

A DESCRIPTIVE CORRELATION STUDY REGARDING  
THE EFFECT OF NURSES' ATTITUDES TOWARD  
PRESSURE ULCER RISK AND CARE

by

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Amy Gail Crowder-Klobofksi

January 2013

DEDICATION

Dedicated to the two people in my life that support me more than I ever know, my Mom and my Husband, and to the two people in my life that supported me more than I ever realized, In Memory of my Grandmother Daisy and my Step-Dad Carlton.

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**ABSTRACT**

Little is known regarding the relationship between pressure ulcer prevention, nurses' knowledge and attitudes. This thesis will examine the relationship between nurses' knowledge and attitudes regarding pressure ulcers through a literature review and a survey of a hospital and long term care unit in a frontier setting in one frontier western state. While most nurses will admit they know how to prevent pressure ulcers, they will also admit that it is not a high priority compared to other duties as well (Samuriwo, 2010). Frontier facilities need to maintain continuing education for nurses that educated nurses provide consistent quality care.

## CHAPTER ONE

## INTRODUCTION

Long term care facilities deal with a unique and distinctive population. The majority of residents in a long term care facility are aged, have multiple co-morbidities and have limited mobility (Ousey, 2010). Consequently, this population is at high risk for pressure ulcer development. Pressure ulcers (also known as bed sores, decubitus ulcers and pressure sores) can result in a painful and debilitating experience (McQueen, Gold, McLennan, & MacDiarmid, 2009).

Nurses are charged with the assessment and care planning for any potential risk of, or actual skin issue. Yet, nurses in the United States have been found to have a “C” level of pressure ulcer knowledge (Zulkowski & Ayello, 2005). Much of the needed knowledge for the nurses resulted from in-service education and on- the-job training after graduation (Cline, 2012). Nurses’ knowledge, attitudes and skills are crucial to assure pressure ulcer prevention.

Problem

Little is known about the effect of nurses’ knowledge and attitudes toward pressure ulcer prevention and the pressure ulcer prevention care they provide.

### Purpose

The purpose of this project is to examine the relationship between nurses' attitudes toward pressure ulcer care and their knowledge about pressure ulcer care in a frontier nursing home.

### Research Questions

Exploring a nurses' knowledge or lack of knowledge regarding pressure ulcers can determine how a facility operates. The following research questions will help explore the issues surrounding pressure ulcers.

1. What are nurses', who practice in a frontier setting, pressure ulcer knowledge scores on a standardized test?
2. What are nurse's attitudes toward pressure ulcer prevention and care?
3. Is there a relationship between nurses' knowledge, attitude, skills, and care for pressure ulcer prevention?

### Background

The National Pressure Ulcer Advisory Panel (NPUAP) describes a pressure ulcer as damage to an area of skin from unrelieved pressure or pressure in combination with shear (NPUAP, 2012). There are 6 stages of pressure ulcers which are described in detail in Appendix A Table 1.

This staging system is used to describe only pressure ulcers. Wounds from other causes are described by other systems.

“Pressure ulcers affect an estimated three million adults in the United States. Estimates of the incidence of pressure ulcers range from 0.4 to 38% in acute care hospitals, 2 to 24% in long-term care nursing facilities, and 0 to 17% in the home care setting” (Yap & Kennerly, pg. 107, 2011). The United States had an overall prevalence of pressure ulcers across these three settings of 13.5 % in 2008 and 12.3 % in 2009 (Agency for Healthcare Research and Quality, 2012). While pressure ulcers are a top priority for the medical field and articles are numerous the data quoted from 2009 is the most current published.

Increased emphasis has been placed on preventing pressure ulcers. While it is estimated pressure ulcers affect an estimated three million adults in the United States, the quality of care being provided may not be consistent. The likelihood of being discharged from a hospital setting to a nursing home, especially in the senior citizen category, increases substantially if pressure ulcers are present. Data on the cost of treatment for pressure ulcers has shown treatment costs are two and a half times higher than the cost of preventive treatment (Bry, Buescher, & Sandrik, 2012).

Data on the cost of treatment for pressure ulcers vary, but the estimated cost for the average Stage II pressure ulcer is \$2,000, with the cost for more advanced pressure ulcers ranging from \$ 37,000 and \$70,000. Treatment costs may be two and a half times the cost of prevention. An estimate for the total annual health care costs related to pressure ulcers in the United States is approximately \$11 billion dollars (Rosen, 2008).

Increased emphasis has been placed on preventing pressure ulcers. It has been shown that not implementing consistent pressure ulcer prevention practices increases the

likelihood of discharge from a hospital to a nursing home for continued treatment of a primary or secondary pressure ulcer. In addition, more than half of all patients, with either a primary or a secondary diagnosis of pressure ulcer, needed discharge to a long term care facility (Russo, Steiner, & Spector, W, 2008). Of all hospitalized patients admitted with a primary diagnosis of pressure ulcer, patients who were 65 and older accounted for 56.5% of the adult patients admitted, and had a three times longer length of stay than those hospitalized without a diagnosis of pressure ulcers (Russo, Steiner, & Spector).

Pressure ulcers are a top priority risk problem for long term care (LTC). Patients, confined to beds and wheelchairs, require nursing interventions for repositioning to help prevent pressure ulcers. Likewise, patients who experience a loss of bladder or bowel control can develop macerated skin that is more susceptible to the effects of friction damage if moisture issues are not treated. Dehydration and inadequate nutrition and poor sensory perception are also risk factors for pressure ulcer development (Ayello & Braden, 2001).

A patient with a pressure ulcer has a mortality risk that can range from 2 to 6 times greater than a patient without a pressure ulcer (McInernery, 2008). Risk factors for pressure ulcer development in residents living in nursing facilities can range from advanced age to having acute or chronic conditions. Being elderly can lead to inability to move certain parts of the body without assistance. Chronic comorbidities, stroke, brain injury or neuromuscular disease such as Parkinson's and different types of dementia can also lead to being confined to a wheelchair, or being bedridden. Chronic conditions such

as diabetes or vascular disease can inhibit blood flow causing pressure ulcers. Bladder disorders can lead to incontinence. If moisture is left next to the skin for long periods of time the skin will break down which is a risk factor for pressure ulcers. Being nutritionally compromised can also lead to pressure ulcers (Bry, Buescher, & Sandrik, 2012).

All nurses receive varying degrees of education regarding pressure ulcer prevention within their basic nursing education. Modern textbooks now offer more information than those of their historic counterparts. The problem with textbooks of this modern era is inconsistencies in the information from book to book. Some may have entire chapters dedicated to just pressure ulcers, while others may dedicate only a couple hundred lines (Ayello & Meaney, 2003).

Inadequate information about pressure ulcer prevention is important as the senior population is increasing within the United States. In the 2010 census, older adults defined as 65 and older, account for 13% of the total population. The 2012 Statistical Abstract shows the total population of 65 years and older was 29.6 million in 1990 and, in 2010, 38.6 million. Males within this group increased from 12.3 million in 1990 to 16.8 million in 2010 while females increased from 17.2 million in 1990 to 21.8 million in 2010. These facts should be given more weight within the educational content in nursing programs as “older adults are the largest population needing health care services for pressure ulcers” (Cline, 2012). Even though these facts are known and published, the statistical evidence shows that only one-third of all baccalaureate nursing schools offered a stand-alone gerontology course in 2003 (Cline, 2012). In 2010 only 10%-25% of

material was covered within associate degree programs (Cline, 2012). Even more current educational content is the fact that registered nursing students cover only 10%-25% of material was covered within associate degree programs (Cline, 2012). Even more current educational content is the fact that registered nursing students cover only 10%-25% of gerontological material in textbooks, leaving a little less than half of all registered nurses educated in associate degree programs regarding care for the older adult (Cline, 2012).

### Definitions

Pressure Ulcer: The National Pressure Ulcer Advisory Panel ([www.NPUAP.org](http://www.NPUAP.org), 2012) described a pressure ulcer as damage to an area of skin from unrelieved pressure or pressure in combination with shear (NPUAP, 2012). See Table 1. For this study a pressure ulcer may be considered to be any stage.

Nurse: A person who has attended classes, attained a certificate, associate degree in nursing or higher and passed the National Council Licensing Examination for Nursing or NCLEX (NCLEX, 2012). For this study a nurse may be an RN or LPN employed by a frontier nursing facility.

Frontier area: Frontier area is defined by the Rural Assistance Center as a population of six or fewer people per square mile and/or distance in time and miles to a population center (Rural Assistance Center, 2012).

<b>Stages &amp; Symptoms</b>	<b>Suspected Deep Tissue Injury</b> Suspected Deep Tissue Injury
	Purple or maroon localized area or blood filled blister due to damage of soft tissue from pressure and/or shear
	<b>Stage I</b> Intact skin, with non-blanchable redness of a localized area usually over a bony prominence
	<b>Stage II</b> Partial thickness tissue loss of the dermis that presents as a shallow open ulcer with a red or pink wound bed that is absent of slough
	<b>Stage III</b> Full thickness skin loss where subcutaneous fat may be visible but bone, tendon and/or muscle is not exposed
	<b>Stage IV</b> Full thickness tissue loss with exposed bone, tendon or muscle. Undermining and tunneling is often present
	<b>Un-stageable</b> A pressure ulcer that is covered with slough and/or eschar is considered unstageable until enough slough is removed so that the entire depth can be determined.

Table 1. Definitions of Pressure Ulcer Staging

The Office for Advancement of Health,

([www.raconline.org/topics/frontier/frontierfaq.php](http://www.raconline.org/topics/frontier/frontierfaq.php)) defines the term frontier facility location as sixty minutes or 60 miles along the fastest paved road to a population center. The county where this study was conducted, which is one frontier county in a frontier western state, has a population of 5.8 individuals per square mile. For this study a frontier facility is defined as an acute care or long term care in Hill county Montana.

### Framework

Bloom's *Taxonomy of Educational Objectives* will be used to provide structure for organizing this professional project (Eisner, 2000). The fundamental concept that will be explored is the correlation between a nurse's knowledge about pressure ulcer prevention, a nurse's attitude about pressure ulcer prevention, a nurse's pressure ulcer prevention skills, and care provided. The Educational Framework depicted in Figure 1 was used to develop a plan for recommended changes, assess the results of these changes, and modify plans for improvement in education and knowledge. This process includes:

- identifying areas of strength and areas of concern through data analysis;
- determining root causes;
- selecting goals, objectives, and strategies for improvement.

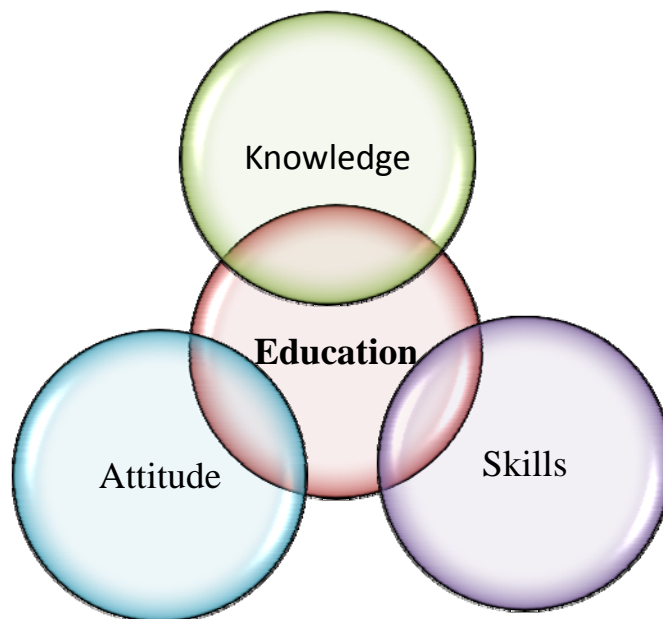


Figure 1. Education versus Knowledge, Attitude and Skills

This study addresses the relationship of nurses' knowledge, skills and attitudes regarding pressure ulcers. Aspects of Imogene King's Framework and Theory of Goal Attainment guided this study to identify the root cause of the problem and how to set goals and objectives for a possible solution. Nursing demands the ability to adapt to a changing environment, analyze and assess, plan and implement care (Fawcett, 2000). The nurse that is knowledgeable and educated will be better enabled to guide the patient into making a more informed decision, this leads into the attained goal of positive patient outcomes (King, 1990).

### Conclusion

The purpose of this project was to determine if there is a relationship between nurse's knowledge, and attitudes related to pressure ulcers and the resulting preventive treatments of pressure ulcers. The nurse in a frontier or rural setting may have less opportunity for continuing education and may not be aware of current national protocols for preventing and treating pressure ulcers. Assessing nurses' knowledge and investigating education that is available will be developed in Chapter 2.

## CHAPTER TWO

## REVIEW OF LITERATURE

This chapter reviews the current understanding, knowledge and attitudes toward pressure ulcer care.

Assessment of Nursing Knowledge

Assessment of nurses' knowledge of pressure ulcers has been studied in the United States and abroad. Knowledge based testing for registered nurses, such as the Pieper Pressure Ulcer Knowledge Test, (Pieper & Mott, Nurses' knowledge of pressure ulcer prevention, staging, and description, 1995) found if a nurse had read material pertaining to pressure ulcers after graduation from nursing school, they scored higher than a counterpart that had not read any material pertaining to the topic (Pieper & Mott, 1995).

Nursing attitudes begin with individual beliefs. These beliefs come from family, culture, social interactions, self-esteem and education. The nursing attitude continues to develop as a student. The type of exposure he/she has in the classes he/she takes and the lesson plans of the nurse educator all contribute to the values of a nurse. These values continue to develop over the course of his/her education and the emphasis is put on any one particular field of study. Wide spread recognition is that nurse educators have a fundamental role in the inclusion and transmission of nursing values (Haigh & Johnson, 2007).

Earning a diploma in nursing and passing the NCLEX exam is just the beginning of a professional journey. Certificate or diploma education is available for LPN nurses or for an RN, associate degree skills are necessary for patient care (LPN Programs and Education Requirements, 2012). Nurses have reported that higher development of skills, such as critical thinking, leadership skills and professionalism within the baccalaureate program for nursing are an essential part to overall outcomes and patient satisfaction.

Pieper and Mott (Pieper & Mott, 1995), indicate that if the nurses had the same basic education; just reading an article on pressure ulcers or attended a lecture in the past year had significantly better results on a knowledge test. The studies describes below whether in a hospital based facility or a nursing home facility in the United States or abroad all used a questionnaire based knowledge test and an attitude questionnaire. The National League for Nursing identified the effectiveness of an evidence based approach to education that is flexible and universal (Jalali-Nia, Salsali, Dehghan-Nayeri, & Ebadi, 2011). This approach will help nursing education regarding pressure ulcers, be uniform, whether nationally or internationally.

Smith and Waugh's descriptive study consisted of 435 registered nurses. The Pieper Pressure Ulcer Test was used to assess the nurses' knowledge. Ninety-six of the 435 surveys or 22% of the questionnaires were returned (Smith & Waugh, 2009, pg. 3). Test participants also felt that they encountered barriers, such as "patient too heavy, not enough time, not enough staff to help, patient refusal/non-compliant, equipment not available" (Smith & Waugh, 2009, pg5) while providing pressure ulcer prevention or

treatment (Smith, & Waugh, 2009). The significance of this study is a nurses knowledge was significantly higher when exposed to educational material.

Questionnaire based interviews to test nurses' knowledge regarding prevention and management of pressure ulcers in a hospital setting were also conducted in Egypt using a descriptive cross-sectional study with 122 subjects (El Enein & Zaghoul, 2009). This study demonstrated that, unless a nurse had received pressure ulcer education within the past year, his/her knowledge was below the minimal acceptable standards. Significantly higher scores were obtained when pressure ulcer education was available (El Enein & Zaghoul, 2009).

Investigations into the most widely used nursing textbooks in Germany revealed that most of the content of those textbooks regarding pressure ulcers was inadequate. Only one of the four books reviewed met with the German Expert Standard of Pressure Ulcer Prevention (Wilborn, Halfens, & Dassen, 2009, pg. 168). While investigating textbooks, the researchers also found most educators did not have access to current data bases. If the educator did have access to current data bases they did not have the skills needed to search those data bases which could lead to inaccurate information to students. (Wilborn, Halfens, & Dassen, 2009). In Germany 80 out of 200 teachers stated they did not use electronic databases. This study revealed healthcare, authors, publishers and educators have a responsibility to bridge the gap between obsolete information in textbooks and current research. If instructions regarding the use of the World Wide Web were available to compliment textbooks educators and students would be better informed (Wilborn, Halfens, & Dassen, 2009).

Descriptive correlation studies conducted in Quebec, Canada explored whether relationships between knowledge of pressure ulcers and certain nurses' characteristics or attitudes had any impact on the preventive care provided. Authorization to review patient files was obtained to review the treatment administered. The chart analysis revealed a discrepancy between what nurses know and what they actually put into practice. Factors such as the work environment and the nurse's perception of his/her own knowledge was considered in the results. This study had 620 eligible nurses; of those a total of 256 nurses actually participated for a 41% participation ratio. The maximum score to measure the level of nurses' knowledge was 45. In this particular study, the average score was 33.98 (Gallant, Morin, St-Germain, & Dallaire, 2010). The correlation concluded that pressure ulcer knowledge was insufficient. The significance of the correlation is the level of knowledge is related to the sectors that work and the training sessions available. It was concluded that knowledge is the starting point for quality nursing practice (Gallant, Morin, St-Germain, & Dallaire, 2010).

Registered Nurses relate their perspectives on nursing practices changed once they furthered their education. The American Nurses Association Code of Ethics was designed to measure values (Weis & Schank, 2009). The development of the Professional Values Scale – Revised (LeDuc & Kotzer, 2009), was intended to measure not only registered nurses' knowledge of pressure ulcers but also the values each participant held. While registered nurses and nursing assistants both had positive attitudes regarding pressure ulcers, the nursing assistants had significantly lower scores in the ability to identify factors known to be associated with the development of pressure

ulcers. This study highlighted the need to close the gap between knowledge and what is actually being put into practice in a health care facility (Kallman & Suserud, 2009).

The impact of nurses' attitudes on the prevention of pressure ulcers has been a topic of research. While participants of the studies understood the importance of pressure ulcer prevention, most felt that environmental factors often hindered maintaining a high level of pressure ulcer prevention. Most participants felt nurses that positive attitudes on prevention were more proactive. However, some participants felt nurses has little time to have hands-on care because of other duties. Because of these other duties, pressure ulcer prevention was delegated to someone else that may or may not have had the extra training to identify and prevent pressure ulcers. The conclusion is that there is a link between the attitude and value a nurse places on pressure ulcer prevention and the patient care they deliver (Samuriwo, 2010, pg. S6).

The Ray Samuriwo study refers to Moore and Prices study in 2004 that found 99% of 121 participants expressed a positive attitude toward pressure ulcer prevention. However, 78% were unable to correctly name the pressure ulcer grading scale used in their clinical area (Samuriwo, 2010)

### Conclusion

This chapter reviewed nurses' knowledge and how studies score that knowledge. Wilborn, Halfins and Dassen in 2009 investigated and brought to light only one in Four German textbooks had adequate information regarding pressure ulcers. Elliot, McKinley & Fox emphasized the need to accurately recognize early signs of pressure ulcers (Elliot,

McKinley, & Fox, 2008). Another study emphasizing the need to fill gaps in knowledge to delivery of care was completed by Glenhill and Hampton. This study revealed the overall knowledge of nurses regarding pressure ulcers was deficient. The problem was compounded because these nurses were directing other staff that had more hands-on with the patient (Gledhill & Hampton, 2005).

Attitudes can be affected by knowledge as demonstrated by Kallman & Suserud by showing that even though pressure ulcers are common opinions diverge as to what extent (Kallman & Suserud, 2009). These previous studies lead to the purpose of this study. The quantitative research will help identify the needs of patients for a frontier nurse.

Lack of extensive material regarding pressure ulcers in textbooks was explored. One nursing textbook from the 1900's only included two sentences. In 1923 two paragraphs were included in textbooks. Fast forward to 1993, five fundamental nursing textbooks and five medical-surgical textbooks were published; varying information was from less than 200 lines regarding pressure ulcers to three chapters. Ayello and Meany reviewed the same ten textbooks in 2001. Two of the textbooks were out of print; the other eight they found had been updated by at least one edition. In 1993, 10% of the textbooks mentioned the need to keep knowledge current. In 2001 50% identified this need. Ayello and Meany's recommendations after the review was one chapter should be devoted to prevention of pressure ulcers rather than be dispersed throughout the book (Ayello & Meaney, 2003).

Germany conducted an analysis of textbooks most frequently used in 2006. Conclusions were reached that the information in the books did not meet the German Expert Standard for overview of all preventative measures (Wilborn, Halfens, & Dassen, 2009).

This current study will help fill in the gaps by bringing to light the need for continuing education regarding pressure ulcers for nurses. Due to distance, frontier facilities may be using out dated methods of prevention and care for pressure ulcers. By surveying nurses in frontier facilities, current information on knowledge and attitudes were obtained, and an educational plan may be put into place to correct and further nursing knowledge.

## CHAPTER THREE

### DEMOGRAPHICS

#### Introduction

This purpose of this quantitative research study was to examine the relationship between nurses' knowledge, skills, and attitudes related to pressure ulcers and the implementation of preventive pressure ulcer care in a frontier facility. Nurses were surveyed on both their attitudes and knowledge of pressure ulcers at a frontier nursing home in one frontier western state.

#### Population

The total population of this frontier western state is 989,199 according to the U.S. Census 2011 estimate. The frontier facilities utilized for this project were a 49 bed acute care bed hospital in North Central Montana. There are approximately 2,200 patient's admitted to the hospital per year with an average residency rate of 76%. There are 65 RN's and 7 LPN's employed at the hospital. The long term care facility used for this study has 120 skilled beds with 92 residents and an average admission rate of 115 people per year. These facilities were chosen for this study because the location and small size of each met the criteria for frontier. All nurses, whether RN or LPN, employed at the rural hospital or nursing home at the time of data collection, were asked to participate. The frontier hospital and nursing home have policy and procedures in place regarding

pressure ulcers; however, at the time of this study there was no documentation that any current education had been done.

### Data Collected

The only demographic information collected was whether the participant was an RN or LPN. This information was not part of the original research question but was requested by the facility. Gender and age was not collected due to the small size of each facility to ensure anonymity.

The Zulkowski-Pieper Pressure Ulcer Knowledge Test, see Appendix C, is a new instrument designed by Dr. Karen Zulkowski, Montana State University. Determining the knowledge of pressure ulcers of nurses, especially those working in rural or frontier nursing facilities, is the purpose for this test. This test consisted of 115 questions with responses of 'true', 'false', or 'don't know'. Reliability and validity was from expert opinion. Dr. Zulkowski designed this instrument to focus on knowledge of pressure ulcers. The original Pieper Pressure Ulcer Knowledge Test consisted of 47 questions with the responses of 'true', 'false', or 'don't know' (Pieper & Mott, Nurses' knowledge of pressure ulcer prevention, staging, and description, 1995).

Attitude toward pressure ulcers were measured by The Staff Attitude Scale consisting of 11 questions, (Weis & Schank, 2009), with scoring on a Likert Scale (1 being and 5 being) (McLeod, 2008). The reliability assessment in Weis & Schank article was correlated using Cronbach alpha model (Weis & Schank). The Staff Attitude Scale,

Appendix D, can be used by a facility that reflects the staff views and beliefs regarding pressure ulcers (Berlowitz, 2011).

#### Steps of Data Collection

1. IRB approval was obtained
2. The Director of Nursing at the hospital and the Director of Nursing at the long term care were contacted by letter and a follow-up appointment was scheduled. The research study was explained and both gave verbal and written approval, see Appendix E. The dates for conducting the study was mutually agreed upon
3. Questionnaires were delivered to DON's who then had the Ward Clerks distribute them. A self-addressed stamped envelope was included with each questionnaire so the participants could mail the completed survey. On the envelope, both the address and return address labels were the research address to assure complete anonymity for the participants
4. Data was entered into SPSS 21.0 for analysis

#### Discussion of Human Rights

The cover letter of the questionnaire explained that participation in the survey was completely voluntary. Completing the survey should take about 15 to 20 minutes. Questions could be skipped or the participants could quit at any time. The completed survey would remain anonymous, and no identifiers were to be put on the completed

survey. The participants were asked to place the completed survey in the self-addressed envelope and return it to the researcher no later than October 8, 2012

### Planned Statistical Analysis

The survey information was first entered into an Excel spread sheet then transferred into a SPSS 21.0 program for statistical data. Mean, mode and range were used for description. All statistical information was reviewed for accuracy. The means were listed utilizing the T-Test to determine statistical significance and correlations between attitudes and mean section scores for knowledge testing were examined.

### Summary

While the facilities were small the ratio of participation was low. The sample when compared to other published surveys (Samuriwo, 2010) (Moore & Price, 2011) (Smith & Waugh, 2009) showed no significant improvement in understanding pressure ulcers. While RN's mean scores were greater than the LPN's there were more RN's completing the survey so the significance may be skewed.

## CHAPTER FOUR

## RESULTS

This project was implemented to examine the relationship between the nurses' knowledge and attitudes related to pressure ulcers and pressure prevention. This chapter reviews the research questions, the data that was collected and the statistical findings.

The purpose of this descriptive correlational study was to focus on the relationship between nurses' knowledge and attitudes in a frontier setting in relation to pressure ulcers using three main questions. The research questions were: Question 1: What are nurses' pressure ulcer knowledge scores on a standardized test? Question 2: What are nurses' attitudes toward pressure ulcer prevention and care? Question 3: Is there a relationship between nurses' attitudes, skills and knowledge for pressure ulcers?

Between the hospital and nursing home participating in this study, of the 100 surveys that were distributed 70% was distributed to the hospital and 30% to the nursing home. Of the 100 delivered surveys, 29 of those surveys were returned for a response rate of 29%.

Demographics

One hundred Zulkowski-Pieper Pressure Ulcer Tests (Zulkowski D. K., 2012) were distributed to staff at one frontier hospital and one long term care facility in one western frontier state. A total of 29 surveys were returned with 25 surveys from RNs and 4 from LPNs.

Research Questions

Question 1: What were the nurses' pressure ulcer knowledge scores on a standardized test?

There was no significant difference in knowledge scores between RN's and LPN's. The mean overall score was 71.07% for the LPNs (n=4) and 71.63% for the RNs (n=25), specified in Table 2. The test had three sections (prevention, staging and wound) each with a mean score. Mean score for RN prevention was 83.59 (SD  $\pm$ 7.86) (n=23), LPN prevention was 79.38 (SD  $\pm$ 11.61) (n=4). Staging scores for RN's 65.0 (SD  $\pm$ 16.83) (n=22); and 62.5 (SD  $\pm$ 8.7) (n=4) for LPN's. Wound scores for RN's was 66.61 (SD  $\pm$ 13.17) (n=22) and 71.33 (SD  $\pm$ 6.39) (n=4) for LPN's.

Group Statistics by LPN or RN					
	mtype	N	Mean	Std. Deviation	Std. Error Mean
total score	LPN	4	71.07	8.75	4.38
	RN	22	71.63	11.11	2.37
wound score	LPN	4	71.33	6.39	3.20
	RN	22	66.61	13.17	2.81
stage score	LPN	4	62.50	8.66	4.33
	RN	22	65.00	16.83	3.59
Prevent score	LPN	4	79.38	11.61	5.81
	RN	23	83.59	7.86	1.64

Table 2. Group Statistics by LPN or RN

The knowledge between RNs and LPNs was not significantly different in the Zulkowski-Pieper Pressure Ulcer Knowledge Test. The significance from the Levene's Test for Equality, Table 3, does not lend a value of less than .05., this means that the two types of nurses have equal variances that are assumed, or, that there is a greater likelihood that these results could happen by chance alone.

Question 2: What were the nurses' attitudes toward pressure ulcer prevention?

The Staff Attitude survey consisted of the following eleven questions. The participants in this study scored a mean of 3.18, indicating a trend toward a positive attitude. The most positive of the questions was question 5 on the Staff Attitude Scale depicted in Table 4, Continuous assessment of patient will give an accurate account of their pressure ulcer risk. The least positive question was question 4 on the Staff Attitude Scale depicted in Table 4, Pressure ulcer treatment is a greater priority than pressure ulcer prevention.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
total_score	Equal variances assumed	.22	.64	-.10	24	.93	-.56	5.90	-12.73	11.60
	Equal variances not assumed			-.11	5.00	.91	-.56	4.98	-13.40	12.27
wound_score	Equal variances assumed	1.60	.22	.69	24	.49	4.73	6.81	-9.32	18.77
	Equal variances not assumed			1.11	8.68	.30	4.73	4.26	-4.95	14.40
stage_score	Equal variances assumed	1.23	.28	-.29	24	.78	-2.50	8.72	-20.50	15.49
	Equal variances not assumed			-.45	8.00	.67	-2.50	5.62	-15.47	10.46
pevent_score	Equal variances assumed	1.60	.22	-.93	25	.36	-4.22	4.55	-13.59	5.162
	Equal variances not assumed			-.70	3.50	.53	-4.22	6.03	-21.97	13.54
										270

Table 3. Independent Samples Test Compared Groups No Sif Dif

Questions	N	Minimum	Maximum	Mean	Std. Deviation
1. All patients are at potential risk of developing pressure ulcers	27	1.00	4.00	1.63	.69
2. Pressure ulcer prevention is time consuming for me to carry out	27	1.00	5.00	3.56	1.01
3. In my opinion, patients tend not to get as many pressure ulcers nowadays	27	1.00	5.00	3.07	1.00
4. I do not need to concern myself with pressure ulcer prevention in my job	27	4.00	5.00	4.78	.42
5. Pressure ulcer treatment is a greater priority than pressure ulcer prevention	27	1.00	5.00	4.19	1.08
6. Continuous assessment of patients will give an accurate account of their pressure ulcer risk	27	1.00	5.00	1.67	.83
7. Most pressure ulcers can be avoided	27	1.00	3.00	1.89	.70
8. I am less interested in pressure ulcer prevention than other aspects of care	27	3.00	5.00	4.00	.83
9. My clinical judgment is better than any pressure ulcer risk assessment tool available to me	27	3.00	5.00	4.11	.70
10. In comparison with other areas of care, pressure ulcer prevention is a low priority for me	27	2.00	5.00	4.19	.79
11. Pressure ulcer risk assessment should be regularly carried out on all patients during their stay in hospital	27	1.00	5.00	1.85	1.02
Valid N (list wise)	27				

Table 4. Staff Attitude

Question 3: Was there a relationship between nurses' attitudes and knowledge related to the prevention of pressure ulcers?

Results showed the participants have a positive attitude in areas related to pressure ulcer assessment with a mean score of 4.19 attitude questions 5 in Table 4. The mean score in areas related to pressure ulcer prevention were 3.07, attitude questions 1-4,

6-11 in Table 4. Any questions relating to the nurses attitude regarding any specific or generalized staging were not asked in the attitude part of the survey. Attitudes related to pressure ulcer staging could not show a relationship with the knowledge of pressure ulcer staging in this survey. This data is compiled within Table 5 Knowledge and Attitude Compilation.

Areas	Knowledge Mean Score (from Table 3 Descriptive Statistics)	Attitude Mean Score (from Table 6 Staff Attitude Scale)
Prevention	82.96	3.074
Wound/General Knowledge	67.33	4.19
Stage	64.62	N/A

Table 5. Knowledge and Attitude Compilation

Conclusion

While the need for pressure ulcer prevention is increasingly recognized and there are protocols in place, the prevalence of pressure ulcers is still high. Hospital acquired pressure ulcers are estimated to cost approximately between \$2.3 billion to \$3.6 billion annually for Medicare and Medicaid. While nurses, whether RN or LPN, may have the knowledge to help prevent pressure ulcers, they often feel that pressure ulcer prevention is not high in their priorities of duties.

## CHAPTER FIVE

## DISCUSSION

The purpose of this study was to examine the relationship between nurses' knowledge and attitudes related to pressure ulcers and preventive pressure ulcer care. This study focused primarily on attitudes and knowledge of nurses working in a frontier hospital and a frontier nursing home.

The following research questions were explored: What are nurses' pressure ulcer knowledge scores on a standardized test? What are nurses' attitudes toward pressure ulcer prevention and care? Is there a relationship between nurses' attitudes and knowledge related to pressure ulcers and preventive care for pressure ulcers? There is a difference between previous studies at 78% (Samuriwo, 2010) and the Zulkowski-Pieper Pressure Ulcer Knowledge Test at 71.63% (Zulkowski D. K., 2012).

The areas that showed poor knowledge test scores related to preventions, dressings and staging. Knowledge testing showed that within these three areas, nurses scored lower in questions pertaining to turning and repositioning, weight redistribution surfaces, types of dressings that should be applied to various stages of pressure ulcers and appropriately staging or identifying pressure ulcers.

#### Implications for Education

While all nurses receive education regarding pressure ulcer prevention, that education varies by location and degree. Not all textbooks have consistent information.

Statistical evidence shows that only one-third of all baccalaureate nursing schools offer a stand-alone gerontology course. This is significant as the senior population is increasing. The 2010 census reported 13% of the total population was 65 or older. During 2010 only 10% - 25% of gerontological material was covered for registered nursing students. Studies conducted at a hospital in Egypt revealed unless a nurse has received pressure ulcer education within the past year their knowledge was below the minimal acceptable standards (El Enein & Zaghoul, 2011).

Knowledge and values begin with family. The student continues to develop over the course of their education. The nurse educators have a fundamental role in the inclusion of nursing values. The classes and lesson plans that are provided to the student nurse all contribute to the development of the student. Nurses have reported that higher development skills such as, critical thinking, leadership skills and professionalism within the baccalaureate program are essential aspects to overall patient care. Earning a diploma is just the beginning. Registered nurses relate, while the associate degree with the skills acquired are necessary for patient care, once they furthered their education their perspectives changed. Nursing values impact the prevention of pressure ulcers. The result of the Zulkowski-Pieper Pressure Ulcer Knowledge Test supports that the more education a staff has the attitudes and awareness of proper pressure ulcer treatments are recognized.

The result of the Zulkowski-Pieper Pressure Ulcer Knowledge test supports that continuing education is needed for all types of nurses to maintain a current knowledge of pressure ulcer prevention and care. Changing negative or uninformed attitudes of staff

toward pressure ulcers could lead to more effective prevention and treatment of pressure ulcers because knowledge leads to insight. Barriers, whether perceived or actual, should be investigated so an educational outline or plan can be formulated for continuing education. Lack of knowledge could lead to using outdated or myth based methods of treatment for pressure ulcers causing more harm than good. According to this study education could make a difference.

### Implications for Practice

Barriers, whether perceived or actual, should be investigated so an educational outline or plan can be formed for continuing education. Lack of knowledge could lead to using outdated or myth based methods to the detriment of the patient. Thus, frontier facilities need to maintain continuing education for nurses as educated nurses provide consistent quality care. Not only providing the patient with a better outcome but, ultimately, providing the facility with better staffing and lower cost. Development of pressure ulcers can result in extended hospital stays. Jenny Large, Clinical Specialist in Tissue Viability, states that the cost to England healthcare system from pressure ulcers was between 1.4 and 2.1 billion pounds (Large, 2011). In the United States the Centers for Medicare/Medicaid reported the cost of treating a pressure ulcer in acute care during 2008 as \$43,180.00 per hospital stay (Dorner, Posthauer, & Thomas, 2009). In addition, “hospital-acquired conditions and present on admission indicator reporting” program revised reimbursement rules to take effect October 1, 2008 (Legislators, 2008).

If pressure ulcer prevention and/or care is to be addressed, preventive and curative treatments must be used. By addressing any perceived barriers such as lack of time or staff the development of guidelines can move forward. Preventive protocols can be a lengthy process. However, it is the foundation for any curative protocol. Implementation of pressure ulcer guidelines will provide the time for staff to assess the patient needs. Preventive concepts, if practiced, must reduce incidence rates. Preventive treatments can be developed and utilized by nurses and staff that lead to positive attitudes and outcomes for patients. By improving education and attitude, significant improvement can be achieved. Ray Samuriwo suggests that further research will raise awareness and allow for adopting preventive measures (Samuriwo, 2010). Conceptually positive attitudes will embrace new findings (Braden & Bergstrom, 2000).

Education or a positive attitude alone cannot begin to tackle the problem of pressure ulcers. Nurses are the first line of defense and their attitude toward knowledge can determine if that knowledge is translated into clinical practice. The ultimate goal would be to determine a system that is capable of handling the current problems of pressure ulcer education and attitude and be able to maintain that system in the future. Any solution cannot be reached unless education and training is implemented. Education, positive attitudes and a strict regimen of pressure ulcer prevention can be the basis for an effective system for quality patient care.

Education can change attitudes which may lead to changes in clinical outcomes. Healthcare facilities must implement continuing education which will impact the prevention protocols that will lead to faster recovery for the patient and income from

insurance reimbursement for the facility. Data on the cost of treatment for pressure ulcers has shown treatment costs are two and a half times higher than the cost of preventive treatment (Rosen, 2008). Results of this study show nurses in the rural facilities may need additional education to improve their practice.

### Implications for Research

There is at least one study on attitudes and multiple studies on knowledge relating to pressure ulcers. Studies show facilities with preventive protocols and risk assessments in place have a decline in incidences of pressure ulcers (Safety, 2007). The quality of care is improved and the cost of care is lowered when preventive care is provided. Protocols can help a nurse determine where to focus when time is limited and care is needed. Most nurses have a positive attitude toward pressure ulcer prevention. However, prevention practices are not standardized and lack of time and staff affect the proper prevention and maintenance in some instances. Positive attitudes are not enough to ensure patient care. The implications of this study show knowledge can change attitudes and behaviors. Despite positive attitudes knowledge seems to be inadequate.

Implementation of pressure ulcer guidelines and protocols and how this important task need to work into the schedule of every nurse's timeline and needs to be re-evaluated on a regular basis. By re-evaluating the opportunity to assess what is working and what is not can be identified and implemented or corrected as needed (Ousey, 2010).

Future studies regarding pressure ulcer knowledge and attitude between the two types of nurses, RNs and LPNs, should consider a larger sample size and multiple

facilities that all reside within the frontier setting. Sampling multiple frontier facilities will allow data to be analyzed so appropriate education protocols and procedures can be developed for the unique frontier setting. A nurse working in a frontier or rural setting may have less opportunity for continuing education due to travel and staffing issues. A lack of continuing education may be a reason a nurse is not aware of current pressure ulcer treatment.

### Conclusion

A conclusion can be reached that education needs to be ongoing since it is the shared variance between knowledge, attitude and skills as shown previously in Figure 1. This study highlighted the need to close the gap between knowledge and what is actually put into practice at a health care facility.

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APPENDICES

APPENDIX A:

CITI COLLABORATIVE INSTITUTIONAL  
TRAINING INITIATIVE (CITI)

## CITI Collaborative Institutional Training Initiative (CITI)

## Responsible Conduct of Research Curriculum Completion Report

Printed on 4/22/2012

Learner: Amy Crowder-Klobofksi (username: amycrowder)

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Department: Nursing

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Humanities Responsible Conduct of Research Course 1: This course is for investigators, staff and students with an interest or focus in the humanities research. This course contains text, embedded case studies AND quizzes.

Stage 1. Basic Course Passed on 04/22/12 (Ref # 7723704)

Required Modules Date Completed

The CITI Course in the Responsible Conduct of Research 04/21/12 no quiz

Introduction to the Responsible Conduct of Research 04/21/12 no quiz

Research Misconduct 4-1497 04/21/12 5/5 (100%)

Data Acquisition, Management, Sharing and Ownership 4-1525 04/21/12 4/5 (80%)

Publication Practices and Responsible Authorship 4-1533 04/21/12 5/5 (100%)

Peer Review 4-1534 04/22/12 4/5 (80%)

Mentor and Trainee Responsibilities 01234 1250 04/22/12 6/6 (100%)

Conflicts of Interest and Commitment 4-1624 04/22/12 4/5 (80%)

Collaborative Research 4-1058 04/22/12 5/5 (100%)

The CITI RCR Course Completion Page 04/22/12 no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.

Professor, University of Miami

Director Office of Research Education

CITI Course Coordinator

APPENDIX B:

INSTITUTIONAL REVIEW BOARD LETTER



**INSTITUTIONAL REVIEW BOARD**  
**For the Protection of Human Subjects**  
**FWA 0000165**

960 Technology Blvd. Room 127  
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 Montana State University  
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 Telephone: 406-994-6783  
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 Cheryl Johnson  
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**MEMORANDUM**

**TO:** Amy Crowder-Klobofski and Karen Zulkowski  
**FROM:** Mark Quinn, Chair *Mark Quinn CJ*  
**DATE:** September 6, 2012  
**RE:** "A Descriptive Correlational Study Examining the Relationship between Nurses' Pressure Ulcer Attitudes and Knowledge" [AC-K090612-EX]

The above research, described in your submission of September 4, 2012, is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal regulations, Part 46, section 101. The specific paragraph which applies to your research is:

- (b) (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.
- (b) (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.
- (b) (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
- (b) (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available, or if the information is recorded by the investigator in such a manner that the subjects cannot be identified, directly or through identifiers linked to the subjects.
- (b) (5) Research and demonstration projects, which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.
- (b) (6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed, or (ii) if a food is consumed that contains a food ingredient at or below the level found for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA, or approved by the EPA, or the Food Safety and Inspection Service of the USDA.

Although review by the Institutional Review Board is not required for the above research, the Committee will be glad to review it. If you wish a review and committee approval, please submit 3 copies of the usual application form and it will be processed by expedited review.

APPENDIX C:

ZULKOWSKI-PIEPER PRESSURE ULCER

KNOWLEDGE TEST

Survey of Nurses' Knowledge and Attitudes Towards Pressure Ulcers

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**Amy Crowder-Klobofksi**

**2012**

The purpose of this descriptive correlation study is to focus on and address the relationship between knowledge and attitudes in the rural setting in relation to pressure ulcers. Both qualitative research and descriptive research will be utilized. The qualitative research is aimed to gather in-depth understanding of attitudes regarding pressure ulcers.

The survey should take approximately 15 to 20 minutes. Your completed survey will remain anonymous; please do not leave any identifiers on your completed survey. Your participation is completely voluntary. You may skip questions or quit at any time. Your completed survey will be considered your consent.

Thank you for your time!

Amy Crowder-Klobofski RN, BSN

This survey is research-based for partial completion of Professional Project for Masters of Nursing, MSU Bozeman

RN \_\_\_\_\_ LPN \_\_\_\_\_

Question	Circle true or false or don't know for each		
1. Risk factors for development of pressure ulcers are immobility, incontinence, impaired nutrition, and altered level of consciousness.	True	False	Don't Know
2. Bone, tendon, or muscle may be exposed in a Stage III pressure ulcer	True	False	Don't Know
3. All individuals at risk for pressure ulcers should have a systematic skin inspection based on facility protocols.	True	False	Don't Know
4. Hot water and soap may dry the skin and increase the risk for pressure ulcers.	True	False	Don't Know
5. Massage of bony prominences is essential for quality skin care.	True	False	Don't Know
6. An adequate dietary intake of protein and calories should be maintained during illness.	True	False	Don't Know
7. Persons confined to bed should be repositioned dependent on individual and support surface factors.	True	False	Don't Know
8. Stage II pressure ulcers are a full thickness skin loss.	True	False	Don't Know
9. Suspected deep tissue injury is a localized area of purple or maroon discolored intact skin or a blood-filled blister	True	False	Don't Know
10. A Stage IV pressure ulcer never has undermining	True	False	Don't Know
11. A turning schedule should be specified and outcome evaluated.	True	False	Don't Know
12. Heels protection devices should elevated/float the heels off the surface.	True	False	Don't Know
13. A good way to decrease pressure on the heels is to elevate them off the bed.	True	False	Don't Know
14. Even if necrotic tissue is present if the bone can be seen or palpated the ulcer is a stage IV	True	False	Don't Know
15. Intravenous (IV) bags may be used to elevate heels off the bed.	True	False	Don't Know
16. Donut devices/ring cushions help to prevent pressure ulcers.	True	False	Don't Know
17. In a side lying position, a person should be at a 30-degree angle with the bed.	True	False	Don't Know
18. The head of the bed should be elevated more than 45-degrees .	True	False	Don't Know
19. Stage II pressure ulcer may have slough.	True	False	Don't Know
20. Poor posture in a W/C may be the cause of a pressure ulcer.	True	False	Don't Know
21. Persons who can be taught should shift their weight every 30 minutes while sitting in a chair.	True	False	Don't Know
22. A full thickness tissue loss cannot be staged when the base is totally blocked by slough	True	False	Don't Know
23. Chair bound persons should be fitted for a chair	True	False	Don't Know

cushion.			
24. Eschar is good for wound healing.			
25. The epidermis should remain clean and dry.	True	False	Don't Know
26. A incontinent patient should have a toileting care plan.	True	False	Don't Know
27. The goal of palliative care is wound healing.	True	False	Don't Know
28. Suspected deep tissue injury (DTI) may be difficult to detect in individuals with dark skin tones.	True	False	Don't Know
29. All individuals at risk for pressure ulcers should have a systematic skin inspection at admission only.	True	False	Don't Know
30. A pressure redistribution surface should be used for all high risk patients.	True	False	Don't Know
31. A pressure redistribution surface manages tissue load and the climate against the skin.	True	False	Don't Know
32. A blister on the heel is nothing to worry about.	True	False	Don't Know
33. Skin moisture from urine and fecal incontinence are associated with pressure ulcer development.	True	False	Don't Know
34. Skin tears are classified as stage II pressure ulcers.	True	False	Don't Know
35. For persons who have incontinence, skin cleaning should occur at the time of soiling and routine intervals.	True	False	Don't Know
36. All care given to prevent or treat pressure ulcers must be documented.	True	False	Don't Know
37. Blanching refers to whiteness when pressure is applied to a reddened area.	True	False	Don't Know
38. Shear is the force which occurs when the skin sticks to a surface and the body slides.	True	False	Don't Know
39. Friction may occur when moving a person up in bed.	True	False	Don't Know
40. As long as the total Braden score indicates low risk there is no need for additional care planning.	True	False	Don't Know
41. Suspected deep tissue injury (DTI) does not evolve to another ulcer stage.	True	False	Don't Know
42. Staff education alone may reduce the incidence of pressure ulcers.	True	False	Don't Know
43. Catheter tubing should be positioned under the leg.	True	False	Don't Know
44. Pressure ulcers can occur around the ears in a person using oxygen.	True	False	Don't Know
45. Stage IV pressure ulcers are a full thickness tissue loss with extensive destruction, tissue necrosis or damage to muscle, bone, or supporting structure.	True	False	Don't Know
46. A Stage III pressure ulcer is a partial thickness skin loss involving the epidermis and/or dermis.	True	False	Don't Know
47. Hydrocolloid and film dressings must be carefully removed from fragile skin.	True	False	Don't Know
48. Foam dressings are known for their ability to absorb drainage.	True	False	Don't Know
49. Long transportation times to the ER may contribute to pressure ulcer development.			
50. Pressure ulcer development does not cause pain.	True	False	Don't Know
51. A footstool/footrest should not be used for an immobile patient whose feet do not reach the floor.	True	False	Don't Know
52. Operating room nurses and physicians do not need to	True	False	Don't Know

be concerned about pressure ulcer prevention.			
53. A hydrocolloid dressing can be used on Stage II and III pressure ulcers	True	False	Don't Know
54. Skin that doesn't blanch when pressed is a stage I pressure ulcer	True	False	Don't Know
55. Early changes associated with pressure ulcer development may be missed in persons with darker skin tones.	True	False	Don't Know
56. Stage I pressure ulcers are intact skin with non-blanchable erythema over a bony prominence	True	False	Don't Know
57. Patients should be lifted, not dragged, up in bed.	True	False	Don't Know
58. Foam dressing may be used on areas at risk for shear injury.	True	False	Don't Know
59. Bariatric patients may develop pressure ulcers from being placed in a chair that is too small for them.	True	False	Don't Know
60. Hydrocolloid dressings should not be used with a filler dressing.	True	False	Don't Know
61. Suspected deep tissue injury (sDTI) may show as intact purple/maroon discolored skin	True	False	Don't Know
62. Pressure ulcers may be avoided in bariatric patients with properly sized equipment.	True	False	Don't Know
63. A Stage III pressure ulcer may appear shallow if located on the ear or malleolus/ankle	True	False	Don't Know
64. In large and deep pressure ulcers, the number of dressings used needs to be counted and documented to ensure all dressings are removed at the next dressing change.	True	False	Don't Know
65. All patients can be turned onto a reddened body area if the pressure was removed from that area for 1 hour.	True	False	Don't Know
66. Pressure ulcers are a lifelong concern for a spinal cord injured patient.	True	False	Don't Know
67. An unstageable pressure ulcer will be classified as a Stage II when necrotic tissue is removed. (F)	True	False	Don't Know
68. Dry, adherent eschar on the heels should not be removed.	True	False	Don't Know
69. Slough is yellow or creamy necrotic /devitalized tissue on a wound bed.	True	False	Don't Know
70. Undermining is an area of tissue destruction extending under intact skin.	True	False	Don't Know
71. Eschar is healthy tissue.	True	False	Don't Know
72. Bony prominences should not have direct contact with one another	True	False	Don't Know
73. Pressure ulcers are sterile wounds	True	False	Don't Know
74. A pressure ulcer scar will break down faster than unwounded skin.	True	False	Don't Know
75. The skin is the largest organ of the body.	True	False	Don't Know
76. Bacteria can develop permanent immunity to both silver and honey dressings.	True	False	Don't Know
77. Skin failure may occur just prior to death.	True	False	Don't Know
78. Pressure ulcers progress in a linear fashion from Stage I to IV.	True	False	Don't Know
79. Moisture associated skin damage should be considered	True	False	Don't Know

to be a pressure ulcer.			
80. It may be difficult to distinguish between moisture associated skin damage and a pressure ulcer.	True	False	Don't Know
81. Wounds that become chronic are frequently stalled in the inflammatory phase of healing.	True	False	Don't Know
82. Biofilms may develop in any type of wound.	True	False	Don't Know
83. Persons who sit in a chair are not at risk for pressure ulcers since they are out of bed.	True	False	Don't Know
84. Persons at risk for pressure ulcers should be nutritionally assessed (i.e., weight, nutrition intake, blood work).	True	False	Don't Know
85. Both dry skin and excessive skin moisture are risk factors for pressure ulcers.	True	False	Don't Know
86. As long as a standard care plan is used, individual risk factors for pressure ulcers are not important.	True	False	Don't Know
87. Nurses should avoid turning a patient onto a reddened area	True		Don't Know
88. When possible, high-protein oral nutritional supplements should be used in addition to usual diet for high risk patients	True	False	Don't Know
89. Frequency of repositioning should be affected individual factors and the support surface.	True	False	Don't Know
90. Dragging the patient up in bed increases friction.	True	False	Don't Know
91. If standardized regimens for repositioning are used, it is not necessary to record repositioning on the medical record.	True	False	Don't Know
92. Selection of a support surface should only consider the person's level of pressure ulcer risk.	True	False	Don't Know
93. The home care setting has unique considerations for support surface selection.	True	False	Don't Know
94. Patients with pressure ulcers do not need pain assessment since the tissue is dead.	True	False	Don't Know
95. Critical care patients may need slow, gradual turning because of being hemo-dynamically unstable.	True	False	Don't Know
96. Small shifts in positioning may need to be used for patients who cannot tolerate major shifts in body positioning	True	False	Don't Know
97. Shear injury is not a concern with lateral-rotation bed features.	True	False	Don't Know
98. It is not necessary to have the patient with a spinal cord injury evaluated for seating.	True	False	Don't Know
99. Patients with spinal cord injuries should be taught weight shifts.	True	False	Don't Know
100. For the bariatric patient, a bed should be selected that supports the person's weight and width.	True	False	Don't Know
101. For the bariatric patient, only one nurse should evaluate the skin to avoid embarrassment.	True	False	Don't Know
102. Pressure ulcers can be cleansed with water that is suitable for drinking.	True	False	Don't Know
103. The force applied to an irrigation solution is of little concern.	True	False	Don't Know
104. The assessment of the pressure ulcer will determine	True	False	Don't Know

the appropriate dressing regimen.			
105.A dressing should keep the wound bed moist, but the surrounding skin dry.	True	False	Don't Know
106.Hydrogel dressings will add moisture to dry ulcer beds.	True	False	Don't Know
107.Hydrocolloid dressings should be assessed for potential of rolling in an area and causing more pressure.	True	False	Don't Know
108.Film and hydrocolloid dressings can be used on sites at risk for friction injury.	True	False	Don't Know
109.Film dressings absorb a lot of drainage.	True	False	Don't Know
110.Film dressings may be used to as a secondary dressing to cover wound fillers.	True	False	Don't Know
111.Hydrogel dressings are used on heavily exudating wounds.	True	False	Don't Know
112.Hydrogel dressings should not be used on granulating pressure ulcers.	True	False	Don't Know
113.Foam dressings increase wound pain.	True	False	Don't Know
114.Non-sting skin prep should be used around a wound to protect surrounding tissue from moisture.	True	False	Don't Know
115.Honey dressings can sting when initially placed in a wound.	True	False	Don't Know

APPENDIX D:

STAFF ATTITUDE SCALE

<b>Views on Pressure Ulcer Prevention</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
1. All patients are at potential risk of developing pressure ulcers					
2. Pressure ulcer prevention is time consuming for me to carry out					
3. In my opinion, patients tend not to get as many pressure ulcers nowadays					
4. I do not need to concern myself with pressure ulcer prevention in my job					
5. Pressure ulcer treatment is a greater priority than pressure ulcer prevention					
6. Continuous assessment of patients will give an accurate account of their pressure ulcer risk					
7. Most pressure ulcers can be avoided					
8. I am less interested in pressure ulcer prevention than other aspects of care					
9. My clinical judgment is better than any pressure ulcer risk assessment tool available to me					
10. In comparison with other areas of care, pressure ulcer prevention is a low priority for me					
11. Pressure ulcer risk assessment should be regularly carried out on all patients during their stay in hospital					

APPENDIX E:

DON APPROVAL LETTERS

September 20, 2012

Janice Roth RN, Director of Nursing  
Northern Montana Care Center  
30 13<sup>th</sup> Street  
P.O Box 1231  
Havre, MT 59501

RE: Permission to Conduct Research Study

Dear Janice Roth,

I am writing to request permission to conduct a research study at Northern Montana Care Center. I am currently enrolled in the Master's Degree of Nursing at Montana State University – Bozeman, and am in the process of writing my Master's Professional Project. The study will be conducted by Amy Crowder- Klobofski, RN, BSN, MN(c) and has been approved by the Montana State University Institutional Review Board and, as part of that approval process; I am required to obtain permission from the facility where I would like to recruit participants. The study is entitled "*Survey of Nurses' Knowledge and Attitudes Towards Pressure Ulcers*". The aim of this study is to investigate the relationship of education and attitudes toward pressure ulcers with the overall goal to determine whether education and attitudes affect the prevention and treatment of pressure ulcers.

I hope that the hope administration will allow me to recruit Registered Nurses and Licensed Practical Nurses from Northern Montana Care Center to anonymously complete a 3-page questionnaire (copy enclosed). The time frame of this study would be from September 24<sup>th</sup> to October 1<sup>st</sup>. Due to the nature of the study, I hope to recruit employees with varying degrees of tenure in their respective positions. Interested employees, who volunteer to participate, will be given the questionnaire to complete on their own time and returned to the primary researcher via an area you deem suitable.

If approval is granted, participants will complete the survey on personal time at the hospital or at home and return to the appropriate drop location. The survey process should take no longer than 10 to 15 minutes. The survey results will be pooled for the dissertation project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either your facility or the individual participants.

Your approval to conduct this study will be greatly appreciated. I would be happy to meet with you to answer any questions or concerns that you may have at that time. You may contact me by phone at 406-399-1239 or at my email address: [amy.crowder@msu.montana.edu](mailto:amy.crowder@msu.montana.edu)

If you agree, kindly sign on the reverse of this page and return the signed form in the enclosed self-addressed envelope. Alternatively, kindly submit a signed letter of permission on your

institution's letterhead acknowledging your consent and permission for me to conduct this study at your hospital.

Sincerely,

Amy Crowder Klobofski, RN, BSN, MN(c)

I: Janice Roth ] as Director Of Nursing at Northern Montana Care Center having been fully informed as to the nature of the research regarding Pressure Ulcer Knowledge vs. Attitudes to be conducted by Amy Crowder-Klobofski, RN, BSN, MN(c) give my permission for the study to be conducted. I reserve the right to withdraw this permission at any time.

Signature: Janice Roth RN/BSN Date: 9/21/12

September 13, 2012

Karen Pollington, Director of Nursing  
Northern Montana Hospital  
30 13<sup>th</sup> Street  
P.O Box 1231  
Havre, MT 59501

RE: Permission to Conduct Research Study

Dear Karen Pollington,

I am writing to request permission to conduct a research study at Northern Montana Hospital. I am currently enrolled in the Master's Degree of Nursing at Montana State University – Bozeman, and am in the process of writing my Master's Professional Project. The study will be conducted by Amy Crowder- Klobofski

, RN, BSN, MN(c) and has been approved by the Montana State University Institutional Review Board and, as part of that approval process; I am required to obtain permission from the facility where I would like to recruit participants. The study is entitled "*Survey of Nurses' Knowledge and Attitudes Towards Pressure Ulcers*". The aim of this study is to investigate the relationship of education and attitudes toward pressure ulcers with the overall goal to determine whether education and attitudes affect the prevention and treatment of pressure ulcers.

I hope that the hospital administration will allow me to recruit Registered Nurses and Licensed Practical Nurses from the hospital to anonymously complete a 3-page questionnaire (copy enclosed). The time frame of this study would be from September 17<sup>th</sup> to September 25<sup>th</sup>. Due to the nature of the study, I hope to recruit employees with varying degrees of tenure in their respective positions. Interested employees, who volunteer to participate, will be given the questionnaire to complete on their own time and returned to the primary researcher via an area you deem suitable.

If approval is granted, participants will complete the survey on personal time at the hospital or at home and return to the appropriate drop location. The survey process should take no longer than 10 to 15 minutes. The survey results will be pooled for the dissertation project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either your facility or the individual participants.

Your approval to conduct this study will be greatly appreciated. I would be happy to meet with you to answer any questions or concerns that you may have at that time. You may contact me by phone at 406-399-1239 or at my email address: [amy.crowder@msu.montana.edu](mailto:amy.crowder@msu.montana.edu)

If you agree, kindly sign on the reverse of this page and return the signed form in the enclosed self-addressed envelope. Alternatively, kindly submit a signed letter of permission on your institution's letterhead acknowledging your consent and permission for me to conduct this study at your hospital.

Sincerely,

Amy Crowder Klobofski, RN, BSN, MN(c)

I, Karen Pallington ] as Director Of Nursing at Northern Montana Hospital having been fully informed as to the nature of the research regarding Pressure Ulcer Knowledge vs. Attitudes to be conducted by Amy Crowder-Klobofski, RN, BSN, MN(c) give my permission for the study to be conducted. I reserve the right to withdraw this permission at any time.

Signature: Karen Pallington Date: 9/14/12