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Nursing Home Caregivers' Knowledge of Decubitus Ulcer Prevention Strategies

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Abstract

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MS, Walden University, 2016

Project Submitted in Partial Fulfillment

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Abstract

Decubitus ulcers (DUs) were a constant concern among the residents of the nursing home in this project. Prolonged immobility, sensory impairment, and urinary incontinence are some of the factors found in the literature as the causes of the disease. However, the lack of useful knowledge regarding evidence-based practices (EBPs) to prevent and treat DUs also contributed to the higher incidence rates at the nursing home. The purpose of this DNP- project was to evaluate the caregivers' knowledge of EBPs to prevent and treat DUs at the facility. The IOWA Model of Evidence-Based Practice, which healthcare practitioners use to guide clinical decision-making and to promote excellence in the healthcare setting, was the basis of this project. All caregivers working at the nursing home were invited to participate in a presentation on best practices to prevent and treat DUs. Forty of the attendees completed pretest and posttest questionnaires to evaluate their knowledge of using evidence-based strategies to prevent and manage DUs. The posttest scores revealed improvement in the caregivers' knowledge, with increases from 30% to 85% for nursing assistants, 35% to 95% for LPNs, and 45% to 100% for RNs. The recommendations made to the nursing home are that caregivers be given adequate and continuous education on evidence-based strategies to prevent and treat bedsores. The caregivers also need proper in-service training on and clarification on their roles in predicting, identifying, and preventing DUs in at-risk patients. The potential implications for positive social change of providing such training include improvements in the quality of patient care and reduced costs associated with managing DUs.

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Section 1: Nature of the Project

Introduction

Decubitus ulcers (DUs), also known as pressure sores or bedsores, refers to tissue damage caused by compressing the skin and underlying tissue with a bony prominence and an external surface for an extended period (Gillespie et al., 2014; see also National Pressure Ulcer Advisory Panel [NPUAP], 2015). It is a problem found among patients in long-term care facilities, acute care settings, hospitals, and home care settings (Courvoisier, Righi, Béné, Rae, & Chopard, 2018). Although patient care has improved in many ways, and new products are available for prevention and treatment, about 2.2% to 23.9% of patients in U.S. nursing homes and skilled nursing facilities still experience DU formation (Centers for Medicare & Medicaid Services [CMS], 2015). The Centers for Disease Control and Prevention's (CDC), latest report on the epidemiology of DUs shows that one in every 10 patients in U.S. nursing homes suffers from ulcers (CDC, 2016). Other statistics from the CDC shows that hospitalized patients and residents of a long-term care facility who are 64 years and older have an approximate 14% chance of developing DUs (Bauer et al., 2016). Those who stay in the nursing home for less than a year have about a 16% likelihood of developing DUs (Bauer et al., 2016).

Many factors contribute to the prevalence of DUs in patients in long-term settings. They include prolonged bed rest, wheelchair use, obesity, limited mobilization, incontinence, mental status, and nutritional status (Ellis, 2017). DUs occur most often in people with limited mobility because they cannot change their position to relieve pressure. Another contributing factor is sensory impairment; patients who are unable to

feel or communicate the pain that occurs with unrelieved pressure are more likely to develop DUs (Ignatavicius & Workman, 2016). Other contributing factors include friction and sheer, urinary incontinence, peripheral vascular disease, diabetes, and malnutrition (Ellis, 2017). Patients with substantial malnutrition, weight loss, and incontinence are at high risk (Spector & Bergofsky, 2016)

The estimated number of people who exhibit DUs in the United States is approximately 2.5 million annually (Bauer, Rock, Nazzal, Jones, & Qu, 2016). The cost of caring for these individuals ranges from $20,900 to $151,700 yearly, with the total cost amounting to about $9.1-$11.6 billion per year (Agency for Healthcare Research and Quality [AHRQ], 2014). Moreover, DUs incur costs in the form of penalties, litigation, and patient fees. The Deficit Reduction Act of 2005 mandates that all patients admitted to a U.S. nursing home facility have a preadmission screening and assessment for existing conditions including DUs. Hospitals will not receive additional payment for DU cases and other hospital-acquired conditions that were not present on admission (CMS, 2018). The injuries also increase patient morbidity and mortality and lead to a burden for them and their family members. If DUs are not prevented or managed well, they can lead to severe complications, such as infection, sepsis, cellulitis, cancer, and osteomyelitis (Buttaro, Trybulski, Polgar-Bailey, & Sandberg-Cook, 2017).DU care management is complex, and efforts to prevent the development of the disease require caregivers to use evidence-based strategies in the prevention and management of the disease (Ellis, 2017). Essential health care team members for the prevention and management of DUs are the certified wound care specialist, nurses, nutritionists, and other caregivers (Courvoisier et

al., 2018). A DU prevention program consists of two steps. The first step is the identification of high-risk patients, and the second step is the implementation of best practice interventions for prevention with the use of pressure relief or reduction devices (Ignatavicius & Workman, 2016). The use of a skin risk assessment tool increases the chances of identifying those patients at higher risk for skin breakdown. The Braden scale is an excellent example of skin risk assessment tools that are commonly used for screening DUs (Ignatavicius & Workman, 2016)

In this project, I evaluated and educate caregivers' knowledge of evidence-based prevention strategies to decrease and prevent DUs decubitus ulcers in nursing homes. The educational intervention focused on the healthcare workers' knowledge of evidence-based prevention strategies for DUs. Many of the patients at risk for DUs have mobility and self-care challenges that prevent them from repositioning (Ellis, 2017). Thus, it is imperative to enhance the caregivers' knowledge of the best strategies for preventing DUs in nursing homes, which will aid them in delivering quality patient-centered care (Ignatavicius & Workman, 2016). Minimizing the occurrence and prevalence of DUs may contribute to the positive social change by reducing morbidity and financial costs for patients and the healthcare system (Courvoisier et al., 2018). Lowering the number of DUs in the United States is also consistent with the Healthy People 2020 goals for building a healthier nation, which are to attain high-quality care and promote longer lives free of preventable disease, injuries, disability, and premature death (Stanhope & Lancaster, 2016).

Problem Statement

I conducted the project in a nursing home facility where there is a high incidence of DUs among the residents. According to data obtained from the medical record department, approximately 25% of the residents suffer from DUs, and 40% of mobility impairment patients are at high risk of developing DUs. The majority of the patients with DUs are unable to care for themselves or communicate their needs. They depend on the caregivers for accomplishing their activities of daily living. The care providers include the RNs, LPNs, Certified Medication Aides (CMAs), and Certified Nursing Assistants (CNAs). Some of the caregivers, especially the CNAs who are primarily responsible for assisting the patients with instrumental activities of daily living and activities of daily living, have little or no evidence-based skills for preventing and managing DUs (Primaris Healthcare Business Solutions, 2018). Many caregivers inadvertently contribute to the problem of DUs through improper diaper removal and transferring or repositioning, causing shearing and friction. Some of the presence of DUs cannot be blamed on the disease but the poor delivery of nursing care. Many nurses know about preventing DUs but need more training on evidence-based prevention strategies (Lavallée, Gray, Dumville, & Cullum, 2018).

This project work addressed the problem of ineffective prevention and treatment of DUs. It also provides insight on how to prevent and treat the high rate of new, reoccurring, and existing non healing DUs among nursing home residents. Patients at the nursing home facility suffered severely from DUs. The project site was a 100-bed facility with four halls, and about 25% of the residents were suffering from DUs at the time of

the project. Most of the aggravating factors of this condition are poor care, which is, lack of position change, and delay in perineal care which may compromise skin, poor judgment on the part of the caregivers, and skin tears due to shear (Lavallée et al., 2018). Some patients with healed ulcers experience reoccurrence within days due to lack of follow up care, while others have ulcers that last for years. All DUs can be treated if there are adequate tools to increase the knowledge of the caregivers on providing prompt and evidence-based prevention strategies that will mitigate the risk factors (Ling & Mandl, 2013). Thus, it is necessary to provide education on evidence-based information for the caregivers on how to prevent DUs and reduce their prevalence in the nursing home facility.

Purpose Statement

The project work addressed the gap in practice, which is the lack of useful knowledge regarding evidence-based practices (EBPs) to prevent and treat DUs in nursing homes. There is a lack of knowledge among caregivers at the project facility on how to use EBPs to prevent and treat DUs. As the DNP student conducting this project, I was able to evaluate caregivers' knowledge regarding EBPs to prevent and treat DUs and be the change agent to fill the gap. Knowing the significance of DUs and the importance of using evidence-based strategies to prevent and treat the disease is an asset to this project. Thus, the project work provides education for the caregivers providing care for the patients in the nursing home on evidence-based strategies to increase their knowledge on preventing and managing DUs. Preventing the prevalence and occurrence of DUs and effectively managing these injuries requires continuous education on up-to-date strategies

(Buttaro et al., 2017). The guiding question was, Does an educational intervention increase the knowledge of caregivers on DU prevention and treatment in the nursing home? The purpose of the DNP project work was to develop, deliver, and evaluate education regarding the prevention and treatment of DUs. The DU population comprises a complex spectrum of individuals, including those admitted to hospitals and those residing in long-term care facilities, group homes, and personal homes. However, the focal point of this project was on the caregivers of the residents of nursing homes. Nevertheless, the findings can be useful for patients in other healthcare facilities (see Ignatavicius & Workman, 2016).

The educational intervention was essential to address the gap in practice because the patients at risk for DUs depend on caregivers for high-quality care. I provided educational materials for the staff members on the ways to prevent the development and advancement of DUs. Every patient deserves to be free from developing bedsores or ulcers, and caregivers should be able to deliver safe and high-quality health care services. Therefore, I conducted this project to address the gap in practice by increasing the knowledge of caregivers on evidence-based DU prevention and treatment. If best practices are not utilized to prevent DUs, the incidence will continue to rise (Bauer et al., 2016). Thus, it was critical to provide education for caregivers to increase their knowledge of how to prevent and decrease the incidence of bedsores in the nursing home effectively.

Nature of the Doctoral Project

I carried out the DNP project work in a nursing home facility where there were a high number of cases of pressure sores. The facility records department, through its electronic data system, provides data on DU prevalence rates. The data obtained from the medical record department shows that about 25% of the residents suffer from DUs, and 40% have mobility impairment with a high risk of developing pressure ulcers. The sources of evidence for the project included peer-reviewed scholarly journals, evidence-based guidelines, and well-established organizational protocols. I used Walden University Library databases to search for literature; databases included CINAHL Plus, Medline, Cochrane Database of Systematic Review, PubMed, and ProQuest Health & Medical Collection. I used search terms such as "*decubitus ulcer*," "*pressure ulcers*," "*bedsores in nursing homes*," and "*pressure injuries*" to gather evidence-based data and information related to the stated problem.

The approach used to organize the evidence included grouping the data by the indicator of success and effectiveness, which was increasing caregivers' knowledge of EBPs to prevent and manage DUs in nursing homes. I gathered data on caregivers' knowledge on prevention and treatment of DU using pretest/posttest questionnaires I adapted from Primaris Health Care Business Solutions Company (Primaris, 2018). In conducting the project, I sought to provide education to increase caregivers' knowledge of the best practices for quality care for enhancing wound healing and preventing DUs. The educational intervention is essential for improving the skills of caregivers for the management of the bedsores. DUs are a significant problem for affected patients, their

families, and nursing homes. Therefore, it is crucial to educate caregivers on essential evidence-based strategies that increase their knowledge of the prevention and management of DUs and promote DU-free facilities.

Significance

Several organizations are interested in the prevention and eradication of DUs. It is one of the primary goals of Healthy People 2020 to promote longer lives free of preventable diseases and injuries, such as pressure ulcers (Stanhope & Lancaster, 2016). The stakeholders at the project site include the Director of Nursing and his management team, the certified wound care nurse, nurse educator, RNs, and nursing assistants. The project may positively affect the stakeholders by increasing the knowledge of caregivers of evidence-based strategies on prevention or management of DUs, which in turn may reduce or eradicate the incidence of DUs at the nursing facility. If the facility loses its Medicare and Medicaid reimbursement due to high rates of incidences of bedsores acquired at the nursing home, the company will have difficulty operating, which may cause the organization to downsize and the stakeholders to lose their jobs. Thus, in addition to promoting quality patient care by increasing the knowledge of the caregivers on the best prevention and treatment strategies of DUs, this project may safeguard the caregivers' jobs and also eliminate the potential legal and regulatory implications associated with DUs.

The aim of this project is to contribute to nursing practice by building on previous research findings and promoting an educational intervention that may enhance the knowledge of nursing workers through best practices on prevention and management of

pressure ulcers. The focal point of this project was the caregivers for residents at the project site, but the DU population comprises a complex spectrum of individuals, including those admitted to hospitals and those residing in long-term care facilities, group homes, and personal homes (Ignatavicius & Workman, 2016). Therefore, the findings of this doctoral project can be useful for caregivers and patients in other healthcare facilities and transferable to other similar practices areas. The outcomes of this DNP project may lead to potential positive social change by promoting the reduction of DUs in society, alleviating unnecessary pain and discomfort felt by the patient. Likewise, the reduction of DUs in society may lead to potential positive social change by improving the health and social lives of the patients, reducing waste and unnecessary healthcare costs. The potential positive social change that may arise through this doctoral project can have beneficial implications not only to the patients and the institution but also to family members, and insurance companies as well as the government by reducing healthcare costs related to pressure ulcers (see CDC, 2016).

Summary

DUs are preventable injuries that can lead to severe complications if not identified and treated promptly (Ellis, 2017). The focus of this evidence-based staff education project was on increasing caregivers' knowledge of prevention and management of DUs and how to decrease the incidence of the disease at the project nursing home. If the DUs are not managed well, it can lead to higher healthcare costs and adverse patient outcomes (Ling & Mandl, 2013). Thus, reducing the prevalence of DUs remains an important task. All interdisciplinary team needs to collaborate on DU prevention and management. In

Section 2 of this project, I further explore scholarly evidence as it relates to DU development and prevention. I also consider the role of educational interventions, in increasing the knowledge of caregivers on prevention, treatment, and reduction of the occurrence of DUs.

Section 2: Background and Context

Introduction

The focus of this DNP project work was on addressing the clinical problem of the high incidence of DUs among nursing home residents at the project site. I designed an educational intervention for caregivers, including nurses and nursing assistants, regarding the prevention and treatment of DUs using evidence-based strategies. Many residents of the nursing home develop ulcers due to ineffective prevention and treatment modalities, and the aim of this project was to increase the caregivers' knowledge. DUs can be prevented or treated if there are adequate tools to increase the knowledge of the caregivers on providing prompt and evidence-based prevention strategies that will mitigate the risk factors (Ling & Mandl, 2013). Thus, the provision of education on evidence-based information is necessary for caregivers on DU prevention and management. In conducting the project, I focused on addressing the gap in practice, which was ineffective knowledge regarding EBPs to prevent and treat bedsores in the nursing home.

The aim of the DNP project was to provide education for nursing home caregivers on evidence-based strategies they can use to prevent and manage of DUs. Preventing the occurrence of and effectively managing DUs requires continuous education on up-to-date strategies (Buttaro et al., 2017). The guiding question was, Does an educational intervention increase the knowledge of caregivers on DU prevention and treatment in the nursing home? The purpose of the DNP project work was to develop, deliver, and evaluate education regarding the prevention and treatment of DUs.

The long-term intentional outcome would be to eradicate DUs in nursing facilities and to accomplish DU elimination through the educational intervention program. Reviewing scholarly literature on evidence-based interventions was necessary for this project work. Thus, in this section of the project, I present the current evidence on DU prevention and treatment. Additionally, I provide the model, background, and context of the project; discuss the project's relevance to nursing practice; describe the evidence translation of the model and theoretical orientation of the DNP project; and discuss the roles of the DNP student, and the project team.

Concepts, Models, and Theories

Researchers use conceptual models, theories, and frameworks as their primary method to organize findings into a broader theoretical context. The model provides a conceptual perspective regarding interrelated phenomena. It is also useful in formulating research questions and hypotheses (Cherry & Jacob, 2017). The model employed for this project work was the IOWA Model of Evidence-Based Practice, which promotes a strategic approach to practice change that improves the quality of patient care and to assist nurses and other caregivers to integrate the best evidence into clinical practice (Brown, 2014). I used the model, which is a widely used framework (Cherry & Jacob, 2017), to guide the development and implementation of this project to promote EBP and to decrease the incidence of pressure ulcers in nursing homes. Specifically, I used the model for translating evidence into practice, guiding clinical decision-making, and promoting excellence in the healthcare setting.

The IOWA Model is a prominent framework used to guide the development and implementation of EBP to improve quality care (Brown, 2014). The seven steps of the model include selecting a topic, forming a team, retrieving evidence, grading the evidence, developing an EBP standard, implementing the EBP, and evaluating the standard (Cherry & Jacob, 2017). The model was essential in determining if the topic was relevant and significant for the facility and if the educational intervention was appropriate for them to adopt it into the practice. The model can also be used to identify the triggers for change, gather relevant research evidence, identify outcomes, implement a patient care base on environmental modification, and evaluate the application of the evidence to practice (Brown, 2014).

Key Terms

The following terms are used in this project:

Caregivers: For this project, caregiver means CNAs, LPNs, and RNs.

Decubitus ulcers (DUs): Tissue damage that occurs when the skin and underlying soft tissue are compressed between a bony prominence of the body and external surface for a prolonged time; DUs are also called pressure ulcers or bedsore (Gillespie et al., 2014).

IOWA Model: A model originated by Marita G. Titler to translate evidence into practice, guide clinical decision-making, and promote excellence in the healthcare setting (Brown, 2014).

National Pressure Ulcer Advisory Panel (NPUAP): A body composed of several different groups that manage the etiology, incidence, and prevalence of DUs (NPUAP, 2015).

Relevance to Nursing Practice

This DNP project work has the potential to benefit nursing practice because it addresses DUs, which are a significant issue for the patient, family members, healthcare facility, and other stakeholders. According to Courvoisier et al., (2018), DU is a devastating problem found among patients in long-term care facilities, acute care settings, hospitals, and home care settings. DUs incur costs in the form of penalties, litigation, and patient fees (Bauer et al., 2016). They also increase patient morbidity and mortality and are a burden for patients and their family members (Ellis, 2017). The incidence and prevalence of bedsores increase due to the lack of useful knowledge regarding EBPs in the prevention and management of the disease (Bauer et al., 2016).

Because DUs are a debilitating issue in healthcare settings, the Joint Commission on Accreditation of Healthcare Organization and the CMS has focused attention on guidelines for better treatments and outcomes. The CMS raised a question in 2005, concerning the knowledge deficit of healthcare providers, especially nurses, relating to wound care (Primaris Healthcare Business Solutions, 2018). Patient care involves a multidisciplinary team, nurses are the frontline staff, providing day-to-day treatment care for the patients and also delegating to their nurse assistants (Ignatavicius & Workman, 2016).

There are several recommendations on pressure sore care prevention and treatment, which include identification of risk factors, skin assessment, keeping skin clean and dry, implementation of the Braden Scale, and frequent repositioning (Buttaro et al., 2017). Other preventive strategies include avoiding vigorous rubbing to the skin areas with the potential for breaking down and using barrier cream for protection (Tayyib & Coyer, 2016). The CMS is using a severe approach to alleviate this problem by refusing to provide reimbursement for DUs developed while patients are hospitalized. The measure keeps healthcare providers vigilant when caring for the patient at risk for skin breakdown (Ignatavicius & Workman, 2016). I conducted this project to fill the gap in practice, which was a lack of knowledge regarding the use of evidence-based strategies in the prevention and treatment of DUs.

Local Background and Context

Evidence shows that DU is tissue damage that can be preventable (Gillespie et al., 2014). However, severe complications such as infection, cellulitis, and osteomyelitis can occur if not managed well with evidence-based strategies (Buttaro et al., 2017). The clinical site where this project exercise was conducted is a nursing home, where residents are at risk of developing DUs. The project site is a 100-bed nursing home facility, where about 25% of the residents are suffering from pressure ulcers. About 40% of the residents are immobility or bedridden, wheelchair users, and spend most of their time in bed or wheelchair. The prolonged bed rest or sitting down made them prone to the development of the disease. Other risk factors for developing DU include poor nutrition and hydration,

incontinence, decrease mental status, medical conditions that impede blood flow, such as diabetes and vascular disease (Ignatavicius & Workman, 2016).

The nursing home statistically has 25% of their patients suffering from a pressure ulcer, and 40% of the total residents have a mobility impairment that is a high risk of developing DU. They can develop DU at various sites, and presents in different stages. The lack of using evidence-based interventions to prevent and treat DU makes them the prime candidates for sepsis, and they are at risk for death (Ignatavicius & Workman, 2016). Thus, this project focused on providing education intervention to increase the caregivers' knowledge of evidence-based strategies to prevent and treat decubitus ulcers and how to decrease the incidence of the disease at the nursing home.

The definitions of locally used terms or operational processes relevant to this project include:

Repositioning: This means turning the immobilize patients as often as every two to four hours to prevent skin breakdown.

Immobilized patient: This means any resident that requires assistance with turning and positioning — those who cannot change or control body position.

Decreased mental status: This means less awareness of physical sensation changes and a lack of ability to respond to pressure-related discomfort.

Incontinence: means prolonged contact of skin with urine and feces and associated yeast, bacteria, and enzymes that lead to irritants and skin breakdown. The excessive moisture macerates skin and increases the risk of skin breakdown.

Many nursing home facilities hire RNs, LPNs, and CNAs for direct patient care, and many of them lack evidence-based knowledge and skills to provide care for the patients adequately (Lavallée et al., 2018). Most of the RNs at the nursing homes are not only providing direct care for the patients, but they are also primarily performing administrative duties. Thus, the use of the IOWA model is expected to assist caregivers in delivering evidence-based interventions that combat the incidence of decubitus ulcers in nursing home settings (Cherry & Jacob, 2017).

The passion and expertise for this research are based on the experience I have with patients of the nursing home suffering from bedsores. The experience enabled this DNP student to assess the gap in DU treatment and prevention, and offered an opportunity to be a change agent. Having been a nurse in a nursing home, wound care experience and needs of the patients with DU was an asset to this DNP project. The possible bias that may surface in this project may be related to the passion I have for the patients with wounds. The potential bias was used as a catalyst to promote the desire for being an advocate for the patients who are not capable of being advocating for themselves.

National Institute of Health reveals that incidence and prevalence of decubitus ulcers are increasing due to the aging population in the United States and the increase in the elderly living with a disability (Boyko, Longaker, & Yang, 2018). Also, about 55% of nursing residents have contractures, which are caused by decreased elasticity of tissues around prominence joints that significantly increases the risk of DU formation (AHRQ, 2014). Thus, learning how to prevent and treat decubitus ulcers using evidence-based

strategies appropriately is increasingly essential for all caregivers. The project site has 25% of the residents suffering from DU and 40% mobility impairment patients likely to develop decubitus ulcers on prominence locations, such as sacrum or heels as a result of lack of full mobility. Therefore, these data highlight how important the needs of caregivers to use best practices to prevent and treat pressure ulcers (Ellis, 2017).

Role of the DNP Student

The student is the owner of the project, and his role includes following the project process guide, project checklist, coordinating, and conducting the project work. He was responsible for canvassing the stakeholders at the project site, completing Institutional Review Board applications, and collaborating with the project team and other stakeholders. I was also responsible for reviewing the literature on EBPs on how to best educate nurses and other caregivers within the facility on managing and preventing decubitus ulcers and compliance with guidelines as it relates to DU prevention in the long-term care setting.

As part of the role of the DNP-student, he developed an educational poster and held educational sessions on DU management and prevention using evidence-based strategies. Finally, the role of the DNP student also included orally defending the overall success of the project. The facility gained significant knowledge of using evidence-based strategies to prevent and treat DU and will continue to benefit from this unique education project tremendously. The motivation for this doctoral project includes the experience I have with caring for patients with pressure ulcers. The bias that may have aroused during the process of developing this project is the passion I have for patients with bedsores and

personal experience of dealing with wounds in a family member. The step used to address the bias is to be objective and professional throughout the processing.

Summary

The gap-in-practice identified in this DNP project is the lack of knowledge regarding evidence-based strategies to prevent and treat decubitus ulcers. The framework of the Iowa Model of Evidence-Based Practice was used for translating evidence into practice, guides clinical decision-making, and to promote excellence in the healthcare setting. Since the caregivers are the frontline of patient care, they required to improve quality patient outcomes (Lavallée et al., 2018). The educational intervention program designed to equip the clinical team with increased knowledge of the significance of managing and preventing DUs through EBP. Literature from reputable sources and peer-reviewed EBP guideline was utilized for this project work. The DNP student was responsible for gathering evidence and reviewing the literature, also developing teaching materials and present education classes for the participants to increase their knowledge on using EBPs to prevent and treat DU and how to decrease the incidence of decubitus ulcers. Section 3 of this project centered on the practice-focused question, sources of evidence, analysis, and synthesis

Section 3: Collection and Analysis of Evidence

Introduction

The clinical practice problem that was addressed in this DNP project was the ineffective prevention and treatment of DUs in the project nursing home. This project included implementation of educational interventions to increase caregivers' knowledge of EBPs to prevent and treat DUs in residents of the nursing home. The purpose of this DNP project was to develop, deliver, and evaluate education regarding the prevention and treatment of DUs. In this section, I present the practice-focused question, discuss the sources of evidence, and describe the data analysis and synthesis. Also, I provide an overview of the target population and present the project evaluation plan.

Introduction

Practice-Focused Question

The problem addressed in this DNP project was the ineffective prevention and treatment of DUs in the project nursing home, and the gap in practice was the lack of knowledge regarding evidence-based strategies to prevent and treat DUs. The practice-focused question was, Will an educational intervention increase the knowledge of caregivers on DU prevention and treatment in the nursing home? The purpose of the DNP project included developing, delivering, and evaluating education regarding the prevention and treatment of DUs. The practice-focused question aligned with the project work of providing education for caregivers on evidence-based strategies to increase their knowledge on preventing and management of DUs in the project nursing facility.

Definition of Terms

The following words or phrases are defined for this DNP project.

Evidence-based practice (EBP): The use of systematic and research findings as the basis for nursing interventions to prevent and treat DUs (Cherry & Jacob, 2017).

Incidence rates: The percentage of patients who develop new DUs while in the facility.

Nursing home: A long-term facility that provides 24-hours residential care for older adult or disabled residents.

Prevalence rates: The percentage of all patients with DUs in the facility. It includes those who developed DUs during the facility stay and those who develop DUs before admission.

Residents: The patients residing at the nursing home. These are the patients who cannot be cared for at home and who do not meet the criteria to be in the hospital.:

Sources of Evidence

To collect systematic evidence to satisfy the requirements for this DNP project work, I used the following sources: evidence-based guidelines, organizational policies, and protocols retrieved from peer-reviewed studies university databases and healthcare organization libraries. I used various sources of evidence, but tried to align my sources with the hierarchy of the levels of evidence, which range from systemic reviews level to expert opinions or background information level (Polit & Beck, 2017). Locating the various sources of literature used in the project entailed searching Walden University Library databases, including the Cochrane Database of Systematic Reviews, the Joanna

Briggs Institute EBP Database, CINAHL Plus with Full Text, the Database of Abstracts of Reviews of Effects, Medline, PubMed, and ProQuest Health & Medical Collection. The search key terms used to gather evidence-based data and information related to the stated problem included "*decubitus ulcer*," "*pressure ulcers*," "*bedsores in nursing homes*," and "*pressure injuries*." Other sources utilized for gathering evidence-based data included textbooks and relevant organizational websites such as the CDC, HealthIT.gov, and the NPUAP websites.

The project team members administered the pretest and posttest questionnaires before and after the education sessions. The questionnaires assessed the knowledge of the caregivers on the best practices in DU prevention and treatment. The questionnaires consisted of 20 questions, of which five were Likert scale responses that involved choosing the best answer from five options, and the remaining questions had *yes* or *no* or *needs improvement* options. I adapted the questionnaire from Primaris Health Care Business Solutions Company. Primaris is a consulting company serving health care organizations, hospitals, and medical groups, and was hired by the Medicare Quality Improvement Organization to develop educational material for managing DUs (Primaris, 2018).

To maintain the integrity of this project work, the nurse educator, wound care nurse, and the quality/risk manager from the project team were involved in administering the pretest and posttest questionnaires. Scores were assigned to the grades and tabulated in Microsoft Excel. The practice-focused question that was addressed was: Does an educational intervention increase the knowledge of caregivers on DU prevention and

treatment in the nursing home? The educational program contained EBPs to prevent and treat DUs. The collection of evidence and resources on DU prevention and treatment provides an appropriate way to address the practice-focused question. Following is an overview of key parts of the project:

Participants

The individuals who participated in the education were 40 caregivers, consisting of RNs, LPNs, CMAs, and CNAs. The inclusion criteria for choosing the participants for the educational intervention included that they provide direct care for the patients. Not providing direct care constituted the exclusion criterion for this DNP project.

Procedures

I developed a DU prevention and treatment poster based on the current guidelines on evidence-based prevention and treatment of pressure ulcers. I displayed the poster in the in-service classroom, educated the participants on the contents of the poster, and gave them adequate time to ask questions on the content of the poster.

Protections

Participation in the completion of this doctoral project was voluntary, and no confidential information was collected during the study. I chose participants based on their willingness to participants in the project and whether they provided direct care to the residents. I told the participants that the aim of the educational intervention is to improve health care delivery through EBP and to make their job easier

Analysis and Synthesis

The project site consists of four units, and each unit at the facility has 25 beds. The facility uses a quality measurement program to count and track pressure ulcer occurrence at the facility. The DU prevalence and incidence data obtained from the medical record department shows about 25% of the residents were suffering from DUs, and 40% were at high risk of developing DUs. The facility's patients have diverse backgrounds, and many are at high risk for developing DUs due to ineffective prevention and treatment. The data collected on caregivers' knowledge includes baseline data (pretest) and the results of the post education intervention (posttest). I used the posttest results to evaluate whether caregivers' knowledge of using best practices to prevent and treat DUs increased compared to pretest results. The participants took the pretest questionnaires before the presentation of the education, and they completed the posttest after the educational intervention. In Section 4, I offer recommendations regarding the outcome of the education intervention. The DNP project work has the potential to benefit nursing practice because it relates to DUs, which are a significant issue for the patients, family members, and healthcare facilities.

Summary

DUs affect more than 2.5 million people annually in the United States, and they are one of the most costly health conditions in the country (Spector & Bergofsky, 2016). It is a devastating problem found among patients in long-term care facilities, and it increases patient morbidity and mortality, and imposes a burden for them and their family members (NPUAP, 2015). I conducted this project to provide an educational intervention

for caregivers regarding EBPs to prevent and treat DUs and to reduce the prevalence and incidence of DUs in the project nursing home facility. The practice-focused question centered on whether education increases the knowledge of caregivers of EBPs to treat and prevent DUs in nursing home settings. The data collection method used to assess caregivers' knowledge was a pretest-posttest approach. The questions helped to determine the experience of the caregivers, both pre- and post-educational intervention (see Polit & Beck, 2017). In Section 4 of this project, I focus on the findings and implications, offer recommendations, and discuss the contribution of the doctoral project team, and the strengths and limitations of the DNP project.

Section 4: Findings and Recommendations

Introduction

The local problem addressed in this DNP project work was the ineffective prevention and treatment of DUs in the nursing home setting. The project addressed how to prevent and treat the high rate of new, recurring, and existing, non-healing DUs among nursing home residents. The project work addressed the gap in practice related to the lack of useful knowledge regarding EBPs among caregivers to prevent and treat DUs in nursing homes. The NPUAP presents guidance on DU prediction, prevention, and management. The guidelines include early identification of pressure-induced tissue injury, use of pressure ulcer assessment checklists to assess the incidence and prevalence rates, and the implementation of best practice intervention for the prevention and treatment of DUs (NPUAP, 2015). This DNP project work provided ways to address the identified gap in practice by translating existing EBP on pressure ulcers into practice at the project site through an educational intervention designed to increase knowledge of caregivers on prevention and management of DUs. The project also provided an opportunity for the site's caregivers to use education to bridge the gap on best practices and their current practice. EBP on DU prevention and management requires an organization to provide adequate and continuous education and training for caregivers (Yap et al., 2016). The practice focus question was, Does an educational intervention increase the knowledge of caregivers on DU prevention and treatment in the nursing home? The purpose of this DNP project was to develop, deliver, and evaluate an education intervention regarding the prevention and treatment of DUs. The project

entailed providing education programs for the project site caregivers on evidence-based strategies to increase their knowledge on preventing and management of DUs. In this section, I will present the findings, implications, recommendations, strengths, and limitations of the project, and contributions of the doctoral project team. I obtained data through pretest and posttest questionnaires. The results were tabulated in a spreadsheet and then analyzed. The findings affirmed that the educational intervention is highly essential and beneficial in increasing caregivers' knowledge of evidence-based strategies to prevent and decrease the incidence and prevalence of DUs in nursing home settings.

Findings and Implications

For the educational presentation I used a tri-fold cardboard poster. The poster was colorfully designed to captivate participants' attention, with concise information on DU prevention and management strategies in a readable bold font. Some contents of the poster are an introduction, the definition, and stages of DU with diagrams, risk factors, avoidable and unavoidable sores, tools to identify at-risk patients like the Braden scale, skin/wound assessment, and reassessment, and the benefits of preventing DUs. The poster also includes interventions such as protocols for repositioning immobilized patient, pressure relief products and pressure reduction devices consistent with patient needs and goals, and SBAR communication tool. Other contents of the poster include individualized care planning, caregiver roles, wound-care team, monitoring wound status, wound descriptions and documentation, best practices for risk reduction strategies, and DU resources. I included bright, visually augmented, and evidence-based information to increase the interest of the participants and motivate them to engage in discussion.

The findings were based on the results of the pretest and posttest questionnaires, which were adapted from Primaris health organization. I evaluated the participant caregivers' knowledge of identifying at-risk patients using the Braden scale, prevention of shearing and friction, pressure reduction, and documentation of skin condition. In devising the process of the education intervention, I drew from EBP practice guidelines, specifically the IOWA Model (Brown, 2014). The pretest questionnaires were presented before the education session, while the posttest questionnaires and evaluation form were distributed to the participants after the education session to determine if the education program was successful. The analysis of the data collection for this project was based on the results of the pretest/posttest questionnaires. I was able to calculate the learning gains from the education session based on the information gathered from the evaluation scores. The pretest questionnaires gathered the baseline knowledge of the participants, while the posttest was used to determine the caregivers' level of knowledge on best practices after the education program.

Results

The data analysis of the pretest/posttest questionnaires for the education program participants is displayed in Table 1. The pretest and posttest comprised 20 questions (see Appendix). Each of the questions is equivalent to 5 points totaling 100% for the 20 questions. Approximately 40 caregivers participated in the educational intervention and answered the pretest/posttest questionnaires. The caregivers included 10 RNs, 10 LPNs, and 20 CNAs. The mean scores were calculated for the participant caregiver groups. The pretest means score for nursing assistants was 30; LPNs, 35; and RNs, 45. The findings

from the pretest results show that the majority of the caregivers lack adequate knowledge of evidence-based strategies to prevent and treat DUs in the nursing home. However, the posttest means score for nursing assistants was 85; LPNs, 95; and RNs, 100. The passing score for the posttest was set to 80%. Thus, the posttest results provide evidence that the educational intervention can increase the knowledge of the caregivers on best practices to prevent and treat DUs. The posttest scores revealed that the participants' knowledge of EBP improved following the poster presentation (see Table 1).

Table 1

Comparison of Mean Scores for the Pretest and Posttest Questionnaires

Job title	Pretest mean score	Posttest mean score
Nursing assistants	30	85
Licensed practical nurses	35	95
Registered nurses	45	100

However, the process of the program encountered some unanticipated limitations and outcomes. The numbers of participating caregivers were smaller than expected, and the educational intervention was conducted in a brief time frame. Nevertheless, an educational session, including the pretest and posttest, was completed successfully, and the knowledge of the participant caregivers was much improved. According to Unver, Findik, Ozkan, and Surucu (2017), caregivers play vital roles in skincare, wound care, and prevention of pressure injuries. The participants reported inadequate knowledge of current EBPs and underdeveloped skills as concerns. A conclusion is that lack of

knowledge of best practices and underdeveloped skills are the barriers that affect efforts to prevent and manage DUs at the facility.

Other notable barriers for effective prevention and management of DU include the shortage of staff; heavy workload; lack of weekly assessment tools; and inadequate equipment such as barrier creams, dressing materials, and pressure reduction devices. However, the commonly reported concerns are the lack of continuous training on pressure relief products and protocols for the prevention and management of DUs. The project findings clearly show that if caregivers periodically receive adequate training, their knowledge of best practices can improve the quality of patient care regarding DU prevention and treatment. Adequate training may decrease the incidence and prevalence of DUs in the nursing home, which may also lead to a decrease in the cost of managing this particular issue. This study may thus have a positive social change impact on the nursing facility.

Recommendations

The recommendations derived from this project study are that caregivers need adequate and continuous education on evidence-based strategies to address the gap-in-practice. The gap-in-practice is the lack of useful knowledge regarding EBPs to prevent and treat DU in nursing homes. The caregivers also need continuous education training and clarification on their roles in predicting, identifying, and preventing DU in at-risk patients. Also, the recruitment of more caregivers and provision of adequate necessary equipment are some of the significant steps to implement best practices regarding the prevention and treatment of DUs. Additionally, the caregivers need periodic refresher

courses on risk assessment, monitoring tools, disease progression, and clinical guidelines on preventing pressure injuries.

The caregivers and other clinicians should embrace the use of SBAR for the skincare communication form. The SBAR is the technique used to facilitate prompt and appropriate skincare communication. The SBAR skin care instruction stands for Situation, Background, Assessment, and Recommendation. The situation describes the identity of the patient, age, date of admission; the admitting and consulting physicians; the admission diagnosis, and treatment plan (Cherry & Jacob, 2017). The background describes the patient's past medical history, diet type, allergies, and medications. The assessment identifies present of DU or precautions; risk factors such as incontinent, limited or complete immobile, sensory impairment, lethargic, alert, or confused. The assessment also includes stages of DU, size, Braden scale score, site diagram, was a photo taken or not, and other descriptions such as color, drainage, odor, sloughing, eschar, undermining (Ignatavicius & Workman, 2016).

The recommendations include prevention strategies, such as keeping skin clean and dry, avoiding diaper/brief use, application of cleanser/barrier lotions, use of special bed/mattress, use of chair cushion, elevate heels, use of elbow protectors, use heel protectors/heel lift, and dietary/nutrition consult. The recommendations also include management strategies, such as DU treatment, dressing type, and frequency, wound vacuum device if applicable, considering the use of Foley catheter, odor control mechanism, and dietary/nutrition consult (Ignatavicius & Workman, 2016). Lastly, care planning, such as a repositioning schedule, should be individualized to fit the patient's

needs. Overall, the assistant director of nursing indicates that she will coordinate with other nursing executives to ensure that caregivers benefit from the educational aspect of the project.

The findings of this project will significantly contribute to the existing evidence-based materials on preventing and treating decubitus ulcers in nursing home settings. According to the IOWA Model of Evidence-Based Practice, the team should include interested interdisciplinary stakeholders or critical personnel to promote excellence in health care (Brown, 2014). This project demonstrated that educational intervention increased the knowledge of caregivers on best practices to prevent and treat DU, which can lead to high-quality patient care to reduce the incidence of DU at the nursing home. Therefore, it is recommended that the site management monitor DU for reduction after the education to ascertain if the increased knowledge leads to the reduction of DU at the facility.

Contribution of the Doctoral Project Team

The student, assistant director of nursing, and wound care nurse were all involved in administering the questionnaire to the participants both during the pretest and posttest sessions, which lasted for one hour. The wound care nurse, assistant director of nursing, and I distributed the questionnaires to the caregivers during the in-service program to ensure that we reached all the participants. After the 30 minutes of distribution of the questionnaires, we collected the answered copies. A total of 40 questionnaires were administered, and we retrieved all the 40 questionnaires for data analysis. The facility nurse educator graded the questionnaires and shared the results with the DNP-student in a

de-identified form. The director of nursing uses her position to encouraged caregivers to participate in the educational intervention.

At the end of the session, the project team agreed that it was a successful process, which I credited to the team spirit, dedication, and cooperation of the team members. All the stakeholders agreed that educating caregivers on best practices to prevent and treat can significantly reduce the problem of DU within the facility and beyond. Thus, the team collectively opined that it is essential to present the findings to the management team at the facility during the next executive meeting.

Strength and Limitations of the Project

The project presents some strength, which includes using precise and understandable questionnaires with the process that is well-designed to be transferable to other nursing care settings. The data collection is cost-efficient. The objective of the project was clearly stated, and there is no conflict of interest. Also, multiple reliable databases were searched to gathered evidence materials. The project team included wound care expertise, nurse educator, interdisciplinary professionals, and researchers. However, the limitations that worth noted in this project work include the short timeframe for the presentation and the small sample size. Also, the unintended omission of information about role clarification was another limitation of this project.

Nevertheless, the findings from the pretest and posttest questionnaires indicate that education and training of EBP are particularly beneficial and essential for caregivers. Moreover, since there is a similar type of nursing practice and education on DU prevention distributed to hospitals and long-term care settings, the result of this project

can be transferable to all caregivers working in nursing home settings. The recommendation for future projects on similar topics with similar methods needs adequate time for presentations of the education sessions, including pretest and posttest questionnaires (Polit & Beck, 2017). Section 5 focuses on plans to disseminate this project work to the facilities experiencing the problem decubitus ulcers, the analysis of self as a DNP-student, and the concluding statement of the DNP project.

Section 5: Dissemination Plan

Introduction

I found that caregivers' knowledge of best practices for the prevention and treatment of DUs was relevant to nursing practice and the improvement of quality patient care in the project nursing home. The findings show that educating and training caregivers improves their knowledge significantly regarding preventing and managing pressure injuries. The assistant director of nursing, in conjunction with the nurse educator, indicates that they will schedule quarterly educational in-service training for the caregivers at the facility using the project materials and other current, evidence-based materials on pressure injuries.

The project demonstrates that the majority of the caregivers at the facility have insufficient knowledge of EBP to prevent DUs. Thus, based on the nature and outcome of the project, the audiences would be caregivers and other stakeholders in nursing homes. Posters can be utilized during in-service or a formal meeting to present the outcomes efficiently and succinctly. The posters can be reproduced so that nurses can take the information to their respective units. Also, the project site is one of 31 independently owned and operated facilities under the parent company in the state. Thus, corporate meetings and conferences of the executives are one of the venues to present the findings to the rest of the company's nursing homes. The project material can be used during the meetings, seminars, and in-services and distributed among caregivers. The material can also be distributed in other appropriate places to reach key audiences (primary attending, physical therapist, dermatologist, patient and family members).

Analysis of Self

Completing this DNP project resulted in positive personal growth and enhanced my leadership skills in my profession. Confronting various delays throughout the process of the project has enhanced by patience, perseverance, and self-advocacy. As the manager of this project, my leadership competencies were tested and improved during the process. It is a great experience to see the project come to fruition. As a practitioner, the integration of my clinical background and the use of EBP create a new dimension and vision to develop a change in my practice. The use of best practices in preventing and treating DUs supports my desire to reduce the incidence and prevalence of DU at the project site. During the process of project completion, as a scholar, I had the opportunity to enhance my knowledge and advanced my nursing skills in using EBP to prevent pressure injuries. The experiences I acquired during this project have motivated me and increased my commitment to continue education in nursing practice. I believe that this will make me a better nurse practitioner.

The connection between these project experiences, my present state, and my long-term professional goals are tremendous. The project outcome shows that educators have a significant role to play in increasing scholarly activity among caregivers and other learners. Thus, my long-term professional goal is to be an adjunct nurse educator, and this project has dramatically increased my motivation. Besides, by searching for evidence and implementation of educational intervention and its outcomes, I have gained excellent skills with confidence that they will foster continued success in my professional goals.

Lastly, this project process increases my desire to advocate for preventative strategies that will improve quality patient care in nursing practice.

No doubt, the process of this project was challenging and time-consuming. However, it enabled me to grow in exercising patience and persistence in pursuing the completion of the project. The insight I gained from the journey is that effective communication with the project chair and other stakeholders plays a significant role in preventing some potential delays and resolving conflicts. The critical success of this scholarly journey is to remain calm, avoid distractions as much as possible, and focus on the goals.

Summary

DUs were a problem among patients in the nursing home facility because the majority of the patients were unable to care for themselves or communicate their needs. They depend on the caregivers for accomplishing their activities of daily living. However, these caregivers lack current useful knowledge regarding EBPs to prevent and treat DUs in nursing homes. Thus, I conducted this project to develop, deliver, and evaluate education for site caregivers on evidence-based strategies with the intent to increase their knowledge on prevention and treatment of pressure injuries. The outcomes of the DNP-project show that an educational intervention increases the knowledge of caregivers on DU prevention and treatment in the nursing home. Also, it shows that increased knowledge increases performance. A recommendation arising from this project is that caregivers should receive continuous education intervention and practical training

on using current best practices to prevent and treat DUs to reduce the incidence of bedsores in the nursing home effectively

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Appendix: Decubitus Ulcer Knowledge Questionnaire

Directions: Check the best answer:

1. Does your facility have a process to screen residents for decubitus ulcer risk? Yes () No () In progress ()

2. Do you use either the Norton or Braden pressure ulcer risk assessment tool? Yes () No () In progress ()

3. Does your facility have a protocol for management of tissue loads (e.g., positioning, pressure relieving mattresses, dynamic mattress overlay)? Yes () No () Needs Improvement ()

4. Are caregivers assessed for the need for education on decubitus ulcer prevention and management regularly? Yes () No () Needs Improvement ()

5. Identification and reporting of reddened or open areas of skin are part of caregiver's job. Yes () No ().

6. Residents who have had a decubitus ulcer in the past are more likely to develop one in the future. Yes () No ()

7. Decubitus ulcers begin with a reddened area of the skin that does disappear after pressure is relieved. Yes () No ()

8. Daily assessment of skin and risk and incorporate into other routine assessments can prevent decubitus ulcer. Yes () No ()

9. Decubitus ulcers will never occur over bony prominences. Yes () No ()

10. Decubitus ulcer preventions are part of caregiver's job. Yes () No ()

11. Immobility and incontinence are part of the causes of decubitus ulcers. Yes () No ()

12. Poor circulation and chronic disease are not part of the causes of decubitus ulcers. Yes () No ()

13. Decubitus ulcers are often viewed as a sign of poor care being provided by the caregivers. Yes () No ()

14. Decubitus ulcers can be prevented by proper positioning of residents. Yes () No ()

15. Decubitus ulcers are part of the aging process. Yes () No ()

16. When do you screen all residents for decubitus ulcer risk?

    (a) Upon admission.
    (b) Upon readmission.
    (c) When change in condition.
    (d) With each MDS assessment.
    (e) All of the above.

17. Pressure reducing support surfaces should include:

    (a) Pressure pads for mattresses,
    (b) non-powered pressure reducing mattresses
    (c) Powered pressure reducing mattress overlay systems.
    (d) None of the above
    (e) All of the above

18. Use of mattress overlay or pressure redistribution device is considered medically necessary if the patient meets:

    (a) Completely or limited immobile
    (b) Ambulatory
    (c) Altered sensory perception
    (d) A and C
    (e) All of the above

19. Which of the following are risk factors for skin breakdown?

    (a) Incontinence and moisture,
    (b) Rubbing or friction
    (c) Chair/bed mobility
    (d) Poor nutrition
    (e) All of the above

20. Which of the following can best prevent decubitus ulcers from developing?

    (a) Turning every patient every 2 hours.
    (b) Individualized turning schedule
    (c) Turning patient upon request.
    (d) Turning every patient every shift.
    (e) All of the above.

Note. Adapted from the pretest/posttest questionnaire from an instrument developed by Primaris Healthcare Business Solutions (2018)