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Improving Advanced Practice Registered Nursing Knowledge of Shingles Management

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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,
and that any and all revisions required by
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Walden University
2023

Abstract

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by

Kyla Gilbert

MS, Walden University, 2017

BS, Indiana Wesleyan University, 2015

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Shingles is a viral infection that can adversely impact patients if not promptly treated. In the project facility, a gap in practice was identified when a 6-month facility chart review noted a delay in shingles diagnosis 60% of the time. It is important for the Advanced Practice Registered Nursing (APRN) to be knowledgeable regarding diagnoses and best practices for treatment of shingles. However, the local facility had no available education on shingles. The practice-focused question asked whether APRN knowledge of shingles could be improved through staff education. The doctoral project provided shingles education to address the identified knowledge gap. The purpose of this project was to increase APRN knowledge of diagnosing and treating shingles. A literature review was conducted using Walden University library resources, CINAHL, MEDLINE, Google Scholar, and the Centers for Disease Control and Prevention website. Available evidence was used to develop best practice evidence for education. The analysis, design, development, implementation, and evaluation (ADDIE) model was foundational to this educational project. Through pre-post knowledge assessments data was gathered from the 5 participating APRNs and the educational program was found to be effective with a 10% increase in scores between pre and post assessments. The p-value was calculated at 0.017 to show a significant difference in pre and post assessment scores. This project can be utilized as a model for other staff education projects on differing topics. This project could lead to positive social change within the nursing community and patient population by ensuring that APRNs have the knowledge to provide best care to their patients. This assists in ensuring patients receive appropriate care and creates a healthier community.

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Dedication

This project is done in honor of my husband who suffered and continues to suffer from long-term nerve damage caused by the shingles virus. I also dedicate this project to my two stepsons who have not only encouraged me to complete this but have believed that I could do so.

Acknowledgments

I would like to acknowledge Dr. Patricia Schweickert who has been patient and kind while helping me navigate this process.

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Section 1: Nature of the Project

Introduction

Shingles is a prominent viral infection that affects an already burdened health care system. Shingles, or herpes zoster, is caused by the reactivation of latent varicella-zoster virus following chickenpox (Conceicao, 2018). An estimated 1 million people develop shingles each year in the United States, and approximately 1 in 3 Americans will develop shingles in their lifetime (Hanson, 2021). Health care providers, including advanced practice registered nurses (APRNs), are tasked with treating those who are affected by the shingles virus. In a 6-month facility chart review at the health care facility where I am employed, the number of shingles cases that had a delayed diagnosis was at 60%. Therefore, a greater understanding of the epidemiology, clinical manifestations, diagnosis, and available treatment options was essential to initiate early treatment in patients with suspected herpes zoster infection (Gross et al., 2020). At this facility, located in the state of Kentucky, there was currently no staff education on shingles. This led to a gap in practice and an opportunity to increase APRNs' knowledge through staff education.

According to the Centers for Disease Control and Prevention (CDC, 2022), an estimated 1 million Americans will develop shingles annually. Due to the forecasted number of those who will develop shingles and the need for medical treatment, APRNs will bear responsibility for diagnosing and treating those affected by the virus (Perry, 2022). APRNs who are in a position to care for those with shingles must have knowledge in identifying and treating shingles, in order to provide quality care. Continuing education

is a tool that can assist those in health care to stay up to date on treatments and best practice guidelines (Agyepong & Okyere, 2018). Research was done on the effectiveness of provider education of shingles vaccine; the result was increased overall knowledge and increased likelihood of vaccine recommendation (Buzzeo, 2019). This doctoral project provided an educational opportunity for the APRNs at the facility. The focus was on evidence-based best practices and current standards of care for shingles treatment. An educational program was presented to APRN participants in the local facility. A knowledge questionnaire was collected before and after the educational intervention to assess whether an increase in knowledge had occurred.

The health care climate is ever-changing and as knowledge increases, treatments may change. The goal of this doctoral project was to create social change through education. The development of an APRN education program may promote a uniform evidence-based approach to the management of shingles within the facility where I am employed. This project ensured that nursing was better equipped through up-to-date information on treatment options for those suffering from shingles. Walden University defines positive social change as a deliberate process of creating and applying ideas, strategies, and actions to promote the worth, dignity, and development of individuals, communities, organizations, institutions, cultures, and societies (Walden University, 2020). The creation of an educational project embodies this idea of individual development and impacts the nursing community through the establishment of confident care providers.

Problem Statement

In the project facility, a gap of practice was identified in the treatment of shingles. Through a facility-led chart review, over a 6-month period, it was noted that those patients who ultimately were diagnosed and treated for shingles had a delay in diagnosis 60% of the time. The facility where the chart review was conducted employs APRNs to provide care throughout rural central Kentucky. There was currently no staff education at this facility available to APRNs on the topic of shingles. With the percentage of delayed diagnosis being at 60%, there was a need for staff education on the topic.

Shingles are very prevalent. According to the CDC, studies have shown that the incidence of shingles has increased over time; incidence per 1,000 persons has increased from 2.5 in 1993 to 6.1 in 2006 to 7.2 in 2016 (Brotherton & Shah, 2020). Vaccinations do play a part in helping prevent many people from developing shingles (Brotherton & Shah, 2020). However, the number of vaccinated individuals in the Kentucky area where this facility is located is much smaller than in other locations (Stephenson, 2020). There is a considerable geographic variation in shingles vaccination, ranging from 26.3% in the East South-Central region (i.e., Alabama, Kentucky, Mississippi, and Tennessee) to 42.8% in the West North Central region (i.e., Iowa, Kansas, Missouri, Nebraska, North Dakota, and South Dakota; Stephenson, 2020). This measure of vaccinated individuals demonstrates the need for additional education of APRNs in Kentucky. The fact that this area has a less vaccinated population leads to a potential for more shingles outbreaks in this region.

Through this doctoral project, the nursing community was positively impacted by the production of confident, educated, and prepared APRNs ready to assist in creating a healthier community. This project also benefitted the nursing community by creating a template for future educational offerings within these practices. Overall, however, the ultimate benefit of this program was giving APRNs knowledge that can lead to appropriate care bestowed on patients in a timely and efficient manner.

Purpose Statement

The purpose of this doctoral project was to educate primary care APRNs on the assessment, diagnosis, and treatment of shingles. The project facility lacked a staff training program to improve knowledge identifying and treating shingles. This led to a gap in practice, where due to insufficient knowledge, those suffering with shingles may not be diagnosed as promptly. The practice-focused question that guided this project asked whether APRN knowledge could be improved through education on diagnosis and management of shingles. The lack of staff education created a gap in practice and an opportunity for resolution. The goal of this doctoral project was the promotion of up-to-date, evidence-based, information on assessing, diagnosing, and treating shingles for APRNs.

Throughout the United States, nurses report a lack of time to find and read sources of evidence, as well as insufficient time to incorporate that evidence into a practice change (Mudderman et al., 2020). The APRNs in these practices are no exception to these feelings. The chart review at the project facility showed that there was

a need for education regarding shingles management. This knowledge gap closed with the assistance of this staff educational project.

Continuing education can have many barriers including a lack of training in evidence-based practice (EBP), lack of confidence in appraising research articles, lack of awareness about research, difficulty understanding statistics and other technical terminology, and lack of ability to generalize the results to current practice (Mudderman et al., 2020). This project took pertinent information and condensed it into an easy-to-understand PowerPoint presentation. It also offered resources that APRNs could continue to refer to while in their everyday practices. Quick identification and treatment of shingles leads to better outcomes and decrease the possibility of long-term complications (Bolton et al., 2021).

Nature of the Doctoral Project

The sources of evidence used for this project were gained from multiple databases, government agencies, and national organizations. Prior to implementation of the project, I conducted a literature review. The material for the literature review came through the utilization of the Walden University Library. CINAHL and MEDLINE provided access to multiple peer-reviewed journal articles. Walden librarians aided in finding additional journals and studies through Google Scholar. These resources were utilized in the creation of the staff education. Additional information was gleaned for analysis through pre-posttest to assess for improved knowledge.

There was a gap in knowledge when it came to up-to-date information on shingles at the project facility. Through a facility review of shingles cases over a 6-month period,

there were three cases out of five that had a delay in diagnosis. The number one reason for the delay was provider lack of knowledge regarding the presentation of shingles. This was determined through the faculty-led chart review. The most common sign of shingles is a unilateral rash; however, if the rash is not obvious or absent this can lead to a delay in diagnosis and or investigations (Obafemi & Golden, 2018). Through a stronger understanding of presentations and treatments, this number can be improved. Kentucky has a lower number of individuals who are vaccinated against shingles, leading to the conclusion that there is a great potential for shingles outbreaks in that area. With this doctoral project's focus, the APRNs are better prepared to identify and treat shingles in a timely manner.

Significance

This doctoral project impacted multiple stakeholders. These include APRNs, patients, and the health care organization. The APRNs benefitted from this project and had an opportunity to expand their knowledge base and created awareness of available resources to them. Patients will benefit from quality care that is evidence based. Decreasing delay in diagnosis would be one of the ultimate goals, with the hope that quicker treatment leads to better outcomes. The last stakeholder was the health care organization itself. This project will improve the quality of care being provided by their employees and potentially decrease health care costs associated with shingles complications.

The significance of this project was the closing of a gap in practice through education. If the gap of practice is resolved, then patients receive their care from more

knowledgeable APRNs. Organizations should adequately fund and make continuing professional development accessible (Mlambo et al., 2021). Nurses should continue to actively engage in continuing professional development to maintain high standards of nursing care through competent practice (Mlambo et al., 2021).

With rising health care costs, declining insurance reimbursement, changing consumer demands, and other health disparities, the landscape is changing, and APRNs are rapidly increasing in numbers to address health care demands for access to high-quality care (Kapu et al., 2021). Since APRNs are on the front line of patient care, and shingles are an extremely prevalent viral infection, there should be specific education for APRNs on the diagnosis and treatment of the issue. Contributions to nursing practice include better understanding of disease etiology, quicker ability to diagnose, and knowledge of current treatment guidelines. Through the creation of this educational project, APRNs were given tools to ensure appropriate quality care can be efficiently rendered to those who need it.

This model may also be used in other professions who lack an organized staff education program. As time goes on within the project facility, there may be more gaps in practice identified. If this is the case, the doctoral project has laid a road map for those who are tasked with addressing the issue. This project can also be adapted to assist with closing the gap of practice in other health care organizations.

This project may positively impact social change by assisting APRNs with the development of their knowledge base, creating healthier communities, increasing patient satisfaction, and decreasing the health care cost burden. This project has been proven to

be successful; the concept of content-specific staff education now can be applied to other topics. This allows for an outline that can be followed in the future to assist in the continuing education of the APRN staff at this health facility and others.

Summary

The purpose of this doctoral project was to create staff education on shingles for APRNs. Shingles is a prevalent viral disease. Education on diagnosing and treating shingles is necessary to ensure that quick and appropriate care is provided to patients. This ensures that patients receive quality care. Quick treatment helps decrease the potential for complications to develop. APRNs are an integral part of the health care team delivering treatment for shingles.

At the project facility, there are APRNs providing care for a significant number of patients in rural central Kentucky. These providers had not been provided with new or up-to-date information on shingles treatments. This project led to the creation of staff education on shingles and EBP. Through pre and post-knowledge assessments collected during the educational offering, data were collected for comparison as to whether an increase in knowledge occurred. This education was proven valuable and may be used as a model for future educational offerings at the local facility. In the following sections, I discuss the theory behind the project, the tools used to create it, and its relevance to the nursing profession.

Section 2: Background and Context

Introduction

Shingles, a reactivation of varicella virus, is an issue that is dealt with throughout the United States. At a health care facility in Kentucky, a chart review was conducted leading to the conclusion that there was a 60% misdiagnoses rate. The practice-focused question asked whether APRN knowledge of shingles could be improved through staff education. An education program assisted APRNs in understanding the condition and gave them resources to assist in diagnosing and treating patients. The purpose of this doctoral project was to create an education program that improves the knowledge base of APRNs.

In this section, there will be discussion on the models used to assist in the creation of the staff education. There will also be insight into the relevance of this education. The roles of both the DNP student and the project team will be described. This will better assist in understanding the importance of this program.

Concepts, Models, and Theories

To understand the benefit of the staff education program pre and post knowledge assessments were developed. These questionnaires were developed through the adaption of knowledge assessments created by the Agency for Healthcare Research and Quality (AHRQ). The pre-education knowledge assessment evaluated the APRNs self-reported knowledge of shingles etiology, presentation, treatment, and current guidelines. Then there was an educational PowerPoint presentation developed using the analysis, design, development, implementation and evaluation (ADDIE) model. This presentation

discussed the etiology of shingles, typical presentation of shingles, treatment options, guidelines and resource list. The five-fold framework of the ADDIE model covers all the steps of the instructional design process (Ab Latif & Mat Nor, 2020).

When considering the goal of this DNP project was to educate and ultimately incite change to APRN practice, Roger's innovation diffusion theory was useful in the developing stages. Roger's theory explains how individuals proceed from having knowledge of an innovation to confirming the decision, and then to adopting or rejecting the idea (Udod & Wagner, 2018). The theory includes five steps: knowledge, persuasion, decision, implementation, and confirmation. Knowledge, the first stage, is when an individual is first exposed to an innovation but lacks information about the innovation (Udod & Wagner, 2018). Persuasion is the stage where the individual is interested in the innovation and actively seeks related information (Udod & Wagner, 2018) Decision is the stage where an individual considers change and weighs the advantages and disadvantages of implementing the innovation (Udod & Wagner, 2018). Implementation is when the individual implements the innovation and confirmation is the last stage where an individual finalizes the decision to continue using the innovation (Udod & Wagner, 2018). Recognizing the need for knowledge and the role it plays in innovation was critical to the foundation of this project. APRNs were made aware of the gap in practice, which aligns with the knowledge step of Roger's theory. APRNs who wanted to learn more about the guidelines on shingles assessment and treatment entered the persuasion stage of the theory. This leads APRNs to the point of decision, where they can determine if they would like to use this information within their practices or not. Through

implementation of what was learned through this educational project, APRNs can decide if it is beneficial to patient care. If APRNs deem it beneficial, then confirmation will occur, and they will continue to utilize the information learned through this project in their daily practices.

Relevance to Nursing Practice

Shingles is a high-volume issue within the United States. An unvaccinated U.S. population would be projected to experience 1.1 million shingles cases annually, with an associated direct medical cost of $2.4 billion (Harvey et al., 2020). APRNs are faced with treating the shingles and providing efficient care. It is through competent care the health care burden may be decreased. At the project facility, there was no education on shingles identification or management. Through a facility chart review, it was noted that there was a delay in diagnosis of more than half of the shingles cases. This led to an identification of a gap in practice. Shingles may present in different ways. Because of this, there can be a delay in diagnosis (Obafemi & Golden, 2018). Through staff education, this gap was closed and APRNs will be better equipped to treat patients.

Local Background and Context

The health care organization where this project took place is in central Kentucky. According to the United States Census Bureau (2021), Kentucky has a population of 4,509,394. The health care organization where the staff education project was held provides care for surrounding rural counties, along with those in the city in which it is located. This organization is overseen by a board, which includes chief executive officer, chief nursing officer, chief financial officer, and several medical doctors. Throughout the

last several years, the organization has strived to provide quality care to those who walk through their doors.

The health care organization is in a county that is ranked in the higher middle range of counties in Kentucky (Higher 50%–75%) in health outcomes according to the County Health Rankings and Roadmaps website (https://www.countyhealthrankings.org). With the statistics showing that there is still room for improvement in both health factors and outcomes, APRNs will be responsible for assisting in this development. APRNs are tasked with providing quality care for those residing in this and surrounding counties. The health organization has realized that continuing education for APRNs has great benefit and currently do provide some educational offerings. There is, however, no current educational offering for shingles. This project gives APRNs an opportunity to move forward with additional learning on shingles. This ultimately better prepared them to care for those in their community.

Role of the DNP Student

Health care is an ever-evolving concept. Through the changing of the health care culture came the introduction of APRNs into more interdisciplinary leadership roles, assistance in policy creation and engagement in scholarship (Faraz et al., 2020). This change also led to the extension of APRN education to include the Doctor of Nursing Practice (DNP; Faraz et al., 2022). The DNP student is tasked with the preparation for inclusion in professional settings and assisting in the creation of health advancement. Through the creation and execution of doctoral projects, DNP students are given the

opportunity to address a current issue in health care, research it, and work to help correct it.

Through working at the health care facility, I was able to experience the struggles of staying up to date on practice guidelines for disease processes. Shingles was one diagnosis that every APRN had encountered but did not have any recent education on. Through a facility review of charts, it was noted that there were several cases that had a delay in diagnosis due to symptoms not being recognized. It was this chart review that led to the creation of a staff education program on shingles. Incidentally, during the beginning phases of this project, my husband developed shingles on his face. Though two providers had seen him, his symptoms were not recognized and there was a delay in his treatment. Due to the shingles virus, he is still suffering with postherpetic neuralgia daily. This not so much created a bias but created a drive for ensuring that this does not happen to others. Nonetheless, to ensure that potential bias was addressed, this project focused on data collection. The motivation for this project was to ensure people are diagnosed and treated promptly. This was done through the education of those treating them.

Summary

There was a gap in practice at the project facility when it came to the dissemination of up-to-date information on shingles and their treatment. Kentucky, the location of the facility, has data showing room for improvement in their health outcomes and factors. APRNs are a part of improving these outcomes and factors. DNP students are in a unique position to assist in identification of gaps of practice and help close these gaps. This project proposed that through continuing education the APRNs knowledge

base could be increased on the subject of shingles, effectively assisting APRNs in not only increasing their knowledge but also allowing them to provide quality care.

In Section 3, I lay out the procedural guidelines steering the creation of this project. The sources of evidence, the steps in place to protect participants, data collection, and analysis of collected data will all be outlined. Through the collection and dissemination of information pertaining to shingles, the practice-focused question will be answered.

Section 3: Collection and Analysis of Evidence

Introduction

Shingles is a painful viral illness that stems from the reactivation of the varicella zoster virus that lays dormant in the body (Dooling et al., 2018). Millions of individuals are impacted by the shingles and sometimes-long-lasting complications from the virus (Dooling et al., 2018). APRNs are tasked with treating those affected by the virus. Within the project health care facility, there was no formal education on the diagnosis and treatment of shingles. Due to the lack of education, there was potential for delayed diagnosis and treatment. Through this project, education was provided for APRNs on recognizing, diagnosing, and treating those with shingles. This section presents the project practice-focused question and the plan for the collection, analysis, and reporting of the evidence to evaluate the effectiveness of this education program to increase learner knowledge on shingles assessment, diagnosis, and treatment.

Practice-Focused Question

In the project facility, a gap in practice was identified when a facility chart review noted a delay in shingles diagnosis 60% of the time, within a 6-month period. Due to differing presentations of the virus, education on assessment, diagnosis, and treatment may assist in closing this gap. The practice-focused question of the project asked whether an APRN staff education program on shingles identification and management could increase knowledge base of APRNs at the health care facility. The purpose of this project was to increase APRN knowledge through education. With the identification of the gap in practice, there was an opportunity for change. By creating a staff education addressing

the presentation of the virus, the assessment of those with shingles, the diagnosis, and the current recommended treatments this change can be realized. Participants in the education took a pre- and post-presentation assessment on their knowledge. This allowed for comparative evidence collection and analysis.

Sources of Evidence

In order to create the staff education, a literature review was conducted to gather up-to-date guidelines on shingles management. I searched multiple databases from the Walden University library, including CINAHL and MEDLINE. Google Scholar was also used to find peer-reviewed articles that discuss diagnosis and treatment of shingles. The gathered information was used to create the educational program and pre-post questionnaire using the ADDIE model. The ADDIE model is a five-fold framework that was followed for the instructional design process (Ab Latif & Mat Nor, 2020). Once the educational program was created, a pre and post course knowledge assessment was created to help evaluate any knowledge expansion for APRNs post course. These knowledge assessments have multiple questions pertaining to assessment, diagnosis, and best practice for treating shingles and aligned with the educational offering. Knowledge assessments were reviewed with several content experts, within the facility, for validity and feedback. The questionnaire for the pre-post data collection was developed by me and evaluated by the stakeholder group for content validity via the content validity index (CVI) range 0-1 and I-CVI. Results > 0.79 for an item was considered relevant. If the value was 0.70 to 0.79, the item needed revision. If the value is below 0.70, the question was deleted. Stakeholder group evaluation was completed after the project gained

institutional review board (IRB) approval. The pre and post educational course knowledge assessment collection of evidence was an appropriate way to measure increased knowledge. The purpose of this doctoral project was to educate APRNs on the assessment, diagnosis, and treatment of shingles. Through the gathering of up-to-date information and the utilization of that information to create an educational program there was a potential for increased knowledge for APRNs and an effective closing of the gap of practice.

Once IRB approval had been given, APRNs practicing at the selected health care organization were invited to participate in the educational offering. There were six total APRNs that invitations were extended to. These APRNs are all responsible for providing health care to patients in central Kentucky, including those with shingles. Their experience levels ranged from new graduate to over 10 years of advanced nursing practice.

The following procedural steps guiding the creation of this educational project were aligned with Walden University's DNP Staff Education Manual guidelines (n.d.). Prior to study initiation both Walden project IRB and facility approval was obtained.

1. The educational needs of APRNs regarding the training on shingles were identified. Through facility chart review, it was discovered that over 60% of shingles cases had a delay in diagnosis. It was also discovered that there was no current continuing education on shingles at this facility, leading to a gap in practice.

2. Research of the literature for relevant teaching materials was conducted and specific learning objectives that are measurable and reasonable for the project were formulated (Walden University, n.d.). Stakeholder evaluation took place to determine the appropriateness of the learning objectives. Once these objectives were devised, the educational program was created using PowerPoint presentation software.
3. APRNs were invited to the educational program, which took place at the health care facility. The program was discussed, and the participants were informed of implied consent. APRNs invited to attend the training on up-to-date education on shingles assessment, diagnosis, and treatment, utilized unique identifiers for the pre and post knowledge assessments offered at the program. These identifiers served as a proxy for increased knowledge and provide ethical protection of participants.
4. The evaluation of knowledge was based on comparison of the pre course and the post course participant knowledge assessments, completed anonymously. Participants were given a number, which was then written on their pre- and post-course knowledge assessments. The pre-presentation knowledge assessment was completed prior to the educational program and the post-presentation knowledge assessment right after the course. The numbers were used to ensure that the knowledge assessments belonged to the same individual. This evaluation allowed for a clear picture of the benefit of the project. These data were stored in a secure password-protected database. Any

missing data were excluded from the study. These data will be retained for 10 years.

Protection and security of participants and subjects are essential when conducting research. This project did not have any direct patient contact. Regarding the safety and security of the participants of this educational program, steps were taken to ensure anonymity. Participation in the program was voluntary. Consent was discussed with APRNs who attended prior to the educational program and the purpose of the project was clarified. The consenting process was conducted to ensure adequate time to discuss consent and ask questions if clarification was needed. All pre- and post-presentation knowledge assessments were deidentified to protect the participants. Data collected were stored on a private network managed by the health care organization. Any hard copy data were stored in a locked cabinet at the facility.

Analysis and Synthesis

This project focused on educating APRNs about assessment, diagnosis, and treatment of the shingles virus. This project evaluated information collected on pre course and post course knowledge assessments to assist in determining an increase in APRN knowledge. The knowledge assessments utilized multiple choice questions to calculate a percentage of correct answers. The same knowledge assessment was given after the educational course and the percentage of those correct answers were compared to the previous knowledge assessment. Participants were given code numbers to use instead of their names on pre- and post-presentation knowledge assessments to ensure anonymity.

Prior to the use of the pre/post knowledge assessment the stakeholders evaluated the questions. CVI is a measurement tool that represents the measured construct, and it is considered as essential evidence to support the validity of a measurement tool such as a questionnaire for research (Yusoff, 2019). Stakeholders reviewed the knowledge assessment questions and rate the validity of the questions. Questions resulting in a score of > 0.79 remained and were considered relevant. All other questions were revised or deleted depending on their scores.

Pre/post designs are often used when an intervention is applied between two time points (Estrada et al., 2019). To detect a reliable change, two approaches can be adopted: the average-based change approach (ABC) and the individual-based change approach (IBC; Estrada et al., 2019). The objective of ABC is to evaluate whether a group experienced a change, and the goal of IBC is to identify specific individuals who showed change (Estrada et al., 2019). If the percentage of correct answers increased after this project's educational course was completed, the conclusion of success or failure was determined. Furthermore, change can be evaluated between individuals and the group. This brings to light future ways of educating groups and individuals. The synthesis and analysis of the scores obtained from pretest and posttest proved improvement after the education training.

Summary

In Section 3, the practice-based question for this project was reviewed. The project question asked whether an educational course would increase APRNs knowledge base on shingles assessment, diagnosis, and treatment. Through the guidelines provided

by Walden University, a gap in practice was identified and a plan was formed to create a DNP project involving education on shingles. A literature review was conducted, and information gleaned was used to create a power point presentation, which was presented to the APRNs at the health care facility where this project took place. A pre and posttest knowledge assessment was given to the APRNs to help determine if there was an increase in knowledge after the educational intervention. The information was then synthesized and disseminated.

Section 4: Findings and Recommendations

Introduction

Shingles is a viral infection that impacts many people yearly. APRNs are among those providing care for patients afflicted with shingles. During a facility chart audit at the project health care organization, it was found that there was a delay in diagnosis of over 50% of the shingles cases. With this identified gap in practice, this doctorate project presented the opportunity to create a staff education program on shingles. The practice-focused question asked whether APRN knowledge of shingles could be improved through staff education. The purpose of this project was to increase APRN knowledge of diagnosis and treatment of shingles.

I created the educational program after conducting a literature review. Information was gleaned from Walden library resources including CINAHL, MEDLINE, and Google Scholar. Walden librarians aided in identifying key words to use in searching these sources. These words included: *shingles*, *herpes zoster*, *shingles treatment*, *shingles vaccine*, and *chicken pox*. Once literature was collected, the sources were reviewed to ensure that they were peer reviewed and written within 5 years.

Once the literature review was complete the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model was used to design the educational program and the pre/post knowledge survey. The five-fold framework of the ADDIE model covers all the steps of the instructional design process (Ab Latif & Mat Nor, 2020). In the analysis stage, the learning needs of the target learners are identified, the design stage considers how the target learners learn; in the development stage, teaching

materials are constructed, the next stage involves implementing the teaching and placing teaching materials in the teaching environment, and the final stage is evaluation of outcomes and performance (Ab Latif & Mat Nor, 2020). Stakeholders were polled to see what topics needed to be reviewed. They had to rank which was most important between diagnosis, treatment, and prevention. Diagnosis and identification were ranked the number one subject that needed to be addressed. This was followed by treatment and lastly prevention. The staff program was laid out to address these topics.

Findings and Implications

The staff education project allowed for the education of APRNs on shingles. There were several developmental stages. Once the staff education program was created, the pre/post knowledge surveys were reviewed for validity. There were three stakeholders and two content experts who conducted the validity assessment. The stakeholders included one clinical representative, one nonclinical representative, and one representative of the health organization. The content experts were both medical doctors who specialized in neurological disease. There were 10 questions total. For an item to be relevant, the question had to have a CVI > 0.79. If the value was 0.70 to 0.79, the item was revised. If the value was below 0.70, the question was deleted. Once the questions were reviewed, no question scored below 0.70. One question scored between 0.70 and 0.79. It was revised and once reviewed scored above 0.79. The questionnaire is in the Appendix.

The staff education program was a one-time event where APRNs took a pre-presentation knowledge assessment on shingles; they then were presented an educational

session on the diagnosis, treatment, and potential complications of shingles. The knowledge assessment was then repeated and compared to the pre-presentation assessment. Five APRNs participated in this project. Each was given a specific identification number from 1 to 5. These numbers coordinated with the number written on the pre and post knowledge assessment. The numbers were only known by me and the person receiving the assessment. This allowed for the comparison of scores before and after the presentation.

The participants were all family nurse practitioners. Their experience ranged from 18 months of practice to 13 years of practice. The average years in practice was 12.9. All participants had a master's degree, with two APRNs having their doctorate degree. The participants' ages ranged from 28 to 40. All participants live and work in central Kentucky.

The results of the pre and post knowledge assessment ($N = 5$) were based on a raw score of 1 point for each correct question. The score range was from 0 to 10 (100%). Though the results did not show large variants in knowledge, most likely due to the number of participants, they did however show some increase in knowledge between pre and post assessments (see Table 1). When reviewing the data, I found that the mean raw score of the pre knowledge assessment was 8.8 with a standard deviation of 0.75. The mean raw score of the post knowledge assessment was 9.8 with a standard deviation of 0.4. The standard deviation does not have a huge difference between the pre and post assessment questionnaires. This is due to the small number of participants. However, some knowledge can be gleaned through these results. With the standard deviation being

lower for the post assessment scores, this shows that the post assessments contained more correct answers than the pre assessment questionnaire. This can also be seen through the percentage increase between pre assessment and post assessment scores. A review of the data through percentages showed the mean pre-knowledge assessment was 88%, whereas the post-knowledge assessment mean percentage was 98%. This was a percentage increase of 10%. This means that on the post knowledge survey there was an increase in the information known to the APRN. The p-value was calculated at 0.017 which indicates a significant change between pre and post knowledge assessment scores.

Table 1

Comparison of Pre/Post Assessment Results (N = 5)

	Raw score		Percentage
Assessment	*M*	*SD*	*M*
Pre-assessment	8.8	0.75	88%
Post-assessment	9.8	0.4	98%

Recommendations

Through the data collection described in this section, the APRN knowledge did increase after the staff education. With this understanding, the health organization now has an outline of how to increase staff knowledge on certain topics. This growth in knowledge through education can assist in closing the gap in practice and assisting APRNs in expanding their expertise relating to shingles diagnosis and treatment. This has the potential to lead to more confident providers and better patient outcomes. This project is also adaptable. If the health organization has other noted gaps in practice, staff education could be used to close these as well. Additionally, the educational program can

be easily adapted to an online platform allowing for multiorganizational simultaneous use.

Strengths and Limitations of the Project

This project had strengths and limitations identified during the implementation phase. The strengths of this project included that all participants who completed the pre-presentation knowledge assessment also completed the post-presentation knowledge assessment allowing for more complete data collection. Also, this project was presented to APRNs with different levels of experience and knowledge. Because of this and the success of the project, the recommendations can apply to providers with any level of experience.

An obvious limitation of this project is the small sample size. In this project, five APRNs were involved in producing the data collected, which limits the ability to generalize results to larger groups. The other limitation was the short period of time that this project had. There is no way to continue to track whether the education made a significant future impact in the APRNs practices. If this is a program that the health organization decides to continue, these limitations can be addressed. Through this project, a staff education program was developed and presented to APRNs. Through this education, an increase in APRN knowledge was seen. This project could be utilized as a guide for future educational programs. Through education and up-to-date information on EBP, APRNs can provide quality care to their patients.

Section 5: Dissemination Plan

Introduction

With this project showing an increase in APRN knowledge on shingles, the next task is dissemination of information. At the completion of this project, a report will be distributed to the stakeholders of the health organization. This will allow for a discussion on the potential continuation of the program and even the potential for adaption of the staff education to other topics. There will be a copy of the presentation saved at the health organization and made available for new hires, giving them the opportunity to review the education information prior to providing patient care.

Analysis of Self

Education of providers and patients is a passion of mine. I have often thought, even prior to working in health care, that if providers explained things to patients in a way that was comprehended, patients would be motivated to make changes. What I have learned through my own practice is that providers' knowledge can be limited on certain subjects. Health care and guidelines quickly change with the introduction of EBPs. Due to this, continuing education is a necessity. Staff education can also be a tool used to promote best practices.

This project has allowed me to grow as a practitioner, becoming more confident in executing projects, talking with peers, and providing solutions to problems. As a scholar, I had the opportunity through this project to learn how to research, present, and analyze data. As a project manager, I was given the opportunity to work with others in an organizational setting. This was a great learning experience because of the interaction

with non-health care providers who were stakeholders in the project. I learned to hone my communication skills and how to participate in impactful communications. There were several challenges throughout this project. One was time management. Through this experience, I had to develop better time management skills. There was also a challenge of making the educational offering available when APRNs could attend. Through the entirety of the project, I have been able to develop skills that will continue to assist me throughout my career.

Summary

This doctorate project focused on staff education. A facility chart review pointed to a gap in practice when it came to the diagnosis and treatment of shingles. The practice-focused question addressed in this project, asked whether APRN knowledge of shingles could be improved through staff education. Five APRNs took part in a pre-presentation knowledge assessment, an educational presentation, and a post-presentation knowledge assessment. The data were reviewed, and scores compared between the pre and post assessment answers. There was a noted increase in knowledge when the answers were compared. This was a small sample size, so using this information to generalize would not be recommended. However, this does point to staff education as a tool to assist in increasing APRN knowledge. Through education, APRNs were able to increase their knowledge, contributing to social change via improved care.

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Appendix: Knowledge Assessment Questions

By Kyla Gilbert

1. 55-year-old female presents to her primary care provider with a complaint of pain in her mid-back. She states the pain has been present for 48 hours and she cannot find relief. She describes the pain as burning and only affecting her left side. She states it wraps around her ribs and causes her pain with breathing. On closer inspection the patient has small fluid filled blisters in the same area as she describes the pain. What alerts you to the fact that she may have shingles (Perry, 2022)?
    a. Acute pain
    b. Unilateral pain and blisters
    c. Description of burning pain
    d. Patient's age
    e. All of the above

2. Using the same scenario as above, is it appropriate to start antiviral treatment (Perry, 2022)?
    a. Yes, it is within 72 hours of symptom start
    b. No, it is over 24 hours of symptom start
    c. Yes, it does not matter how long the patient has had symptoms
    d. No, antiviral therapy has not been proven to be helpful

3. A 45-year-old immunocompromised patient presents to his primary care provider with a complaint of left sided headache. Patient states it started three days ago and does not ease with OTC medications. Patient reports no nasal drainage or cough. Patient states he has no sinus pressure. Patient has no vision issues. Patient states "my skin feels tight on the left side of my forehead". What is important when doing the physical assessment of the patient, to assess potential facial shingles (Carter, 2020)?
    a. Check for postnasal drip
    b. Check pupils for reactivity
    c. Check hairline for blisters
    d. Check for facial symmetry

4. A 67-year-old female presents with shingles. Patient states that the burning pain is unbearable. Patient states she gets no relief from OTC medications. Patient states she is unable to sleep or do daily activities due to pain. What is the most effective at relieving shingles related pain (Gross et al., 2020)?
    a. Opioids
    b. Anticonvulsants
    c. NSAIDS
    d. Topical solutions

5. A 76-year-old male who developed shingles 3 months ago has no visible rash but states that he has continuing pain in the same area his shingles were originally. Patient states it is an irritating pain that keeps him from being able to ADLs. Patient states that he cannot fully bathe or shower due to the pain. The condition of lingering pain after a shingles breakout is called what (Gross et al., 2020)?
    a. Post shingles syndrome
    b. Neuropathy
    c. Postherpetic neuralgia
    d. Viral Neuritis

6. Using the same scenario listed in question five, you know that nerve damage and pain from a shingles outbreak can last as long as (Gross et al., 2020)?
    a. 6 months
    b. 12 months
    c. 48 months
    d. Permanently

7. Again, referring to the scenario in question 5, what are some options that may assist in relieving the patient's symptoms (Gross et al., 2020)?
    a. Nerve blocks
    b. Medications
    c. Compounded topical solutions
    d. All of the above

8. A 58-year-old female is concerned about contracting shingles after her sister developed them. She would like to know if there are any options to help prevent shingles (Hanson, 2021)?
    a. You educate her about vaccinations
    b. You educate her that there is no way currently to prevent the shingles
    c. You educate the patient that shingles are contagious, and she should distance herself from her sister
    d. Both A & C

9. A 22-year-old male patient presents with a burning sensation on one side of his torso. On exam the patient has small blisters forming along the painful area. The rash appears to be shingles however the patient states he was vaccinated against the chickenpox and never had the virus. You as a provider know that…. (Rafferty et al., 2018)?
    a. The patient was vaccinated against the chickenpox, he cannot have shingles.
    b. The patient is too young to have shingles,
    c. Even though the patient was vaccinated against the chickenpox, there is still a chance the patient may develop shingles.
    d. Shingles would affect both sides of the patient's body

10. A 67-year-old female who was diagnosed with shingles 6 months ago she was treated with antivirals and symptoms resolved. She has recently been under a significant amount of stress, and she has noted new blisters forming on another area of her body. She states that these blisters burn like her previous shingles rash. When talking to the patient you remember that…(Carter, 2020)?
    a. Stress can increase the likelihood of a shingles outbreak due to weakening immunity.
    b. You cannot have shingles twice.
    c. Some people can have multiple occurrences of shingles.
    d. Both A and C