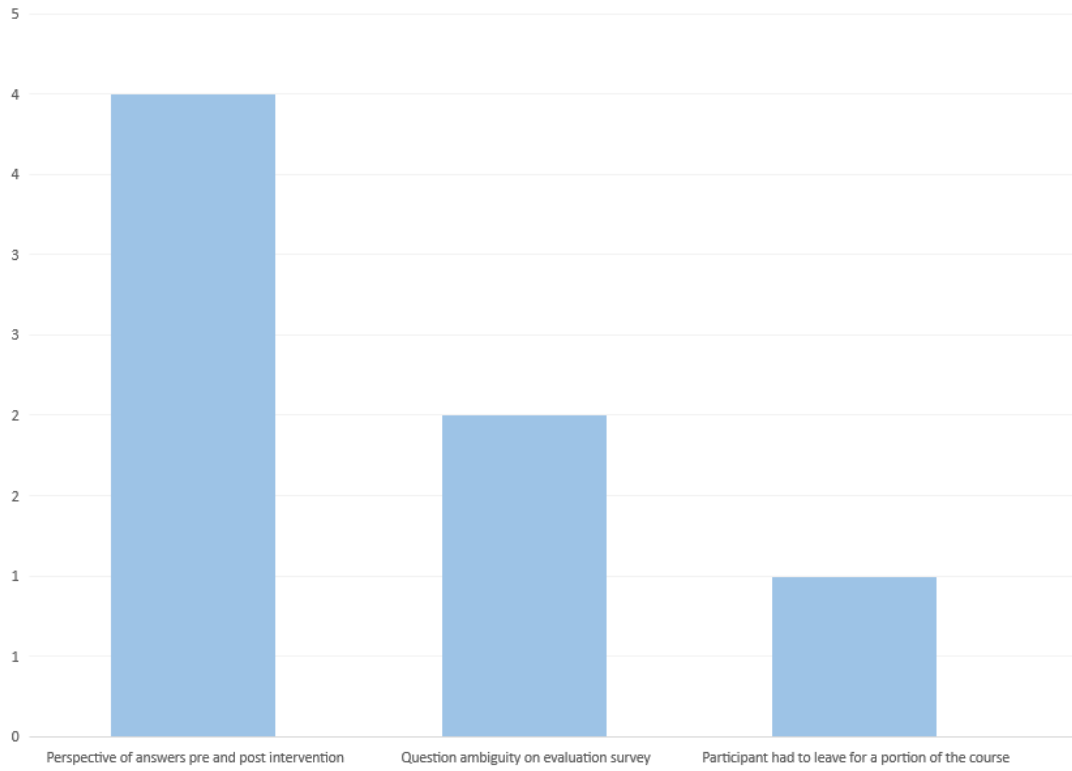
Appendix E

Recruitment Email

Topic: The Bottom Line: Nurse Manager Business and Financial Acumen
We are initiating a quality improvement project that aims to provide nurse managers with a business and finance acumen to aid in the performance of their role. This 1-hour educational program will positively affect unit daily operations.

Why are we doing this project?

It is known that nursing schools do not provide standardized business and finance training necessary for nurse manager roles. Many institutions offer limited education and training related to finance and budgeting, if at all. As financial knowledge is a primary component of most nurse manager roles, it is increasing become aware that unique knowledge and skills in business and finance acumen education is necessary for unit and clinic success. It is our hope that we can build and implement a business and finance educational program that benefits all nurse manager roles across the organization.

What is involved in this project?

Your voluntary participation involves registering for one session that lasts approximately 60 minutes; two sessions will be offered. The information will focus on nursing business and finance necessary in unit(s) and clinic(s) needed to operationalize day to day structure and budgetary needs. The session will focus on:

- key business and healthcare finance terms and concepts
- labor and productivity variance
- calculating FTEs, vacancy rates, and non-productive time needs
- reading budget account reports
- understanding gross revenue needs
- billing and collection procedures
- operating budget, capital budget, cash flow budget
- volume and revenue
- profit and loss statements
- reimbursement structures

Prior to initiating and following completion of the sessions, you will be asked to complete a needs assessment and knowledge survey. You will also be provided the opportunity to evaluate the program upon completion. The surveys are housed in Qualtrics, a secure platform at the organization, and will take no longer than 10 minutes to complete. If you decide to participate:

1. Your participation is voluntary and confidential.
2. Your responses are anonymous, you will not be identified.
3. You do not have to answer any question that makes you feel uncomfortable.
4. You choose if you want to participate or not.
5. As a Duke employee if you decide not to participate, it will not affect your employment in any way.
6. There is no compensation for participating in this program.

It is our hope that you learn more about healthcare budgeting and finance which will help direct your management responsibilities and improve your unit(s) or clinic(s) operations. Your survey responses will guide the department in providing future educational session based on your needs.

What if I have questions?

If you have questions, please contact:
- James Camp, Jtcamp@uncg.edu

Thank you for your time and consideration.

Appendix F

Minimal Risk Informed Consent

Minimal Risk Informed Consent

To Participant:

Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about the level of preparation of nurse managers as it pertains to business and financial acumen prior to assuming the nurse manager role.

We hope to receive completed surveys/questionnaires from about 35 people, so your answers are very important to us. Of course, you have a choice about whether to complete the survey/questionnaire, but if you do participate, you are free to skip any questions or discontinue at any time.

The survey/questionnaire will take about 10 minutes to complete.

You will be entered into a drawing for one of 5 gift cards valued at $10 dollars each for taking part in this study.

Your response to the survey will be kept confidential to the extent allowed by law. When we write about the study you will not be identified, and your name will not be used in presentations or publications. You will be assigned a participant ID for the purposes of statistically analyzing your pre-survey data and post-survey data.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have questions about your rights as a research participant or want to report any problems or complaints, you can call the hospital research advocate at xxx-xxx-xxxx

Sincerely,

James Camp

Primary Investigator/DNP Candidate

E-MAIL: Jtcamp@uncg.edu

Appendix G

Pre-Survey Tool

Pre Survey

Q1 Please enter your participant ID

_____

- -

Q2 How many years of experience do you have in the nurse manager role?

_____

- -

Q3 What is your highest completed degree?

○ Undergraduate (Diploma, Associates, Bachelors) (1)

○ Graduate (Masters, DNP, PhD) (2)

- -

Q4 Do you feel that your nursing program prepared you for the business and financial skills needed for the nurse manager role?

○ Yes (1)

○ No (2)

- -

Q5 On completion of your nurse manager orientation did you feel prepared for the financial responsibilities of the role?

○ Yes (1)

○ No (2)

Q6 Is the finance component of your role stressed in your work environment as a nurse manager?

○ Yes (1)

○ No (2)

Q7 How would you rate your current understanding of healthcare business and financial knowledge?

○ A great deal (1)

○ A lot (2)

○ A moderate amount (3)

○ A little (4)

○ None at all (5)

Q8 Prior to this class, I feel confident with healthcare specific financial terms and concepts.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q9 Prior to this class, I feel confident in my knowledge of healthcare as a business.

○ strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q10 Prior to this class, I feel confident calculating my labor and productivity variance in real time.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q11 Prior to this class, I feel confident calculating the total FTEs needed to cover my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q12 Prior to this class, I feel confident calculating my vacancy rate.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q13 Prior to this class, I feel confident calculating my nurse hours per patient day.

○ Strongly Agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q14 Prior to this class, I feel confident in reading my labor and productivity report.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q15 Prior to this class, I feel confident in reading my budget accounts report.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q16 Prior to this class, I feel confident in calculating how much overtime/PTO I can approve.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q17 Prior to this class, I feel confident contributing to conversations referencing my units financial performance.

    ○ Strongly agree (1)

    ○ Somewhat agree (2)

    ○ Neither agree nor disagree (3)

    ○ Somewhat disagree (4)

    ○ Strongly disagree (5)

Q18 Prior to this class, I feel confident in my understanding of worked hours vs. paid hours.

    ○ Strongly agree (1)

    ○ Somewhat agree (2)

    ○ Neither agree nor disagree (3)

    ○ Somewhat disagree (4)

    ○ Strongly disagree (5)

Q19 Prior to this class, I feel confident calculating gross revenue needs.

    ○ Strongly agree (1)

    ○ Somewhat agree (2)

    ○ Neither agree nor disagree (3)

    ○ Somewhat disagree (4)

    ○ Strongly disagree (5)

Q20 Prior to this class, I feel confident contributing to conversations about billing and collection for my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q21 Prior to this class, I feel confident contributing to conversations about the operating budget.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q22 Prior to this class, I feel confident contributing to conversations about the capital budget.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q23 Prior to this class, I feel confident contributing to conversations about the cash flow budget.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q24 Prior to this class, I feel confident contributing to conversations regarding all 7 types of variances associated with revenues and expenses.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q25 Prior to this class, I feel confident forecasting my units volume and revenue.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q26 Prior to this class, I feel confident forecasting my units expenses.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q27 Prior to this class, I feel confident contributing to conversations about the factors that influence my units productivity.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q28 Prior to this class, I feel confident in my understanding of productivity and efficiency.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q29 Prior to this class, I feel confident contributing to conversations about revenue increments associated with throughput and length of stay.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q30 Prior to this class, I feel confident preparing a profit and loss statement for my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q31 Prior to this class, I feel confident in developing a business plan to justify new initiatives, opportunities, or expansions for my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

- -

Q32 Prior to this class, I feel confident contributing to conversations connecting clinical quality improvement outcomes and financial outcomes.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

<center>**Appendix H**</center>

<center>**Post-Survey Tool**</center>

Post Survey

Q1 Please enter your participant ID

_____

Q2 Do you feel that your nursing program prepared you for the business and financial skills needed for the nurse manager role?

○ Yes (1)

○ No (2)

Q3 Is the finance component of your role stressed in your work environment as a nurse manager?

○ Yes (1)

○ No (2)

Q4 How would you rate your current understanding of healthcare business and financial knowledge?

○ A great deal (1)

○ A lot (2)

○ A moderate amount (3)

○ A little (4)

○ None at all (5)

Q5 After this class, I feel confident with healthcare specific financial terms and concepts.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q6 After this class, I feel confident in my knowledge of healthcare as a business.

○ strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q7 After this class, I feel confident calculating my labor and productivity variance in real time.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q8 After this class, I feel confident calculating the total FTEs needed to cover my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q9 After this class, I feel confident calculating my vacancy rate.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q10 After this class, I feel confident calculating my nurse hours per patient day.

○ Strongly Agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q11 After this class, I feel confident in reading my labor and productivity report.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q12 After this class, I feel confident in reading my budget accounts report.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

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Q13 After this class, I feel confident in calculating how much overtime/PTO I can approve.

○ Strongly agree (1)

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Q14 After this class, I feel confident contributing to conversations referencing my units financial performance.

○ Strongly agree (1)

○ Somewhat agree (2)

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Q15 After this class, I feel confident in my understanding of worked hours vs. paid hours.

○ Strongly agree (1)

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○ Neither agree nor disagree (3)

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○ Strongly disagree (5)

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○ Strongly agree (1)

○ Somewhat agree (2)

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○ Strongly disagree (5)

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○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q20 After this class, I feel confident contributing to conversations about the cash flow budget.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

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○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

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○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

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○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q24 After this class, I feel confident contributing to conversations about the factors that influence my units productivity.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q25 After this class, I feel confident in my understanding of productivity and efficiency.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q26 After this class, I feel confident contributing to conversations about revenue increments associated with throughput and length of stay.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q27 After this class, I feel confident preparing a profit and loss statement for my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q28 After this class, I feel confident in developing a business plan to justify new initiatives, opportunities, or expansions for my unit.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q29 After this class, I feel confident contributing to conversations connecting clinical quality improvement outcomes and financial outcomes.

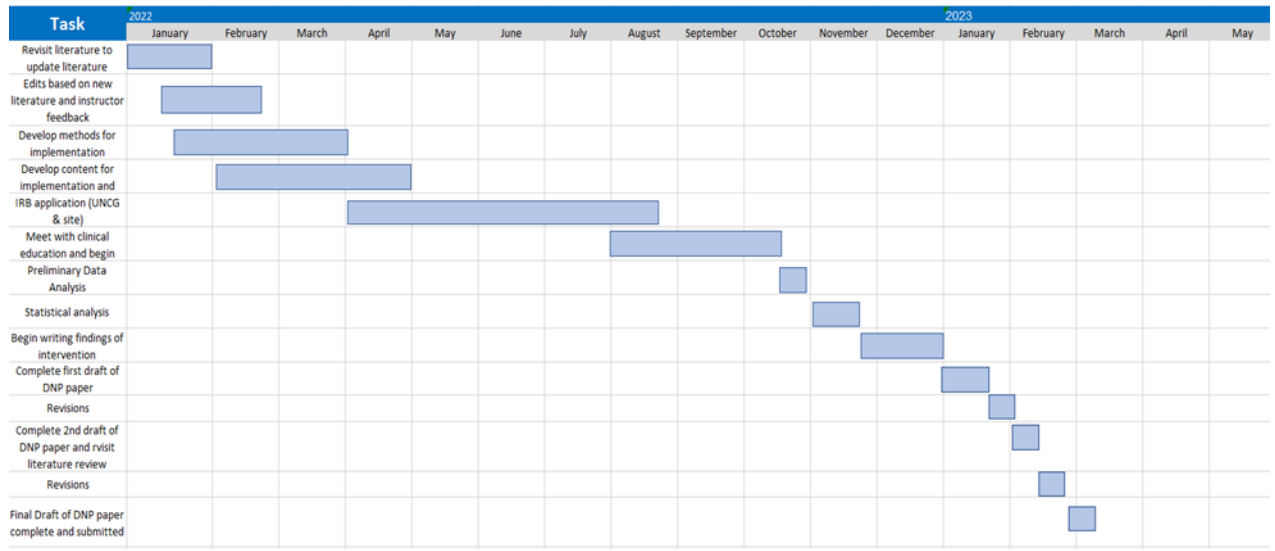○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q30 After this class, do you feel a healthcare business and finance course specific to the nurse manager role and daily operations would be beneficial?

○ Yes (1)

○ No (2)

Appendix I

Timeline and Critical Milestones

Task	2022												2023				
	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May
Revisit literature to update literature	██																
Edits based on new literature and instructor feedback		██															
Develop methods for implementation		██															
Develop content for implementation and			██														
IRB application (UNCG & site)				██													
Meet with clinical education and begin							██										
Preliminary Data Analysis									██								
Statistical analysis										██							
Begin writing findings of intervention											██						
Complete first draft of DNP paper												██					
Revisions													██				
Complete 2nd draft of DNP paper and rvisit literature review													██				
Revisions														██			
Final Draft of DNP paper complete and submitted															██		

Appendix J

Table 1

Table 3, Research Variables and Descriptions

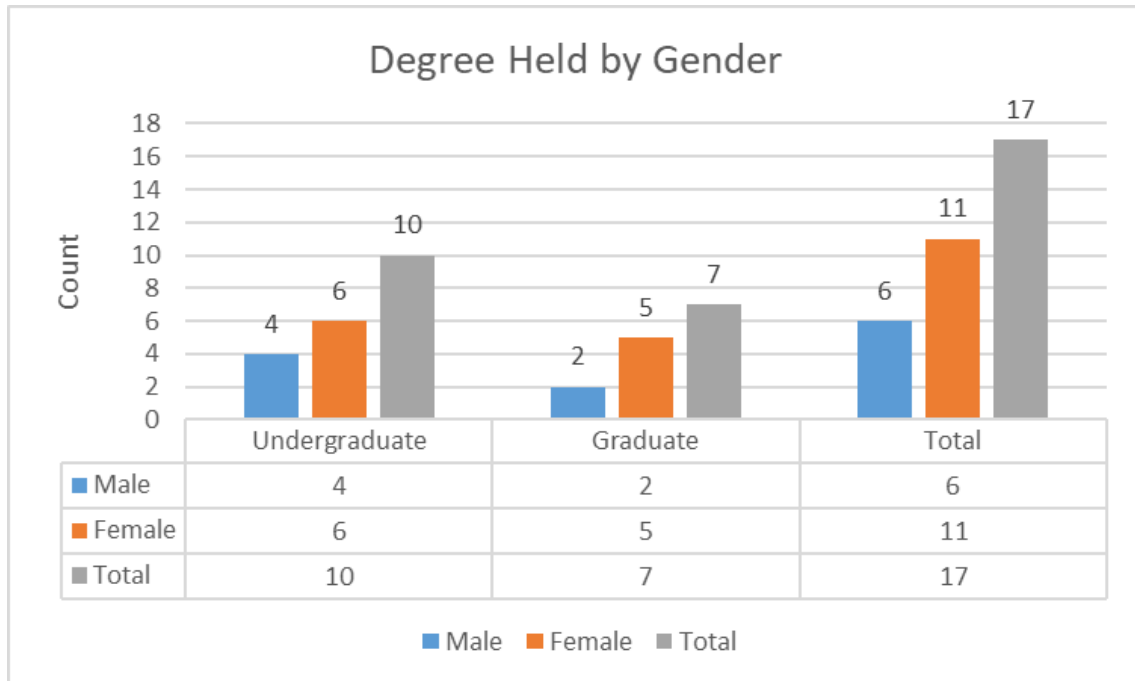| Variable	Description
Financial	I feel confident with healthcare specific financial terms and concepts.
Business	I feel confident in my knowledge of healthcare as a business.
Calculating	I feel confident calculating my labor and productivity variance in real time.
FTE	I feel confident calculating the total FTEs needed to cover my unit.
Vacancy	I feel confident calculating my vacancy rate.
Nurse Hours	I feel confident calculating my nurse hours per patient day.
Labor	I feel confident in reading my labor and productivity report.
Budget	I feel confident in reading my budget accounts report.
PTO	I feel confident in calculating how much overtime/PTO I can approve.
Financial Performance	I feel confident contributing to conversations referencing my units financial performance.
Work Paid Hours	I feel confident in my understanding of worked hours vs. paid hours.
Gross Revenue	I feel confident calculating gross revenue needs.
Billing	I feel confident contributing to conversations about billing and collection for my unit.
Operating	I feel confident contributing to conversations about the operating budget.
Capital	I feel confident contributing to conversations about the capital budget.
Cash Flow	I feel confident contributing to conversations about the cash flow budget.
Variances	I feel confident contributing to conversations regarding all 7 types of variances associated.
Volume	I feel confident forecasting my units volume and revenue.
Expenses	I feel confident forecasting my units expenses.
Unit Factors	I feel confident contributing to conversations about the factors that influence my units.
Efficiency	I feel confident in my understanding of productivity and efficiency.
Revenue Increments	I feel confident contributing to conversations about revenue increments associated with throughput and length of stay.
Profit Loss	I feel confident preparing a profit and loss statement for my unit.
Opportunities	I feel confident in developing a business plan to justify new initiatives, opportunities, or expansions for my unit.
Outcome	I feel confident contributing to conversations connecting clinical quality improvement outcomes and financial outcomes.

Appendix K

Table 2
Table 4, Results of Wilcoxon Signed Ranks Test between Pre and Post Survey

Variable	Mean			Sum of Rank		Wilcoxon		
	Pre-Survey	Post-Survey	Mean Difference (Δ = Post - Pre)	Negative Rank (Post < pre)	Positive Rank (Post > Pre)	Z-value	P-value	Significant Difference
Financial	3.59	4.47	0.88*	0	36	-2.565	0.01	Yes
Business	3.12	4.35	1.23**	6	130	-3.334	0.001	Yes
Calculating	2.94	4.47	1.53**	0	78	-3.093	0.002	Yes
FTE	3.88	4.94	1.06**	0	78	-3.211	0.001	Yes
Vacancy	3.82	4.82	1**	0	66	-3.064	0.002	Yes
Nurse Hours	2.82	4.71	1.89**	0	91	-3.307	0.001	Yes
Labor	3.53	4.71	1.18**	0	91	-3.27	0.001	Yes
Budget	3.41	4.53	1.12**	0	66	-2.98	0.003	Yes
PTO	3.88	5	1.12**	0	55	-2.877	0.004	Yes
Financial Performance	3.12	4.35	1.23**	3.5	87.5	-2.98	0.003	Yes
Work Paid Hours	4.24	4.88	0.64*	0	28	-2.46	0.014	Yes
Gross Revenue	2.06	4.06	2**	7	146	-3.364	0.001	Yes
Billing	1.53	3.65	2.12**	6	147	-3.423	0.001	Yes
Operating	3	4.47	1.47**	3.5	116.5	-3.27	0.001	Yes
Capital	4.18	4.88	0.7**	0	55	-3.051	0.002	Yes
Cash Flow	1.76	4.12	2.36***	0	136	-3.611	0	Yes
Variances	2.12	4.06	1.94***	3	150	-3.524	0	Yes
Volume	2.47	4.06	1.59**	13.5	122.5	-2.854	0.004	Yes
Expenses	2.88	4.29	1.41**	0	91	-3.247	0.001	Yes
Unit Factors	4.18	4.82	0.64**	0	55	-3.051	0.002	Yes
Efficiency	4.18	4.94	0.76***	0	91	-3.606	0	Yes
Revenue Increments	3.76	4.76	1**	0	66	-3.022	0.003	Yes
Profit Loss	1.82	4	2.18**	5.5	147.5	-3.437	0.001	Yes
Opportunities	2.94	4.88	1.94**	0	105	-3.325	0.001	Yes
Outcome	4.06	4.88	0.82**	0	66	-3.125	0.002	Yes

Appendix L

Figure 1

Degree Held by Gender

	Undergraduate	Graduate	Total
■ Male	4	2	6
■ Female	6	5	11
■ Total	10	7	17

Appendix M

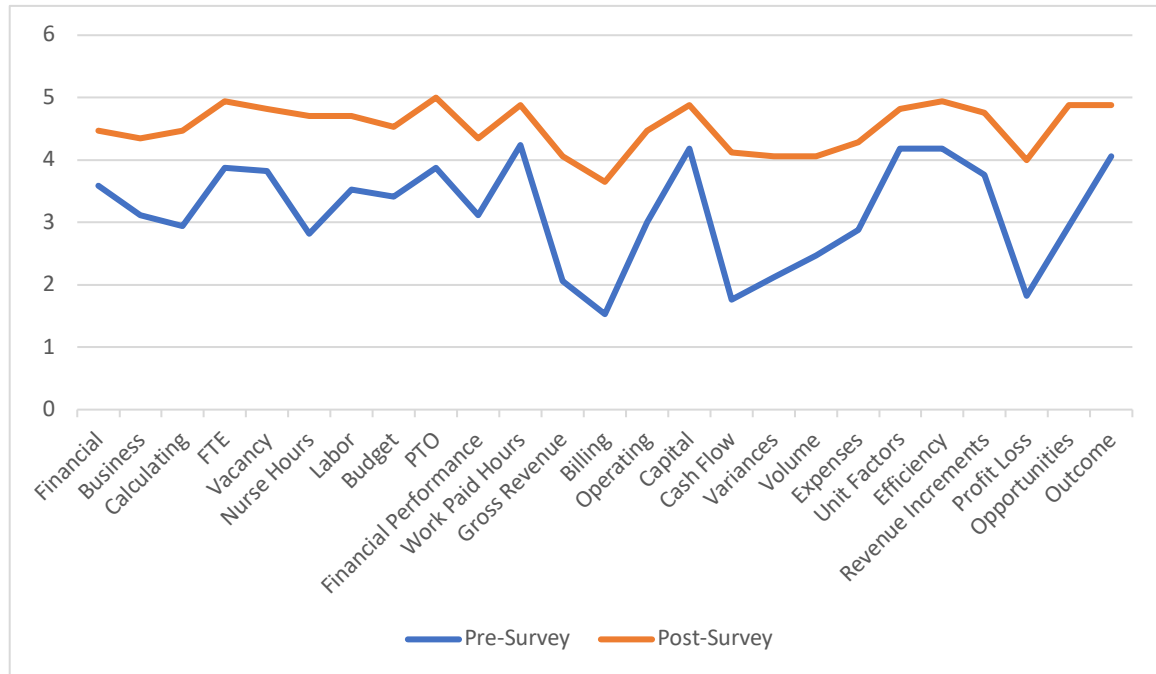**Figure 2**

Figure 2 - depicts the line-chart of the variables' mean values for the pre and post survey results.

Appendix N

Figure 3

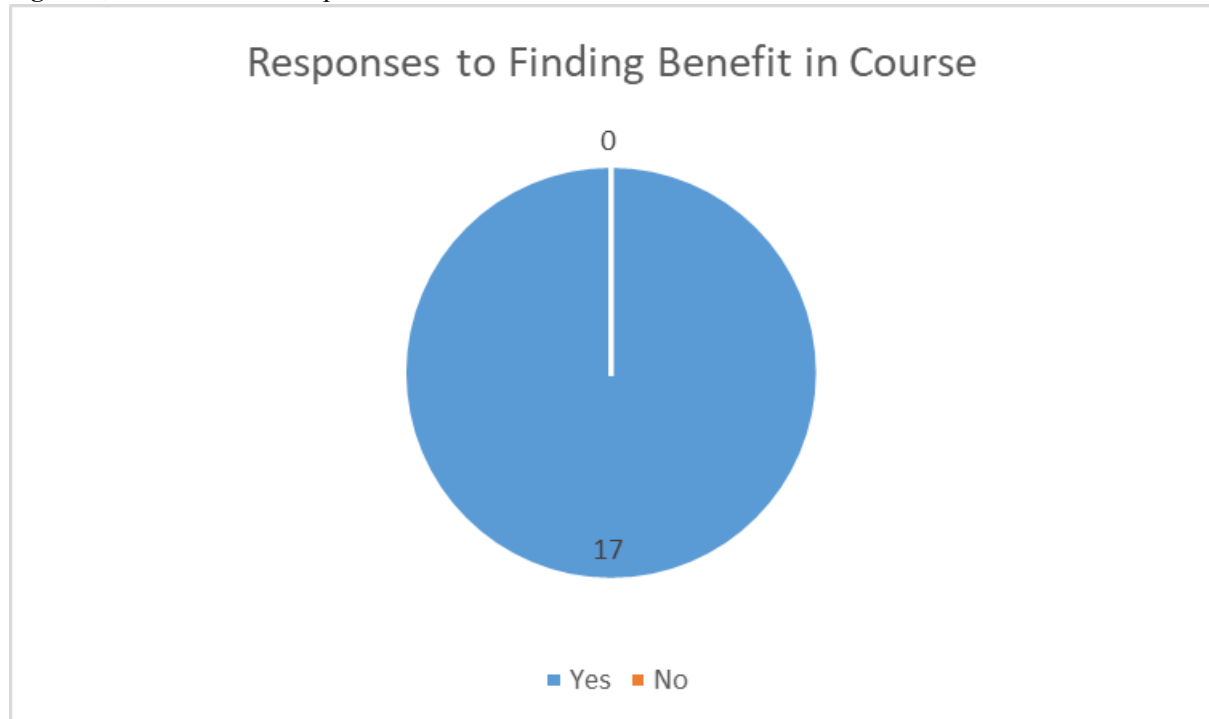**Figure 3**, Course Benefit Responses

Figure 3 – Depicts participants responses to determining if this course is beneficial to the nurse manager role and daily operations