

**A REGISTERED NURSE'S UNDERSTANDING OF PRESSURE ULCER PREVENTION
AND TREATMENT**

by

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Dedication

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Abstract

The goal of this study was to determine what registered nurses' understanding of the prevention and treatment options for pressure ulcers currently is and do those registered nurses need additional education or training for prevention and treatment options of pressure ulcers. It can be determined from the literature review that two studies out of the ten presented were directly related to a registered nurse's understanding and retention of knowledge (Cox et al., 2011; Sving et al., 2012). This study consisted of 25 survey questions that assessed what 35 registered nurses from the North Carolina northeastern region currently know about prevention and treatment for pressure ulcers. This study used a small descriptive quantitative survey approach using PsychData software. The hypothesis was that registered nurses would report there is currently no annual training offered to them outside of their new hire orientation, that there are no requirements to have any additional training, and that there were no annual competency requirements. After analysis of the data, registered nurses reported they do not receive adequate education and training about pressure ulcer prevention and treatment. Forty-nine percent of registered nurses surveyed noted that they rarely receive continuing education about current wound care techniques while 60% of these registered nurses report that they are providing the wound care for patients.

Keywords: pressure ulcers, lack of education, education, prevention

CHAPTER 1. INTRODUCTION

Background of the Problem

According to Dantas et al. (2013), registered nurses are deficient in the scientific knowledge of pressure ulcer prevention and treatment. Dantas et al. (2013) also noted that there was a high incidence of pressure ulcers in hospitals and that pressure ulcers are a usual occurrence during a hospitalization. “Several studies, however, suggest that nurses lack current knowledge about appropriate strategies for assessing and preventing pressure ulcers” (Cox, Roche, & Van Wynen, 2011). So if nurses do not have a clear understanding of prevention and treatment and the rate of pressure ulcers approaches 38% of hospitalized patients, then what is being done about it in our healthcare systems (Kaur et al., 2015)? What is it that nurses do not know? How much education and training do they get regarding prevention and treatment of pressure ulcers?

Statement of the Problem

Research shows that there is a substantial incidence of pressure ulcer development in acute care facilities, to which there is limited research to support that there is a sufficient amount of nurse education in preventing and treating pressure ulcers, or that there is any training regarding new treatments available to nurses. Given this information, do registered nurses have adequate knowledge to prevent and treat pressure ulcers in a variety of settings? To further evaluate prevention and treatment, research on a nurse's current understanding of the topic is needed.

Purpose of the Study

Given all the information presented, the primary investigator (PI) conducted a quantitative study that would examine the current knowledge of nurses from a variety of settings regarding the prevention and treatment options of pressure ulcers using an electronic survey to be discussed in a later chapter.

Significance of the Study

The importance of this study is evidenced in the noted gap in the nursing literature. Nurses in various settings care for patients who are at risk for pressure ulcers but do these nurses get training and education of prevention and treatment of pressure ulcers? The literature review provided in this paper suggests that there is a lack of understanding and a lack of research surrounding the topic of a nurses' understanding of pressure ulcer prevention and treatment. By surveying nurses in a variety of settings about their understanding, further recommendations can be made for continued education and training for nurses.

Research Questions

Throughout this work, the primary investigator (PI) worked to answer three research questions. Do registered nurses in a variety of settings have a good understanding of pressure ulcer prevention and treatment? What do registered nurses already know about pressure ulcer prevention and treatment? Do they feel that they have enough education to treat and care for pressure ulcers adequately?

Definition of Terms

For this study, the definition of pressure ulcers according to the National Pressure Ulcer Advisory Panel (NPUAP), is that pressure ulcers are breakdowns in the skin that are the result of continued pressure that is on bony prominences of the body such as heels, elbows, and spine.

Research Design

The study used a descriptive quantitative study design. The primary investigator used a quantitative study that examined the current knowledge of registered nurses, from a variety of settings, of prevention and treatment options of pressure ulcers. A descriptive quantitative design was a good fit for this study since there was no interaction between the participants and the primary investigator and the only information examined in this study was the registered nurses' knowledge. Registered nurse's had access to a 25 question electronic survey carried through PsychData using a Likert Scale.

Assumptions and Limitations

Assumptions

The research will show us that the scientific knowledge of prevention of pressure ulcers in registered nurses is deficient and that there was a high incidence of pressure ulcers that is a standard feature of hospitalization (Dantas et al., 2013). According to Vieira, Oliveira, & Valente, (2013) studies have analyzed the nursing educators' understanding and prior experience in wound healing and noted that increased training in wound prevention and treatment had an improved understanding on prevention and treatment of pressure ulcers.

Limitations

Limitations of this study were that it was only conducted online and to nurses in one region of the state. Other limitations that were identified was there were no nurses that reported working in a long term care setting and that there was no detailed analysis from what nurses who reported working in acute care knew compared to those that do not work in acute care.

Feasibility issues with the study included the following: (a) time in the development of the

survey, (b) the pooling of participants, and (c) budget restrictions. Other limitations in the study were the sample size and the length of the study.

Organization of the Remainder of the Study

The remainder of this document will include a literature review with date limitation from 2011-2017. Discussed within the literature review are topics such as search methods and theoretical orientation. Additionally, the methodology use including the research design, population, sample size, collection, and instruments used will be explained. Later in the report, you will find the results section which covers the background of the study issue and hypothesis. The final chapter in this document will discuss the study's results, the conclusions drawn from the results, implications for nursing practice, education and administration, and recommendations for future research.

CHAPTER 2. LITERATURE REVIEW

Methods of Searching

The literature review conducted included studies on the topic of pressure ulcer prevention and treatment. The search included the databases of CINAHL Complete, ProQuest Nursing and Allied Health Database, and PubMed using the keywords: “nursing,” “pressure ulcer,” “prevention,” “treatment,” and “education”. Google Search was used as a reference to assist with the validity of the studies presented in this review. The date limitations for this study are from 2011-to-2017. Included in the search were both qualitative and quantitative research studies. Exclusions to the literature review were abstracts, those not available in portable document format (PDF), those that were not peer-reviewed works, and those of strictly medical or physician journals.

Theoretical Orientation for the Study

Malcolm Knowles’ adult learning theory (1980) is the theoretical frameworks used for this study (Bastable & Myers, 2014). According to Bastable and Myers (2014), Knowles’ adult learning theory emphasizes andragogy, which by definition is how adults learn. The adult learning theory is self-directed learning in which the adult has control over the learning experience, as well as being able to learn in a real-world setting and be able to draw on professional and life experiences as resources for learning (Bastable & Myers, 2014). “Applying the principles of adult learning theory to the acquisition and retention of knowledge about

pressure ulcers may prove of great value to RNs because the knowledge gained can be applied directly to clinical practice” (Cox, Roche, & Van Wynen, 2011).

Review of the Literature

Pressure ulcers are breakdowns in the skin that are the result of prolonged pressure. Usually, these types of wounds are found on bony prominences of the body such as heels, elbows, and spine. Nurses learned in school to conduct skin assessments on patients, but according to Moghimi, Baygi, Torkaman, and Mahloojifar (2010), pressure ulcers develop below the skin surface and are only found later after the tissue damage has occurred, which makes it difficult to detect pressure ulcers.

The incidence of pressure ulcers varies from 0.4% to 38% in major hospitals, 2.2% to 23.9% percent in those on for residents in long-term care, and 0% to 17% percent in home care settings (Kaur, Singh, Dhillon, Tweari, & Shekon, 2015). It was noted by Thomas and colleagues (2015) that when patients had one additional day added to their hospital stay their chances of developing a pressure ulcer grew by 47% compared to those that went home as expected. Patients who have diabetes have a 95% chance of developing a pressure ulcer faster than those who did not have diabetes (Thomas, Vinodkumar, Mathew, & Setia, 2015). Carvalho and colleagues (2015) reported that patients are at a high risk of developing a pressure ulcer simply due to the use of critical intravenous drip medications, mechanical ventilation, and invasive monitoring (Carvalho, Gomes, Gomes, Valenca, & Cavalcanti, 2015).

Research showed that the scientific knowledge of nurses was deficient and that the high incidence of pressure ulcers is a standard feature of hospitalization (Dantas et al., 2013). Other studies have analyzed the nursing educators’ understanding and prior experience in wound healing and noted that increased training in wound prevention and treatment had an improved

understanding from their student's standpoint (Vieira, Oliveira, & Valente, 2013). Also, many research studies demonstrate that pressure ulcers generate physical pain, emotional discomfort, a feeling of incapability, physical dependency on caregivers, deformities, and suffering on the part of the family, delaying the process of healing and the recuperation of the patient. "Evidence-based pressure ulcer prevention is fundamental to patient safety" (Sving, Gunningberg, Hogman, & Mamhidir, 2012). Care quality is created in situations where patients and care providers meet. How registered nurses work with pressure ulcer prevention and their role and communication particularly with nurse aides should be of primary concern to them as well as to healthcare managers. Cox, Roche, and Van Wynen (2011) suggest that nurses lack current knowledge about appropriate strategies for assessing and preventing pressure ulcers. According to Zhang et al. (2015) the type of wound dressing applied to a wound will also affect the healing of the wound.

Findings

The research presented in this literature review tells us that there is a substantial incidence of pressure ulcer development in acute care facilities, to which there is limited research to support that there is a sufficient amount of education in preventing and treating pressure ulcers, or that there is any training available to nurses. The literature review also tells us that pressure ulcer prevention and treatment should be a top priority to nurses in all settings.

Critique of Previous Research Methods

There is limited research noted about what registered nurses currently know about pressure ulcer prevention and treatment. The literature review covered in this document includes studies limited to the prevalence of pressure ulcer prevention and treatment. None of the studies noted in the literature review mentioned surveying the nurses about what they know or understand about pressure ulcer prevention or treatment options. They only indicate that there is

a lack of understanding drawn from the conclusions surrounding statistical pressure ulcer development.

Summary

This literature review has provided evidence that there is a compelling need for additional research surrounding a nurse's understanding of prevention and treatment of pressure ulcers.

While the research presented in this review showed us that there is a substantial incidence of pressure ulcer development in acute care facilities, there is limited research to support that there is a sufficient amount of education in preventing and treating pressure ulcers, or that there is any training available to nurses. To further evaluate prevention and treatment, research on a nurse's current understanding of the topic is needed.

CHAPTER 3. METHODOLOGY

Purpose of the Study

Given all the information discussed, the primary investigator conducted a quantitative study to examine the current knowledge of nurses, from a variety of settings, of prevention and treatment options of pressure ulcers.

Research Questions and Hypotheses

Research questions answered by the research study are: (a) Do registered nurses in a variety of settings have a good understanding of pressure ulcer prevention and treatment, (b) What do registered nurse already know about pressure ulcer prevention and treatment, and (c) Do they feel that they have enough training to treat and care for pressure ulcers adequately? The research hypothesis was that registered nurses would not have a good understanding of pressure ulcer prevention and treatment options and that registered nurses' will feel they will not have enough training to treat and care for pressure ulcers adequately.

Research Design

This study used a descriptive quantitative study design. A descriptive quantitative design was a good fit for this study since there was no interaction between the participants and the primary investigator and the only information examined in this study was the RN's knowledge. RN's will have access to a 25 question electronic survey carried through PsychData using a four-point Likert Scale. All the questions will be presented to the nurse at one time. The first ten

questions used the four-point Likert scale of (a) never, (b) rarely, (c) sometimes, and (d) often. Questions number 11-20 had a Likert scale of (a) little, (b) moderate, (c) extreme, and (d) not at all. The last five questions presented used a Likert scale of (a) none, (b) little, (c) more, and (d) a lot.

Target Population

The setting for this study was online. Priority participation was given to nurses living within the Northeast region of North Carolina as outlined by the NCNA (North Carolina Nurses Association [NCNA], 2016). Nurses that were eligible to participate in this study were all residents of the State of North Carolina and lived in the Northeast region of North Carolina. Participation did not require any classroom attendance or travel but did require access to a computer and the Internet since the study participation is online.

Sample

The final sample size was 35 registered nurses (RNs). The variables in this proposed study are the following: (a) participant demographics (including age, gender, experience, race, education level, and physical location), (b) facility location/specialty (type of nursing), (c) current knowledge of the topic, and (d) the experience of the nurse. These variables were evaluated further in the study. Registered nurses excluded from the study were those who were non-permanent resident of North Carolina, did not have an active RN license or were fully retired, and those currently under investigation by the North Carolina Board of Nursing.

Procedures

Advertising for sampling of participants took place in the monthly email publications issued by the North Carolina Nurses Association (NCNA) (Appendix A). No nurses responded to

the monthly e-newsletter ad, so contact to NCNA members was made via a member listserv (Appendix B). Advertising continued until the sample size of 35 registered nurses was obtained.

Registered nurses who were interested in participating in this study were asked to make contact with the primary investigator using email communication. A follow-up email was then sent confirming with the RN that they were willing to participate. Interested registered nurse participants were provided with information about the proposed study and a link to access the survey in the email communication from the listserv (Appendix C). The survey hyperlink took the participant to the informed consent to review before they were able to view and respond to the survey questions (Appendix D). In the consent, all participants were made aware that this study was voluntary and that there was no compensation for participating.

A total of 510 NCNA members received an email via the NCNA member listserv, as there were no responses from the ad placed in the monthly e-newsletter. A total of 37 nurses responded with interest. A follow-up email was sent to those 37 nurses thanking them for interest in the study and provided them with the date the study would be available. A total of 35 nurses completed the survey. The overall response rate was 7.25% (510 members with 37 replies). A total of 18 RN's made contact with expressing interest in the first week after receiving the email. An additional 19 participants made contact over the first month. Ninety-five percent of nurses who expressed interest (N=35) participated in the survey with two nurses who did not. After all interested participants had made contact with the primary investigator, the participant was then provided with the link to access the survey and the password for the survey. The survey remained open for 30 days. Two follow-up emails were sent to all 37 nurses reminding them of the survey and the closing date of the survey (Appendix E).

Protection of Participants

Protecting the rights of the study participants and the integrity of this research is critical. As a result, the primary investigator sent the informed consent via email and was available at the beginning of the survey. The informed consent included information about the study as well as the rights and responsibility of the participant. Also incorporated in the informed consent was the disclosure that although every effort would be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. Although this was very unlikely, if the disclosure were necessary, the University of Mount Olive would take all steps allowable to protect the privacy of personal information. After review of the consent by the participant, they were asked to acknowledge the document electronically, and then they were able to view the proposed survey.

Data Analysis

Analysis of the data was through PsychData. According to PsychData (2016) they, “Create highly customized reports for each survey including statistics for each question (mean, standard deviation, median, mode, max/min), bar and pie charts, and filtering by questions and answers” (para. 2). At the conclusion of the research, one result finding did indicate that RNs felt that there was a lack of training and education provided to them.

Instruments

According to PsychData (2016), some key features of the surveys include informed consent statements or debriefing information that can be presented separately from research questions using a page break and Secure Sockets Layer (SSL) encryption technology, which allows all data to be password protected and protects the confidentiality of participants.

Participants were presented with the survey consisting of 25 questions using a Likert Scale (Appendix F). The survey was developed by the primary investigator and then underwent pilot-testing by five nurses to determine modifications that may be needed to the questions to enhance comprehension and understanding, as well as the validity and reliability of the material. The Likert Scale had a four-point range. The four-point range varied depending on the questions presented but was portrayed as (a) none at all, (b) a little, (c) moderate, and (d) extreme. Other ranges were: (a) never, (b) rarely, (c) sometimes, and (d) often.

Ethical Considerations

The University of Mount Olive (UMO) institutional review board (IRB) application was completed and approval was granted. Ethical considerations for this study included reassuring research participants there was minimum risks for their participation, that their rights of anonymous responses were secured and that they could stop completing the survey at any time. There was no healthcare organizational involvement in this study and no affiliation that resulted in funding or negotiations for shared results.

Summary

A total of 510 nurses were invited to take part in this study with only 37 who responded. Thirty-five of those 37 completed study. Participants were presented with the survey consisting of 25 questions using a Likert Scale. The four-point range varied depending on the questions presented but was portrayed as (a) none at all, (b) a little, (c) moderate, and (d) extreme. Other ranges were: (a) never, (b) rarely, (c) sometimes, and (d) often.

CHAPTER 4. RESULTS

Background

Research shows that there is a substantial incidence of pressure ulcer development in acute care facilities, which there is limited research to support that there is a sufficient amount of education in preventing and treating pressure ulcers, or that there is any training available to nurses. To further evaluate prevention and treatment, research on a nurse's current understanding of the topic was needed.

Description of the Sample

A total of 510 members of the North Carolina Nurses Association (NCNA) northeast region received an email via a member listserv inviting nurses to take part in the survey. A total of 37 nurses responded with interest. A follow-up email was sent to those 37 nurses thanking them for interest in the study and provided them with the date the study would be available. A total of 35 nurses completed the survey. The overall response rate was 7.25% (510 members with 37 replies). A total of 18 RN's made contact with the primary investigator expressing interest in the study in the first week after receiving the email. An additional 19 participants made contact over the first month. After all interested participants had made contact with the primary investigator, the participants were then provided with the link to access the survey and the password for the survey. The survey remained open for 30 days. Two follow-up emails were sent to all 37 nurses reminding them of the survey and the closing date of the survey. Ninety-five

percent of nurses who expressed interest (N=35) participated in the survey with two nurses who did not.

The nurses who took part in the study were primarily female (n=34) with one male nurse (n=1). Nurses reported that 57% (n=20) of them were older than 40 years old, that 20% (n=7) were between that ages of 31-40 years old, and that 20% (n=7) were below 30 years old. Nurses with a Bachelor's of Science in Nursing (BSN) degrees make up the largest portion of the study (54%, n=19), followed by Associates Degree (26%, n=9), and the Masters of Science in Nursing (MSN) degree (11%, n=4). Nurses with more than 15 years of experience make up 43% (n=15) of the sample size followed by those with less than five years at 23% (n=8), and those with five to ten years at 23% (n=8). Acute care practice nurses represent the largest portion of the sample size (74.3%, n=26), followed by office or outpatient practices (20%, n=7), and private practice (5.7%, n=2). No nurses that participated in this study reported working in long-term care (Figure 1).

Hypothesis Testing

Testing done before the completion of the study was a pilot testing on the survey questions. The primary investigator developed the survey and then underwent pilot testing by five registered nurses to determine modifications that may be needed to the questions to enhance comprehension and understanding, as well as the validity and reliability of the material. The research hypothesis is that registered nurses will not have a good understanding of pressure ulcer prevention and treatment and that registered nurses will not feel they have enough training to treat and care for pressure ulcers. The risk of a Type 1 error (α) for this study was set at .05. The power ($1 - \beta$) is set at .80.

Summary

Do registered nurses in a variety of settings have a good understanding of pressure ulcer prevention and treatment? The majority of nurses surveyed (74%, n=26) reported that they felt they had a necessary foundation for pressure ulcer prevention and treatment but later data will show that they also think more training is needed.

Fifty-seven percent (n=20) of registered nurses felt that more education was needed for prevention and treatment of pressure ulcer with 60% (n=21) of registered nurses reporting they felt that additional training and education should be offered to nurses to aid in prevention and treatment of pressure ulcers.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Summary of the Results

A total of 510 members of the North Carolina Nurses Association (NCNA) northeast region received an email via a member listserv inviting nurses to take part in the survey. A total of 37 nurses responded with interest. The majority of nurses surveyed (74%, n=26) reported that they felt they had a basic foundation of pressure ulcer prevention and treatment, but later data showed that they also think more training is needed. Nurses (54%) reported having extreme knowledge about pressure ulcer prevention and treatment options yet also felt the need for more education. It was determined that 49% (n=17) of registered nurses noted that they rarely get training on current wound care techniques and that 60% (n=21) of registered nurses report that they are the ones doing the wound care for patients (Figure 2). Fifty-seven percent (n=20) of registered nurses felt that more education was needed for prevention and treatment of pressure ulcer. Sixty percent (n=21) of registered nurses reporting they felt that additional training and education should be offered to nurses at their place of employment to aid in prevention and treatment of pressure ulcers with a 95% confidence level (Figure 3). Using a desired α of .05 and a $1 - \beta$ of .80, results it is thought that 59% to 61% of nurses would feel that more time should be spent educating nurses about prevention and treatment of pressure ulcers with a 95% confidence level.

Conclusions Based on the Results

The feedback and information gathered in the research help to support the idea that additional training and education should take place surrounding pressure ulcer prevention and treatment options. At the conclusion of the study, one result finding did indicate that RNs felt that there was a lack of training and education provided to them. The conclusion was expected to be that RN's from a variety of settings require additional training for prevention and treatment options with an expected recommendation that this education should be updated on a yearly basis and included in the new-hire RN orientation.

Strengths/Limitations

Strengths of this study were that this was a small exploratory quantitative study. By using a smaller sample size, the primary investigator was able to focus on the main finding to raise new questions to be presented for additional research. The survey developed for this study was tested by five registered nurses currently in practice and modified before being introduced to the study participants.

Limitations of this study were that it was only conducted online and to nurses in one region of the state. Other limitations identified were no nurses that reported being employed in a long-term care setting and that there was no detailed analysis from what nurses who reported working in acute care knew compared to those that do not work in acute care. After the survey opened it was noted by one study participant that there was an omission of the Doctorate of Nursing Practice from the answer choices in the demographic/education level portion of the survey. An email was sent to that participant asking them to select the equivalent degree option. All participants were asked to please email the PI if they had a DNP (Appendix G). This level

could be manually entered into the results for a more accurate analysis if needed. No other participants responded to this email.

Implications for Practice

It was hypothesized that nurses would report that there is currently no annual training that is offered to nurses outside their new hire orientation, that there are no requirements to have any additional training, and that there are no annual competency requirements. Given the expected outcome, the proposal of additional training for nurses is vital to the practice of nursing. Nurse educators and nurse administrators need to address these current needs for evidenced-based information of the prevention and treatment of pressure ulcers for employed RNs.

Recommendations for Future Research

While a need for further education and training was identified, acute care nurses should be surveyed specifically, as this was where the majority of the sample population reported working. The research conducted by the PI raised the question of what do nurses in acute care facilities know about pressure ulcer prevention and treatment.

Conclusion

The conclusion of this study indicates that registered nurses do not receive adequate training of pressure ulcer prevention and treatment and that nurses have identified a need. Sixty-eight percent of nurses reported they do not get training on pressure ulcer prevention or treatment options as well as there is a need for more education. Registered nurses across different practice areas care for patients with pressure ulcers, yet the nurses do not receive appropriate up-to-date education and training about how to care for their patients with pressure ulcers. Therefore, there is an identified need to continue research in the area of acute care as well as a suggested need for

annual training of pressure ulcer prevention and treatment as this was where the majority of the sample size reported to practice nursing.

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APPENDIX A

Advertising published in Tar Heel Nurse



Participants needed for a short-term study on registered nurse's knowledge of prevention and treatment of pressure ulcers. The study purpose is to determine what registered nurses currently know about pressure ulcer prevention and treatment. Participation is 100% online via PsychData. No compensation given. Email Jennifer King, BSN at jnk8375@moc.edu for information.

APPENDIX B

Initial Email sent via Listserv

My name is Jennifer King, and I am a Master of Science in Nursing (MSN) student at the University of Mount Olive (UMO) in Mount Olive, NC. I am currently conducting a research study on registered nurse's knowledge of prevention and treatment of pressure ulcers.

I am asking all interested participants to please volunteer for a study that is 100% online and consisted of 25 questions. The goal of this study is to determine what registered nurses know about prevention and treatment of pressure ulcers. The only information that is sought in this proposed study is the nurse's knowledge.

Email Jennifer King, BSN at jnk8375@moc.edu for more information.

Jennifer King, BSN, RN
MSN student at UMO
Member ID 55516079

APPENDIX C

Invite to Survey

Dear Participant,

I am conducting a survey for my Masters of Science in Nursing Degree at the University of Mount Olive and would like your participation.

To participate, please click on the following link:

<https://www.psychdata.com/s.asp?SID=175648>

My survey is titled: “A Registered Nurses Understanding of Pressure Ulcer Prevention and Treatment.”

The survey is password protected, so please use the word “Study” when prompted to do so.

Please have this study completed by April 1, 2017. If you have any questions or would like a copy of the informed consent sent to you, please let me know. Thank you again for your willingness to assist in my research.

Thank you,

Jennifer King, BSN, RN
MSN student at the
University of Mount Olive
jnk8375@moc.edu

APPENDIX D

Informed Consent Statement

You are being asked to take part in an online research project called *A Nurses Understanding of Prevention and Treatment Options for Pressure Ulcers* conducted by Jennifer King, BSN, RN (PI). The purpose of the study is to assess what knowledge nurses have on the prevention and treatment options for pressure and if additional yearly training is indicated.

You may not benefit directly from taking part in this study; however, your participation may help to present the proposal that there is a knowledge deficit regarding current prevention and treatment options for pressure ulcers and that as a result, additional yearly training is indicated.

Your identity and your answers will be kept confidential as no personal information is required to participate. All data collected in this study will be treated confidentially. No participants will be identified in any report or publication of this study. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. Although this is very unlikely, if disclosure is necessary, the University of Mount Olive will take all steps allowable to protect the privacy of personal information. The results of the study will be presented to the nursing faculty at the University of Mount Olive and with recommendations, the possibility of submission to the North Carolina Nurses Association for publication in *Tar Heel Nurse*.

You may withdraw from this study at any time. There is no penalty for you if you withdraw. If there are any questions and additional concerns regarding your participation or rights as a subject in this research you may contact the University of Mount Olive IRB Chair, Dr. Joy Kieffer, at jkieffer@MOC.edu or phone number (919) 299-4930. This research has been reviewed and is currently pending approval by the Human Subjects Review Committee (IRB) at the University of Mount Olive.

By signing you below, you attest that

I have read the information provided above. I have had the opportunity to ask, and have had answered, all of my questions regarding this study. I voluntarily agree to participate in the study. I understand that I will receive a copy of this form after it has been signed if I request one.

Signature of Research Participant Date

Printed Name of Research Subject

APPENDIX E

Follow up email

Good midday participants,

If you have not already done so, please go to the following link to complete the survey:

<https://www.psychdata.com/s.asp?SID=175648>

The survey is password protected, so please enter the word *Study* when prompted to do so.

Thank you all for your willingness to help me in my study.

Thank you,

Jennifer King, BSN, RN

MSN student at the

University of Mount Olive

jnk8375@moc.edu

APPENDIX F

Survey using Likert Scale

| Survey | | | | |
|---|-------|--------|-----------|-------|
| Questions | Never | Rarely | Sometimes | Often |
| 1. How often do you change a pressure ulcer dressing? | | | | |
| 2. How often do you get training on current wound techniques? | | | | |
| 3. How often is a wound care nurse available if you have questions regarding pressure ulcer wound care? | | | | |
| 4. Are there physician's orders clear on what type of dressing to apply? | | | | |
| 5. How often are you asked what type of dressing should be used? | | | | |
| 6. How often do you look up the type of pressure ulcer you are assessing? | | | | |
| 7. How often do you care for a patient with a pressure ulcer? | | | | |
| 8. How often do you assess the patient's wound? | | | | |

| | | | | |
|--|--------|----------|---------|------------|
| 9. How often does a wound care nurse at your facility do the patient's wound care for you? | | | | |
| 10. How often do you stage a pressure ulcer? | | | | |
| | Little | Moderate | Extreme | Not at all |
| 11. How comfortable are you in assessing various wounds? | | | | |
| 12. How much understanding do you have about the development of pressure ulcers? | | | | |
| 13. What understanding do you have about the prevention of pressure ulcers? | | | | |
| 14. How much knowledge do you have regarding dressing a wound? | | | | |
| 15. How much knowledge do you have about different wound types? | | | | |
| 16. How much knowledge do you have about types of wound dressings? | | | | |
| 17. How much knowledge do you have about whom to contact to get | | | | |

| | | | | |
|--|--------|----------|--------|---------|
| information regarding wound dressings/prevention? | | | | |
| 18. How much knowledge do you have about the development of pressure ulcers? | | | | |
| 19. How much knowledge do you have about medications used for wound care? | | | | |
| 20. How much comfort do you have in treating and preventing pressure ulcers based on your current understanding? | | | | |
| On a scale of 1-4 with 1 being none at all and 4 being a lot, please answer the next five questions. | 1-none | 2-little | 3-more | 4-a lot |
| 21. How much more education do you think you need to prevent and treat pressure ulcers? | | | | |
| 22. How much time do you think should be given to prevention and treatment of pressure ulcers? | | | | |

| | | | | |
|---|--|--|--|--|
| <p>23. How much training should facilities offer regarding prevention and treatment of pressure ulcers?</p> | | | | |
| <p>24. How much training should be given to various types of wound dressings?</p> | | | | |
| <p>25. How much time should be spent educating registered nurses about prevention and treatment of pressure ulcers?</p> | | | | |

APPENDIX G

Email addressing DNP omission

Good evening participants,

Earlier today I sent an email to you with the link to access the survey that I developed. Please take a few minutes and complete the survey when you get a free moment to do so. I am attaching in this email the informed consent for your records. There is no need to do anything with it. You submitting the survey is your consent.

I wanted to send this email out to you to let you know that this is my first research project and you may find errors in the wording of the survey. I do apologize for any grammar issues.

Also, it was brought to my attention today from a survey participant that my survey has excluded Doctor of Nursing Practice (DNP) as a selection for a level of education. This was an oversight on my part, and the survey should have read “Doctoral” and not Ph.D. or EdD. My oversight is by no means a reflection of the University of Mount Olive or any of its staff.

As a result, if you hold a DNP, please contact me so that I can manually enter your level of education. Please enter the PhD-EdD on the survey so that it is complete, but I will go back in at the conclusion and enter DNP to make sure that you are included.

If you would like a copy of the completed research project once it is completed, please let me know. Once all data has been collected, the final thesis will be written and submitted for publication.

Again, I want to thank you for all that you do as a nurse and for helping out a fellow nurse. Without your assistance, this project would not be possible.

Thank you

Jennifer King, BSN, RN
MSN student at the
University of Mount Olive
jnk8375@moc.edu

Table 1

The nurses understanding of pressure ulcer prevention and treatment distributions of the four-point Likert data used in the study.

| Questions | 1 (%) | 2 (%) | 3 (%) | 4 (%) | Mean | SD | Skewness |
|-----------|----------|----------|----------|----------|--------|--------|----------|
| 1 | 20 | 45.7 | 14.3 | 20 | 2.3429 | 1.0126 | -1.0158 |
| 2 | 20 | 48.6 | 28.6 | 2.9 | 2.1429 | .7613 | +.5631 |
| 3 | 28.6 | 22.9 | 28.6 | 20 | 2.4000 | 1.1006 | -1.635 |
| 4 | 11.4 | 20 | 34.3 | 34.3 | 2.9143 | .9963 | -.2580 |
| 5 | 20 | 22.9 | 34.3 | 22.9 | 2.6000 | 1.0474 | -1.1456 |
| 6 | 25.7 | 22.9 | 34.3 | 17.1 | 2.4286 | 1.0498 | -.5442 |
| 7 | 2.9 | 42.9 | 34.3 | 20 | 2.7143 | .8132 | -1.1067 |
| 8 | 0.0 | 17.1 | 37.1 | 45.7 | 3.2857 | .7329 | +2.2188 |
| 9 | 60 | 5.7 | 28.6 | 5.7 | 1.8000 | 1.0365 | +2.3154 |
| 10 | 20 | 45.7 | 22.9 | 11.4 | 2.2571 | .9053 | +.8519 |
| 11 | 20 | 54.3 | 20 | 5.7 | 2.1143 | .7845 | +.4370 |
| 12 | 2.9 | 57.1 | 37.1 | 2.9 | 2.4000 | .5952 | +2.0161 |
| 13 | 0.0 | 42.9 | 54.3 | 2.9 | 2.6000 | .5451 | -2.2014 |
| 14 | 14.3 | 54.3 | 31.4 | 0.0 | 2.1714 | .6540 | +.7862 |
| 15 | 14.7 | 64.7 | 20.6 | 0.0 | 2.5888 | .5912 | +.2983 |
| 16 | 34.3 | 45.7 | 20 | 0.0 | 1.8571 | .7228 | -.5926 |
| 17 | 25.7 | 34.3 | 34.3 | 5.7 | 2.2000 | .8880 | +.6756 |
| 18 | 2.9 | 54.3 | 40 | 2.9 | 2.4286 | .5993 | +2.1455 |
| 19 | 34.3 | 48.6 | 14.3 | 2.9 | 1.8571 | .7613 | -.5631 |
| 20 | 17.1 | 51.4 | 28.6 | 2.9 | 2.1714 | .7362 | +.6984 |
| 21 | 0.0 | 31.4 | 57.1 | 11.4 | 2.8000 | .6234 | -.9624 |
| 22 | 0.0 | 0.06 | 2.9 | 37.1 | 3.3714 | .4832 | +2.3058 |
| 23 | 0.0 | 2.9 | 60 | 37.1 | 3.3429 | .5315 | +1.9354 |
| 24 | 0.0 | 0.0 | 71.4 | 28.6 | 3.2857 | .4518 | +1.8970 |
| 25 | 0.0 | 8.6 | 60 | 31.4 | 3.2286 | .5897 | +1.1629 |
| 26 | 22.9 | 22.9 | 11.4 | 42.9 | 2.7429 | 1.2269 | -.7335 |
| 27 | 25.7 | 57.3 | 11.4 | 8.6 | 2.0286 | .8447 | +1.0157 |
| 28 | 2.9 | 20 | 20 | 57.1 | 3.3143 | .8871 | -2.3189 |
| 29 | 5.7 | 74.3 | 0.0 | 20 | 2.3429 | .8600 | +1.1961 |
| 30 | 97.1 | 2.9 | NA | NA | 1.0286 | .1666 | +.5150 |

Note. Questions 1-10 use the responses of (1) never, (2) rarely, (3) sometimes, and (4) often. Questions 11-20 use the responses of (1) little, (2) moderate, (3) extreme, and (d) not at all. Questions 21-25 use a scale of (1) none, (2) little, (3) more, and (4) a lot. The last group of questions, 26-30 are demographic questions, with question 30 being female or male.

Configuration Do nurses feel more time should be spent educating about prevention and treatment of pressure ulcers. =0.6 (21/35) with N=35.

$$\text{Formula} = \hat{p} \pm z^* \sqrt{\frac{\hat{p}(1-\hat{p})}{N}}$$

$$0.6(1-0.6)$$

$$0.6(0.4) = 0.24$$

$$0.24/35 = 0.00685714$$

$$0.00685714(1.96) = 0.01344 \text{ (margin of error)}$$

$$0.6 + 0.01344 = 0.61344$$

$$0.6 - 0.01344 = 0.58656$$

Based on these results it is thought that 59% to 61% of nurses would feel that more time should be spent educating nurses about prevention and treatment of pressure ulcers with a 95% confidence level.

\hat{p} = sample proportion

z^* = z -values for Various Confidence Levels

Figure 1
Practice setting

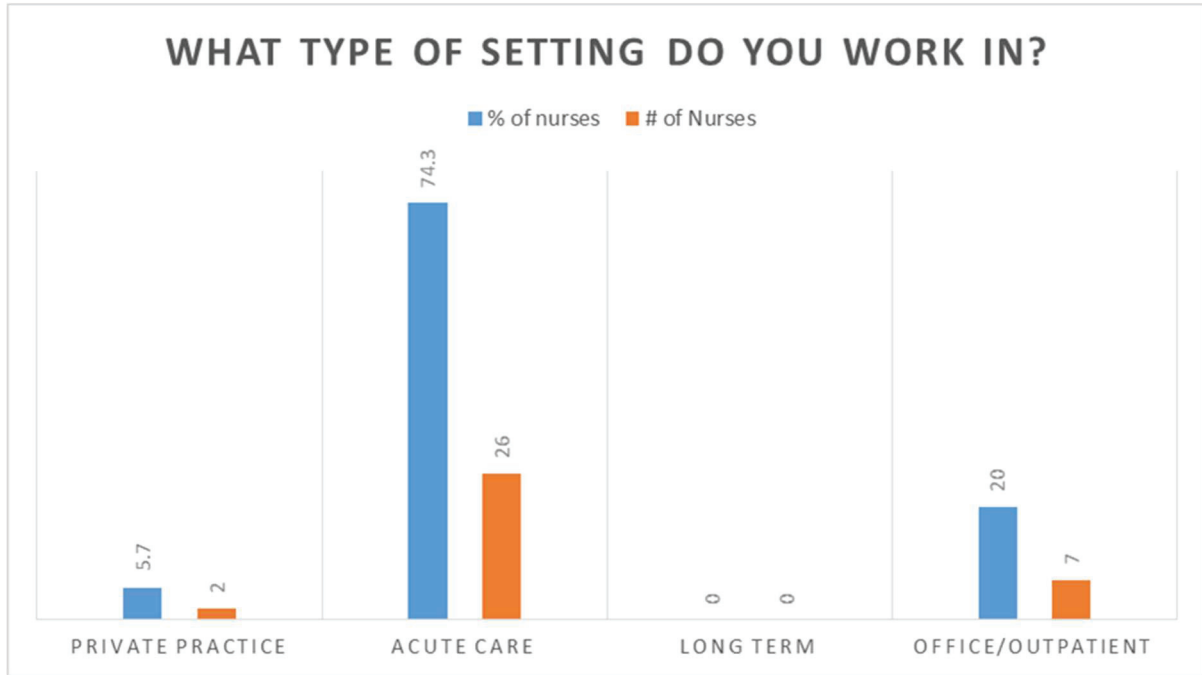


Figure 2
Current knowledge

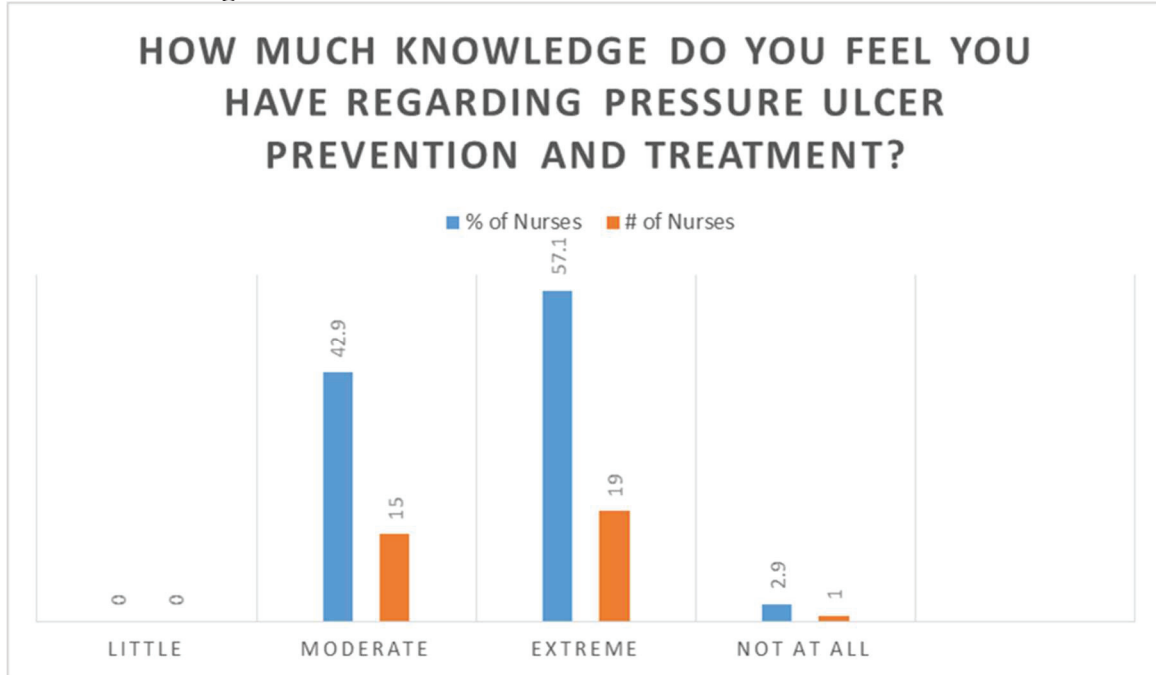


Figure 3
Needed education

