Project Implementation of an Influenza Educational Pathway Among Patients in a Family Practice Setting

By

Rosaline V. Kamara

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Approved: Dr. Rachel Borton, PhD, FNP-FPA 8/7/2020
_____
(DNP Project Team Chairperson name, credentials & date)

Approved: Paula Kamara, MPH (Mentor), 8/7/2020
_____
(DNP Project Team Member name, credentials & date)

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Dedication

To my family and friends, thank you for encouragement, support, and love. You inspire me to shoot for the stars and never give up on my dreams. I love you to the moon and back.

Abstract

Background: Influenza (flu) can be a severe infection that may result in detrimental outcomes such as death, illness, and hospitalizations for patients at family practice clinics. Despite efforts made by family practice practitioners, influenza (flu) vaccination rates have remained small, possibly due to lack of vaccination knowledge and negative perceptions regarding vaccination safety and efficacy. Evidenced-based educational pathways can help increase knowledge and negative perceptions about influenza (flu) vaccination. The purpose of this project is to increase influenza (flu) vaccination knowledge and vaccination rates among patients at Reliance Family Care clinic during the influenza (flu) season.

Project Design: Evidenced-based educational materials such as videos, posters, pamphlets, and brochures were used to educate patients of Reliance Family Care in order to increase their knowledge and provide them with readiness to change their perceptions towards influenza (flu) vaccination. Patients were asked to complete two 10 item questionnaires in order to analyze vaccination knowledge and perception change before and after education.

Results: Overall, major improvement was identified in knowledge as well as perception change regarding influenza (flu) vaccination after education when compared to before education. Also, 92% of participants stated that they are very likely to receive influenza (flu) vaccination in influenza (flu) season. Many (96%) participants stated that it is very important to educate patients about the influenza (flu) and the influenza (flu) vaccine and found the educational pathway to be extremely beneficial.

Conclusions: Education is an effective strategy for increasing flu vaccination knowledge, receptiveness, and ultimately vaccination rates. Patient education is crucial for promoting healthy

and preventative behavioral practices as well as providing patient empowerment and efficacy in adopting healthy lifestyles.

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Chapter I

Introduction

Influenza (flu) remains to be potentially severe. Nonetheless, it is a preventable infection that creates additional health problems for patients in a family practice clinic. According to the Centers for Diseases Control and Prevention (CDC) (2018), Influenza (flu) was linked with over 48.8 million illnesses, more than 22.7 million medical visits, 959,000 hospitalizations, and 79,400 deaths during the 2017–2018 influenza season. Despite attempts made by health care providers in family practice clinics to administer influenza (flu) vaccines to eligible patients, literature evidence demonstrates that influenza (flu) vaccine rate consistently remained under 30% (Sagor & AlAteeq, 2018). In addition, one study demonstrated that patients refused flu vaccination because of lack of knowledge and fears concerning vaccine effectiveness and safety (Sagor & AlAteeq, 2018). Studies have shown that lack of knowledge has been associated with a low influenza (flu) vaccination rate among patients during the flu season (Schmid, Rauber, Betch, Lidolt, & Denker, 2017). Evidence-based educational activities expand patient knowledge about the importance of influenza (flu) vaccination and may dispel myths and misconceptions about vaccine safety and efficacy.

Background and Significance

The CDC Advisory Committee on Immunization Practices (ACIP) (2019) recommends the influenza (flu) vaccination for all persons six months of age and older as the primary and most essential step in protecting against the influenza (flu) disease. Moreover, influenza (flu) vaccination has significantly positive impact on socioeconomic burden due to a decrease in lost work and school days. Despite illnesses and deaths associated with influenza (flu) disease and the CDC recommendations of the influenza (flu) vaccine safety, family practice clinics fail to

reach the recommended 80% flu vaccination coverage set by Healthy People 2020 (Healthy people 2020, 2019 & CDC, 2019). Misconception about vaccine safety and efficacy may be the main obstacle that causes patients in a family practice clinic to refuse influenza (flu) vaccination (Leung et al., 2017). Overrating the risks of severe adverse effects due to influenza vaccination or underrating the occurrence of severe complications due to influenza are found to be key barriers to influenza vaccination among patients (Leung et al., 2017). Misconceptions regarding the risk and severity of influenza (flu) and its vaccine could be a reason why most patients do not participate in immunization programs that offer free vaccines or at low cost. Therefore, patient education may be an essential tool to empower patients with the correct information about influenza (flu) vaccination. Family practice clinics take care of patients of all age groups. Consequently, if family practice clinics cannot reach the influenza (flu) vaccination target rate, it would impact all age groups of the nation's vaccination rate (CDC, 2019). The lack of influenza (flu) immunization can result in complications such as death, disabilities, lost wages, and hospitalization (Khoury & Salameh, 2015 & Bödeker et at., 2015).

Influenza (flu) vaccination among eligible patients in family practice clinics is vital to population health. Influenza (flu) offers protection to patient family, workplace, and community and makes influenza (flu) virus difficult to spread from person to person. A research study conducted by Sagor and AlAteeq (2018) showed that there is a relationship between patient knowledge regarding the influenza (flu) vaccination and the number of flu vaccines administered during the flu season in a family practice clinic. Also, Berkhout et al., (2018) discovered that educational interventions proved useful in providing information about flu vaccination to target patients. Educational interventions include organizing a flu fair, displaying posters, giving

brochures and pamphlets to patients, and playing television advertisements in waiting areas (Berkhout et al., 2018).

Needs Assessment

In April 20l9, Ms. Tina Jordan, a nurse practitioner at Reliance Family Care, expressed concern about the need to increase influenza (flu) vaccination rate among the patient population in her practice. This concern was discussed in one of their staff meetings, which she invited this DNP student to attend. Ms. Jordan facilitated the meeting. During the meeting, she went over the vaccination data of the practice in comparison with the national data. Next, she reminded the staff about the clinic's vaccination goal of 90% vaccination rate of all patients seen in the clinic during the flu season. Furthermore, she admitted that the clinic's 45% vaccination rate fell below the target rate in 2018. Ms. Jordan observed the impact of the clinic's low influenza (flu) vaccination rate through the increased number of patients treated for the flu during the influenza (flu) season. To combat the high rate of flu cases seen in the clinic, Ms. Jordan and this author have committed to launching an education program to increase the knowledge of the patients regarding their misconceptions about influenza (flu) vaccination.

For this project, the population will include all patients seen at Reliance Family Care. Reliance Family Care was chosen because it is a well-established clinic that provides care to a high number of families in the McDonough and Locust Grove areas in Atlanta, Georgia. Clinic data demonstrates that 50% of patients refused influenza (flu) vaccination during the influenza (flu) season in 2018 making their clientele the most unvaccinated patients in the community. According to Ms. Jordan, this alarming rate is due to a knowledge deficit about influenza (flu) vaccination. Moreover, the implementation of educational strategies to increase flu vaccination

would not only improve patient outcomes, but would decrease days lost from work or school as a result of contracting influenza (flu). The strategies will also help Reliance Family Care to reduce the spread of the influenza (flu) virus in the community. The World Health Organization (WHO) and the U.S. Center for Disease Control and Prevention (CDC) recommend that individuals aged six months and older should be encouraged to be immunized against influenza in an effort to increase protection to more people (Khoury & Salameh, 2015). A community of sick people would result in socioeconomic burden due to lost wages and productivity (Khoury & Salameh, 2015).

The proposed project would benefit the clinic by increasing knowledge of patients about the influenza (flu) vaccination, and possibly increasing the number of patients vaccinated against the flu virus during the influenza season. Also, the positive outcomes associated with the project can be transformed into practice changes in the clinic which can be beneficial to the patients, local community, the state, and national level. Moreover, other family practice settings can use disseminated project results to increase patient knowledge regarding influenza (flu) vaccination. The strength, weakness, opportunities, and threats (SWOT) analysis is an important tool that would helped to identifying key focus areas that would determine success of the project. The project's strengths include evidenced-based educational interventions, and facility motivation to increase influenza (flu) vaccination rate from the previous year's record. In addition, increasing the vaccination rate can reduce hospitalization and deaths associated with influenza (flu) illness. The large sample size can increase the number of people educated about the influenza (flu) vaccine. Some of the weaknesses include the potential to not effect a change in behavior due to resistance. Therefore, some opportunities that can help in promoting the project are new educational materials obtained from the Centers for Disease Control and Prevention to help

dispel some of the misconceptions about influenza (flu) vaccination. Consequently, possible threats to the success of the project can be the scarcity of the influenza (flu) vaccine during the flu epidemic. New strains of influenza (flu) would cause the current influenza (flu) vaccine to be ineffective. Also, negative advertisements from the news media featuring exaggerated influenza (flu) side effects can cause the patients to refuse the flu vaccine. The complete SWOT analysis of the proposed project is shown below.

SWOT Analysis

<table>
<tr><td colspan="2">Objective: To increase the seasonal influenza (flu) vaccination rate in a family practice clinic through education.</td></tr>
<tr><td colspan="2">Internal Factors</td></tr>
<tr><td>Strengths (+)</td><td>Weaknesses (-)</td></tr>
<tr><td>• Planned interventions are evidenced-based.
• Facility’s high desire for improvement in the vaccination rate from previous year’s record.
• Potential for reduced transmission rate of influenza
• Potential for reduced hospitalization due to influenza
• Potential for reduced death rate due to influenza</td><td>• Behavioral change can be difficult to maintain, and it takes time
• Potential for no change in behavior
• Potential for no change in vaccine rate</td></tr>
</table>

• Potential for decreased absenteeism from work and school • Large sample size	
External Factors	
Opportunities (+)	**Threats (-)**
• Improved patient knowledge about influenza vaccination • New education materials from CDC about influenza vaccination • Improved safety of vaccines • Improved vaccine efficacy	• Possible vaccine scarcity during epidemics • Early influenza season • News media coverage about adverse effects of the flu vaccine • New influenza strains during the flu season • Negative advertisement by the media about vaccine safety • Cultural and religious beliefs
Evaluation of Objective: Strong data, community support, a high desire, and motivation from the facility will help promote change to minimize weaknesses and threats to improve the rate of influenza vaccination and promote wellness.	

Problem Statement

The problem addressed by the project is the need for educational strategies to increase influenza (flu) vaccination knowledge and adherence among patients in a family practice clinic. Several research studies have validated education as an evidenced-based practice for increasing influenza (flu) vaccination knowledge among patients in family practice settings (Abu-rish, et.al., 2016). The lack of knowledge regarding influenza (flu) vaccination can result in a decreased rate of influenza (flu) vaccination, which can increase the number of patients treated with influenza (flu) in the clinic setting. Similarly, lack of knowledge about influenza (flu) vaccination safety and effectiveness and the importance of vaccination to protect others from contracting influenza (flu) are factors that may cause patients to refuse influenza (flu) vaccination (Abu-rish et al., 2016). Education plays a vital role in providing accurate information about i influenza (flu) vaccination to patients. Educating patients around how influenza (flu) vaccination works, its side effects, and differences between the common cold and the flu can help clarify flu vaccination misconceptions. In their study, Basabrain et al. (2017) held an influenza (flu) vaccine fair coupled with an educational campaign at a family practice clinic to clarify the misconceptions surrounding influenza (flu) and vaccination. The results showed that 68% of the patients received the vaccine after education, compared to only 32% of patients before education (MacDougall et al., 2015).

Project Purpose

The goal of this project is to increase flu vaccination knowledge, awareness, and adherence during the influenza season among patients at Reliance Family Care clinic. Identifying barriers that may prevent patients from receiving influenza (flu) vaccination, and using that information to implement educational strategies may increase the vaccination rate. Patient outcomes expected from launching this project include improved patient vaccination rate. Promoting influenza (flu) vaccination through implementation of this project will require collaboration from both patients and the clinic staff.

Project Objectives

Objective 1: To develop and implement education strategies, increase patient knowledge, and focus on misconceptions about influenza (flu) vaccination during the influenza (flu) season.

Objective 2: To evaluate knowledge of patients before influenza (flu) education and after influenza (flu) education to determine if they want to receive influenza (flu) vaccination.

Clinical Question/PICOT

At the Reliance Family Care clinic, there is an increase in the number of patients being treated for influenza during the influenza (flu) season. Most patients have reported that they refuse influenza vaccination because of the perception that they will acquire influenza (flu) even when vaccinated.

The PICOT question being explored for this clinical problem is “For patients in a family practice clinic, how do attitudes towards flu vaccination before education compare to after education?”

P stands for population, which represents patients in a family practice clinic.

I stands for intervention, which represents education.

C stands for comparison. It represents comparing attitudes before and after education.

O stands for outcome, which the change in the perception about the flu.

T stands for time, which represents the flu season.

Congruence with Organizational Strategic Plan

The patients' lack of knowledge about influenza (flu) vaccination resulted in a high volume of patients treated for influenza (flu) at Reliance Family Care clinic. According to Ms. Tina Jordan, the facility is embarking on implementing evidenced-based strategies to increase vaccination rate among its patients in order to reduce the number of flu cases. For this purpose, the proposed project provides relevant evidenced-based education to the patients of this facility to increase their knowledge about influenza (flu) vaccination. Research studies focusing on education to increase knowledge about influenza (flu) vaccination found a positive impact on the attitudes of patients particularly in a family practice setting (Jarrett, Wilson, O'Leary, Eckersberger, &Larson, 2015). Therefore, educational interventions may increase knowledge about influenza (flu) vaccination and ultimately promote vaccine practices among patients.

Search Strategy

The electronic databases accessed to perform a comprehensive literature review for the project include: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, PubMed, EBSCO, Ovid Plus, and Cochrane Library. Moreover, key search terms included *influenza vaccination AND, influenza virus, flu vaccine uptake AND, barriers to flu vaccination, AND influenza vaccine education*. Boolean terms, such as and/or, were not used in the search to help find relevant articles related to project topic.

Research articles published between 2015 and 2019 were eligible for inclusion and met the five criteria levels (I- V) of the evidence pyramid. Articles from the last five years were used because flu vaccination, barriers to vaccination, and strategies to increase vaccination rates change every year, and articles need to be current to provide the most useful information. The initial search generated 32 scholarly articles that were relevant to the project. A total of 22

scholarly articles were selected. Abstracts, dissertations, electronic media, and unpublished research were excluded from the search.

Synthesis of Evidence

Flu Vaccination Barriers. A comprehensive review of the literature demonstrated that low vaccination rates of influenza (flu) vaccination is attributed to a number of barriers such as a fear of side effects, cultural or religious beliefs, and lack of knowledge about the vaccine itself (Alqahtani, Althobaity, Aboud & Abdel-Moneim, 2017; Yeung, Lam, & Coker, 2016; Arriola et al., 2015; Bertoldo, Pesce, Pelullo, & Di Giusepple, 2019). Various literatures have demonstrated how knowledge of influenza (flu) vaccination increases awareness among patients thereby changing behaviors and decreasing risky health behaviors such as refusing the influenza vaccine (Berkhout et al., 2018; Bertoldo et al., 2019 ; Casalino et al ., 2018 ; Worasathit et al., 2015). Primary reasons stated by patients for declining influenza (flu) vaccination included thinking that vaccination can cause influenza (flu), concern about side effects, and not believing the vaccine will prevent the illness (Schmid et al., 2017; Arriola et al., 2015; Yeung et al., 2016). Personal beliefs and patient preferences for receiving influenza (flu) vaccines are impacted by past experiences with vaccinations, as well as opinions and advice from friends, family, and trusted community members (Ma et al., 2018; MacDougall et al., 2015; Sagor & Alteeq, 2018; Alqahtani et al., 2017 ; Yeung, Lam, & Coker, 2016; Schmid et al., 2017). Patient awareness that vaccination is beneficial can make them more likely to receive vaccination, whereas negative experiences or myths from others discourage vaccination (Ma et al., 2018; MacDougall et al., 2015; Sagor & Alteeq, 2018; Alqahtani et al., 2017).

Educational Interventions. Educational interventions to increase influenza (flu) vaccination rate include educational posters, pamphlets, and television ads placed in waiting areas of clinics (Goodman, Taksler, Schramm, & Rothberg, 2015; Bodeker, Remschmidt, & Wichmann 2015; Thomas, & Lorenzetti, 2018; Casalino et al., 2018). Similarly, a recommendation for increasing influenza (flu) vaccination is face to face teaching with patients through the organization of an influenza (flu) awareness day at family practice clinics (Wong et al., 2016; Worasathit et al., 2015; Ma et al., 2018; Gazibaru et al., 2019). While rates of flu vaccination differed significantly in different family practice clinics, a lack of knowledge regarding the importance of flu vaccination is one main reason patients refuse vaccination (Berkhout et al., 2018; Bertoldo et al., 2019 ; Casalino et al ., 2018 ; Worasathit et al., 2015). Multiple literature concluded that targeted education to dismiss myths and change patients' perceptions about influenza (flu) vaccination should serve to increase knowledge and raise awareness (Goodman et al., 2015; Wong et al., 2015; Worasathit et al., 2015; Jones et al., 2015; Leung et al., 2015). Every patient who is successfully educated about influenza (flu) vaccination, and shares their story has the potential to facilitate a change of perception about influenza (flu) vaccination (Abu-Rish et al., 2016; Alqahtani et al., 2017; Gazibara et al., 2019; Ma et al., 2018; Sagor et al., 2018). Several literature studies found that it is essential to address patients' concerns about possible side effects, and interaction with other drugs by providing pamphlets and posters in examination rooms that are translated in both English and Spanish (Goodman et al., 2015; Wong et al., 2015; Worasathit et al., 2015; Jones et al., 2015; Leung et al., 2015).

Systems-Based Interventions. Multiple systems-based interventions to improve knowledge, awareness, and perception about influenza (flu) vaccination among patients include dissemination of information via posters, mass mailings, fliers, newsletters, meetings, lectures,

presentations, and videos (Goodman et al., 2015; Wong et al., 2015; Worasathit et al., 2015; Jones et al., 2015; Leung et al., 2015).

Moreover, patient education and recommendations for vaccination can address misconceptions, eliminate vaccine-related concerns, dispel myths, and may eventually increase the chance of patients receiving the vaccines (Goodman et al., 2015; Wong et al., 2015; Worasathit et al., 2015; Jones et al., 2015; Leung et al., 2015).

Finally, promoting interventional activities such as having a vaccination day or vaccination fair may provide opportunity for incorporating components of other interventions such as presentations, fliers, and free vaccination (Goodman et al., 2015; Wong et al., 2015; Worasathit et al., 2015; Jones et al., 2015; Leung et al., 2015). The clinic can raise awareness about the event by inviting all patients to attend and placing flyers at local businesses and on local media outlets. Moreover, promoting health events such as flu fairs provide an opportunity for community engagement and dialogue, where local leaders and residents address the health concerns in their community. Educating communities empowers them to tackle the barriers that prevent them from modeling good health practices such as participating in seasonal influenza (flu) vaccinations.

Conceptual or Theoretical Framework.

Health Belief Model (HBM). The misconceptions, attitudes, and beliefs of the patients in the family practice clinic are the main reasons why they refused to take the influenza (flu) vaccine. The Health Belief Model (HBM) is identified as an option for achieving optimal behavior change by targeting perceived barriers, benefits, self-efficacy, and threat (Jones et al., 2015). As a result, HBM is chosen as a framework to guide this project because it is designed towards changing the influenza (flu) vaccination misconceptions, attitudes, and beliefs of patients seen at Reliance Family Care clinic. Knowledge of common attitudes and beliefs held by patients at Reliance Family Care help narrow the educational pathways. In addition, information can be conveyed via television advertisement, holding an influenza (flu) fair, and providing educational brochures and pamphlets in waiting areas of the clinic. Ultimately, these strategies aim at increasing awareness of influenza (flu) as well as encouraging vaccination by stressing benefits of the influenza (flu) vaccination, removing vaccination barriers, and increasing patient opinions of their own ability to get vaccinated (Jones et al., 2015).

Chapter II

Methodology

Project Design

The quality improvement project (QI) is an evidenced based practice (EBP) project that involves developing and implementing an influenza (flu) educational pathway for patients, and analyzing the patients' influenza (flu) vaccination knowledge and perception before and after the intervention to determine if there was a change. Various educational materials such as brochures, pamphlets, posters, and videos are used to increase the knowledge of patients.

Setting

The project implementation location is at Reliance Family Care in McDonough, Georgia. McDonough is a city in the Atlanta metropolitan area with population size of 25,782 (U.S. Census, 2018). Providers in the practice include one medical doctor (MD) and three nurse practitioners (NP). Additional staffing include three medical assistants (MA), one phlebotomist, and four front office staff. The practice setting for the QI project is a busy family practice clinic that sees close to 2,000 patients monthly.

Population

The average number of patients seen per day is 25-30 for the MD and 17-20 for the NPs. Patients are between the ages of five and 80 years old. Participation in the project is voluntary and it includes all patients regardless of gender, race, religion, immigration status, health condition, or nationality. Eligible participants are those registered at the clinic and are 18 years and older. Participants should also be proficient in English and have literacy at a fourth-grade level.

Data Collection Tools or Instruments

The educational pathway will be comprised of pamphlets, brochures, posters, and a five-minute video, which will discuss the importance of receiving the influenza (flu) vaccine, how to recognize influenza (flu) signs and symptoms, the risks and side effects associated with influenza (flu) vaccination, myths about the influenza (flu) vaccine, and vaccine efficacy. Educational materials will be presented in the waiting area on a day in the week with the highest patient volume over a two-week period. While patients wait for medical examination, they will be given a project information form (Appendix A). They will then complete a pre-educational survey (Appendix B) to test their knowledge about the flu and flu vaccine which will be designed by the researcher. Thereafter, the educational pathway will be implemented. Upon concluding their appointments with either the MD or NPs, another researcher designed post-educational questionnaire (Appendix C) with a Liker-type scale is completed to evaluate the patients' perception about the flu and the flu vaccine after receiving the educational intervention.

Project Plan

The QI project is developed using evidenced –based educational materials to increase flu vaccine awareness for patients at Reliance Family Care. Various educational materials such as videos, posters, pamphlets, and brochures approved by the clinic and obtained from the CDC website are used to provide the patients with the readiness to change their attitudes towards the flu vaccine (Appendix D & E). According to Thomas and Lorenzetti (2018), education eliminates barriers to flu vaccination.

Implementation of this project involves setting aside two days in the week that are high patient volume days as flu awareness days. On those days, a five-minute video about the importance of the flu vaccine is shown to patients after check-in and while they await their health examination in the waiting area. The project investigator will give a five-minute review of

information in the video and other information about flu vaccination listed on CDC handouts will be given to participants to take home. Posters written in Spanish and English are displayed in examination rooms. Pre-educational questionnaires are distributed by clinic staff to assess patient knowledge before education. A post-educational questionnaire is given to assess patient knowledge after education. Patients will be given pamphlets and brochures to take home. The outcomes measured are immunization status of patients before and after education. To determine project success, pre and post-educational evaluation of education received should be determined by a percentage in an increase of knowledge awareness via completion of the post-educational questionnaire. Educational materials used for the project are easily and readily available at the CDC web site as a resource for continued use to educate patients on influenza (flu) and influenza (flu) vaccination thus allowing for the sustainability of the project. The intervention is conducted at the facility and with assistance from staff. No direct costs are associated with facility meeting room uses or for the time and salary costs for staff which can help sustain the project. Paper and printing expenses are the only foreseeable direct costs for this project (Appendix J). Periodic follow up coordinated by the project investigator with the clinic providers with recommendations for educational materials serves as a way of promoting project sustainability.

Data analysis

The pre and post educational questionnaires will be analyzed in order to assess if there was an increase in vaccination knowledge, and if the educational intervention promoted a change in perception towards the influenza (flu) vaccination. The change in knowledge awareness is presented by the percentage of questions that patients scored correctly on the pre-educational questionnaire compared to the post-educational questionnaire. Also, vaccination perception will be represented by the percentage of patients who state a change in the perception towards the flu

vaccine after receiving the educational pathway. This helps determine the effectiveness of the educational innervation in increasing patient vaccination knowledge and perception. Descriptive statistics will also be used to analyze the demographic characteristics of the clinic (Appendix F).

Institutional Review Board (IRB) /Ethical Issues

The facility used for the implementation of the project does not have an Institutional Review Board (IRB). Instead, a letter of support was obtained from a Reliance Family Care administrator that was also submitted to Bradley University Committee on the Use of Human Subjects in Research (CUHSR). Also, approval will be obtained from the Bradley University CUHSR as an exempt study. A Collaborative Institutional Training Initiative (CITI) certification is completed prior to beginning of the project. The responsibilities related to human subject protection include the adherence to the basic ethical principles, which are respect for persons, beneficence, and justice. The survey tools contain no personally identifying data. No risk of harm to the patients who participate in the project assures the principle of beneficence. The principle of beneficence is also promoted by increasing the patients' knowledge about influenza (flu) vaccination which results in improved vaccination rates. Finally, the principle of justice is guaranteed as all patients in the clinic are invited to participate. The risk of unfairly including or excluding patients based on any attribute was not included in this project.

Chapter III

Organizational Assessment and Cost Effectiveness Analysis

Organizational Assessment

The clinic is opened six days a week, sees approximately 2,000 patients in a month and has resources to provide mass vaccination if patients would accept influenza (flu) vaccination. The clinic accepts everyone that walks in regardless of insurance coverage as it also welcomes uninsured patients with considerable discount. The goal of this facility is to see the community improve their health through healthy habits and to seek care as soon as they notice any change in their health status. Hence, its mission and vision clearly states "working with the community to reduce morbidity and mortality through disease prevention and early detection of life-threatening conditions". They work in collaboration with the paramedics, firefighters, and the hospitals in the community to enhance early detection of diseases and prompt treatment to avoid worsening of health condition. High patient satisfaction rates and trust the community has for clinic services may help promote successful increase of influenza vaccination rate among patients. The computer system is user friendly, and the use of information technology to reach members of the community gives an added benefit.

Reliance Family Care's goal and mission of disease prevention and health promotion aligns with this project's purpose. Increasing influenza (flu) vaccination knowledge, awareness, and adherence using educational pathways may help increase the vaccination rate at Reliance Family Care. For example, patient awareness of the severity of influenza (flu) infections promotes vaccination and prevents flu related mortalities and morbidities. Also, knowledge of benefits of the influenza (flu) vaccination promotes healthy behaviors such as partaking in seasonal influenza (flu) vaccination. Overall, an increase in vaccination rate may improve overall

health outcomes and prevent further health complications among patients at Reliance Family Practice.

Cost Effectiveness Analysis

The resources required to implement this project are basic and total project cost is $230 (Appendix J). Educational materials are obtained from the CDC website free of cost. Existing patient waiting areas are utilized and the presentations are scheduled during clinic hours. There is no cost incurred during those times. The clinic staff support the project and agree to assist with project activities free of charge. The only significant resource is travel time, printing supplies for educational materials, and cost of gas to and from the site. Overall, the cost is minimal and it will not have any effect on implementing the project.

Chapter IV

Results

Analysis of Implementation Process

This is a quality improvement project which uses evidenced-based educational materials to increase influenza (flu) vaccination awareness and receptiveness of patients at Reliance Family Care. Two days with the highest patient appointment volumes were designated "Flu Awareness Days". Patients were made aware of these days one week prior to the dates, the day before the dates, and on the scheduled dates via e-mail and text message.

After checking in with front staff, patients were given the project information form as well as the pre-educational survey and were asked to sit at a designated portion of the waiting area. The project investigator told patients to carefully read the project information form, encouraged them to ask any questions they may have, and asked them to give a verbal consent before completing the pre-educational survey. All questions and concerns were also addressed by the project investigator. Upon completion of the pre-education survey, the patients were asked to return the survey to a secluded portion of the waiting area and were then shown a five-minute educational video. Patients were then given a five-minute post-video review session to rereinforce key information discussed in the video and other influenza (flu) vaccination information listed on the CDC handouts that patients will take home. Patients were next taken to their appointments and brought back to the waiting area following their appointments to complete the post-education survey. Patients were given handouts from the CDC to take home as they returned their survey.

Patient privacy and confidentiality was maintained as surveys bore no identifiable information. To maintain anonymity, patients were asked to not write any personally identifiable information on the survey. Patients were also assured that participation was voluntary and were

informed of their right to withdraw at any time without fear of retaliation in any form. All patients were invited to watch the educational video and were given CDC handouts regardless of survey completion. The pre-education and post-education surveys were analyzed to evaluate patient perception and knowledge of the influenza (flu) and the influenza (flu) vaccination before and after education.

Overall, the implementation process followed initial implementation plans. Flexibility and teamwork were key to successful implementation process and was the most important lesson learned. Clinic staff members sent event reminders to patients and adjusted their normal schedule to ensure the implementation process ran smoothly by directing patients to the appropriate sections of the waiting area for project activities.

Analysis of Project Outcome Data

Fifty Reliance Family Care patients participated in the project and all completed both the pre and post educational survey, for a response rate of 100%. Age range for patients within the sample is 18-70+ years old, with most (36%) being between the ages of 40-49 and the large majority (90%) being under the age of 60 (Appendix F). The sample racial/ethnic make-up includes 22% Asian American, 34% Black or African American, 32% Hispanic or Latino, and 12% white (Appendix F).

Pre-education Vaccination Knowledge and Perception. A large majority (78%) of patients did not know the minimum age healthy people should receive influenza (flu) vaccination and slightly over half (52%) did not know how often influenza (flu) vaccination should be received (Figures 2 &3; Appendix G). Forty percent of patients answered that influenza (flu) vaccination can cause influenza (flu), and 64% of patients did not know that influenza (flu) can

be a life-threatening infection (Figures 4 &5; Appendix G). A majority (76%) of patients did not know what causes influenza (flu) (Figure 6; Appendix G).

Post-Education Vaccine Knowledge and Perception. After receiving the educational pathway consisting of a video, review session, and handouts, patient responses to the post-educational survey are as follows. A large majority (90%) of patients correctly answered the starting age to receive influenza (flu) vaccination and 84% also answered correctly how often influenza (flu) vaccination should be given (Figures 2&3; Appendix H). A large portion (88%) of patients answered that influenza (flu) vaccination cannot cause the flu, and 96% answered that the influenza (flu) is a very serious infection (Figures 4&5; Appendix H). A large portion of patients (96%) also correctly answered that a virus causes influenza (flu) (Figure 6; Appendix H)

Chapter V

Discussion

Findings

This quality improvement project aimed to analyze effectiveness of an educational pathway in increasing influenza (flu) vaccination knowledge, receptiveness, and adherence among patients in a family practice clinic. According to project results, 60% (Figure 1; Appendix G) of sample patients did not receive influenza (flu) vaccination during the 2019 flu season and it is worth noting that overall 50% of patients refused the flu vaccine during the 2018 flu season according to the clinic data. Consequently, this highlights that major misconceptions regarding influenza (flu) and influenza (flu) vaccination still remain as the results also show that many patients did not know what age influenza (flu) vaccination should be started as well as how often influenza (flu) vaccine should be received. A majority of patients answered that they believed that influenza (flu) vaccination can cause influenza (flu), and did not perceive influenza (flu) as serious infection nor understand that a virus causes influenza (flu). Therefore, knowledge may influence influenza (flu) vaccination perception, receptiveness, and ultimately vaccination rate.

There was a major difference between influenza (flu) and influenza (flu) vaccination knowledge and perception before the educational pathway as reflected in pre-educational survey compared to after the post-educational survey. This knowledge disparity demonstrates the effectiveness of the educational pathway in clarifying misconceptions about influenza (flu) and influenza (flu) vaccination. In the second section of the post-educational survey, most (96%) of the participants agreed they learned very much about influenza (flu) and influenza (flu) vaccination (Appendix I). As a result, 92% stated are very likely to receive influenza (flu) vaccination during the next flu season while 8% stated they are somewhat likely to receive

influenza (flu) vaccination (Figure 7; Appendix I). None of the participants stated that they are unlikely to receive the influenza (flu) vaccine (Appendix I). Moreover, 96% of participants found the educational pathway to be very beneficial, and 96% stated that it is very important to educate patients about influenza (flu) and the influenza (flu) vaccine (Appendix I). It was surprising, yet remarkable, that a majority (60%) of patients did not perceive influenza (flu) vaccination as the cause of the influenza (flu), and none were unlikely to receive influenza (flu) vaccination the next influenza (flu) season after receiving the educational pathway. Given the current climate of anti-vaccination sentiment due to the perception of vaccines causing health issues, education may be a strong tool for changing vaccination perceptions and prompting disease prevention.

Limitations or Deviations from Project Plan

Patients had different appointment times scheduled which posed a challenge in completing pre and post educational activities in groups and in a synchronized manner. Minor adjustments were made to the implementation process. It was deemed necessary to separate the waiting area into pre and post educational activities. Participants completing pre-educational surveys needed to complete the survey without any outside knowledge, and thus, should not complete it in the same location as those completing the educational video and review session.

Implications and Impact to practice

The use of evidenced-based educational pathways to increase influenza (flu) vaccination knowledge and awareness is a sustainable method to behavioral change because educational videos and materials can be implemented every influenza (flu) season and at a minimal financial cost. Moreover, clinic staff can modify the intervention by offering incentives such as food and beverages, vouchers, and other prizes. Clinic staff can also further engage participants with fun

educational activities. Furthermore, the educational pathway can be easily disseminated to other local clinics. Overall, the educational pathway is generalizable and transferable because other local clinics also contain a population that is representative of the community.

Future Research

Future Research should include other outpatient clinics such as urgent care clinics, health centers, intermediate care clinics, and retail health clinics. These alternative treatment facilities allow patients to receive care outside of their primary care clinic's restrictive office schedule and without having to go to an emergency department. Educating patients on the importance of flu vaccination in point of care clinics will protect the health of not only the person receiving the vaccination but everyone else in the community. Vaccination will also increase the chances of attaining herd immunity which leads to decreased risks for infection and transmission rates within the community. Increasing knowledge and receptiveness influenza (flu) vaccination will result in a decrease in not only the number of deaths that result yearly from the flu, but also the number of hospital admissions as well as costs related to treating a preventable disease. A future practice inquiry about the flu vaccine would be to determine whether the choice of the flu vaccine type (ex. vaccine shot or nasal spray) will increase the receptiveness of the flu vaccine among patients. This author hopes to disseminate the project at other primary care clinics in the community.

Impact on Nursing

The significance of this project to nursing demonstrated that collaboration among healthcare teams result in improved patient health outcomes. Collaborative effort with office staff in a primary care clinic helped in increasing knowledge and receptiveness of influenza (flu) vaccination among clinic patients. This collaboration can be extended to the multidisciplinary

team in any health care organization which includes social workers, pharmacists, and home health nursing staff to help with educating patients at every patient encounter about the importance influenza (flu) vaccination. Through an enhanced effort, the advance practice nurse can become a valuable partner in interdisciplinary collaborations to improve positive patient outcomes. Clinical prevention of influenza can be achieved through health literacy and continuous health education of the population by the multidisciplinary team. Patients that are on home health care will receive their vaccines at home through nurse visits. Social workers who visit should include flu vaccination in safety education.

Impact on Health Policy

Seasonal influenza viruses are believed to be transmitted from person-to-person primarily through virus-laden droplets that are generated when infected persons speak, cough or sneeze. These droplets can be deposited on the mucosal surfaces of the upper respiratory tract of susceptible persons who are near the droplet source. A health care policy should be developed and promoted at all levels to make mask wearing mandatory for all non-vaccinated individuals against influenza (flu) vaccination any time they come to public places. This helps decrease transmission of community acquired influenza.

Chapter VI

Conclusion

Value of the Project

Education is an important strategy in improving knowledge and receptiveness of influenza (flu) vaccination among patients during clinic visits and hence improving vaccination rates. The quality improvement project had a positive impact on patients at Reliance Family Care Clinic. The use of a video, posters, brochures and question and answer sessions with participants about common misconceptions related to vaccine safety and efficacy had a positive impact on how participants view influenza (flu) vaccination. Knowledge obtained from patients can be shared with family members, friends and other members of the community, ultimately increasing knowledge and removing barriers to receiving influenza (flu) vaccination. Additionally, clinic staff can utilize the educational materials at every patient encounter to help dispel perceptions and attitudes of mistrust regarding influenza (flu) vaccination among clinic patients.

DNP Essentials

The DNP essentials listed below met the criteria for the implementation and completion of the project. These essentials are used as a guide for using science-based concepts to evaluate and promote quality healthcare.

DNP Essential I: Scientific Underpinnings for Practice. The use of this essential utilized researched evidence-based practice (EBP) scholarly articles on barriers to receiving flu vaccines by patients in primary care settings. The evidence-based findings from articles were compared to the identified barriers of influenza (flu) vaccination in the clinical setting.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice.

With the understanding of this important essential, evidenced based literatures were analyzed and assisted in providing evidence for clinical practice. Health education strategy was identified as an evidence-based approach that was utilized to increase knowledge and perceptiveness of influenza (flu) vaccination among patients in family practice.

Essential VI: Inter-Professional Collaboration for Improving Patient and Population Health Outcomes.

This essential was a great tool in completing my quality improvement project. Effective communication skills were utilized to interact and coordinate with my project team and project site staff. Extensive collaboration skills were needed for completion of a safe and effective quality improvement project.

Plan for Dissemination

The dissemination of the quality improvement project would take place as a virtual oral presentation to the Bradley University community. An invitation would be sent to faculty, project team members, and students to attend the oral presentation. This project will also be presented at the American Nurses Association (ANA) conference. Lastly, the project will be submitted to the DNP repository site.

Attainment of Personal and Professional Goals

The DNP quality improvement project has taught me to be a better educator to my patients by using evidenced based practice guidelines to change attitudes and perception of patients. I have learned how to employ health promotion and risk reduction through a nursing perspective in order to improve patient health. This was achieved by analyzing and evaluating research articles to develop evidenced based interventions for patients. Learning how to analyze data has also improved my clinical decision making skills. The skills acquired from the DNP

essentials have prepared me to be well rounded for my future practice as an advanced practice registered nurse (APRN). I have been able to improve on my communication skills which will help me when providing patient care and other members of the health care team. Also, this essential has helped me to make appropriate adjustments and changes that support high quality, culturally sensitive, and cost-effective care.

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Figures

Figure 1: Reliance Family Care Sample Flu Vaccination Percentage

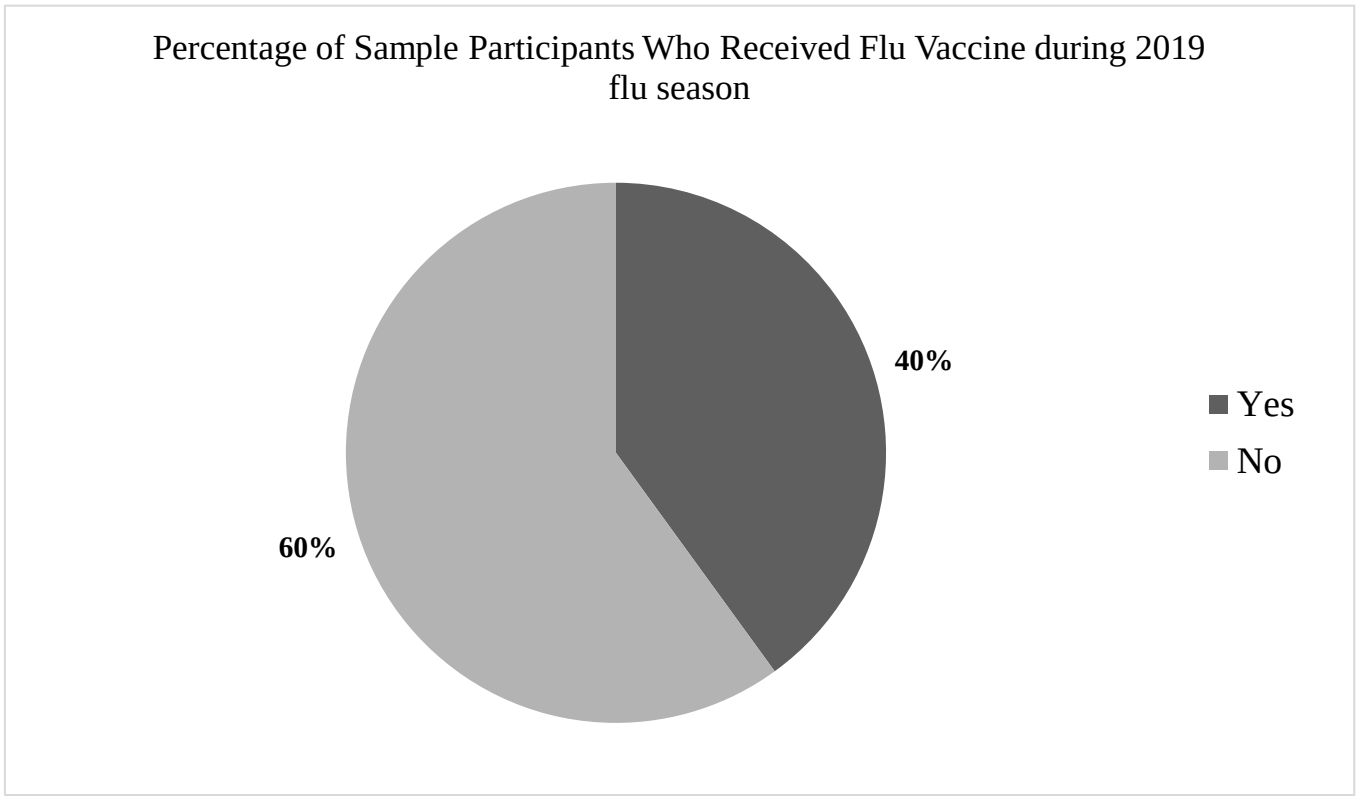


Figure 2: Pre and Post Education Knowledge of Flu Vaccination Age

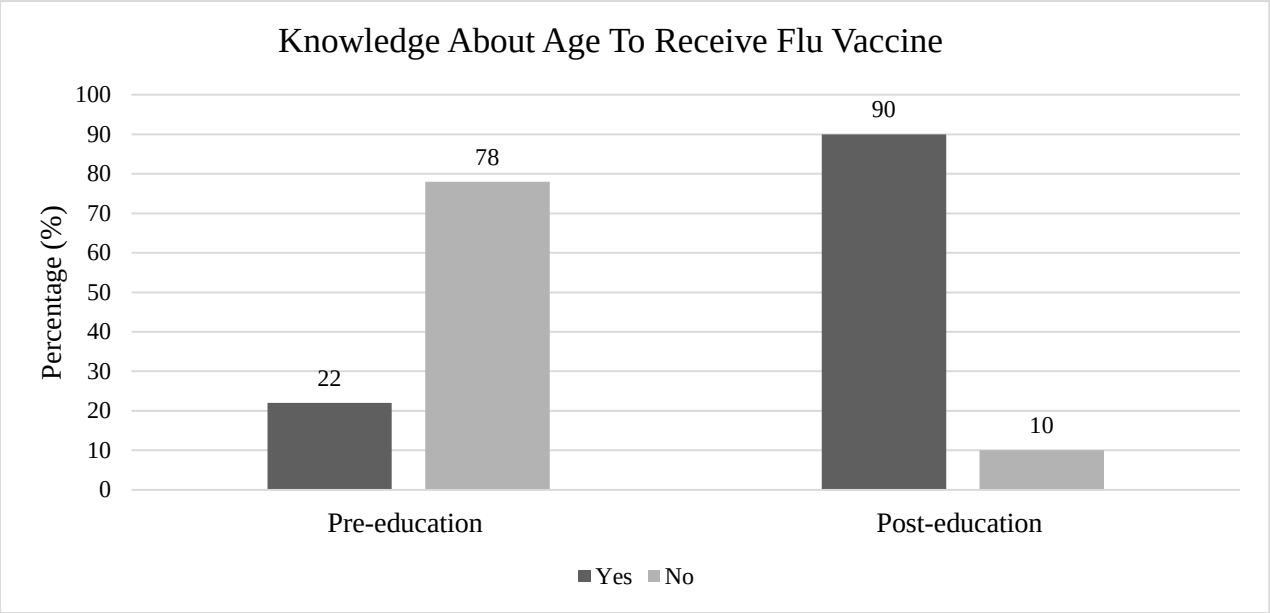


Figure 3: Pre and Post Education Knowledge of Flu Vaccination Frequency

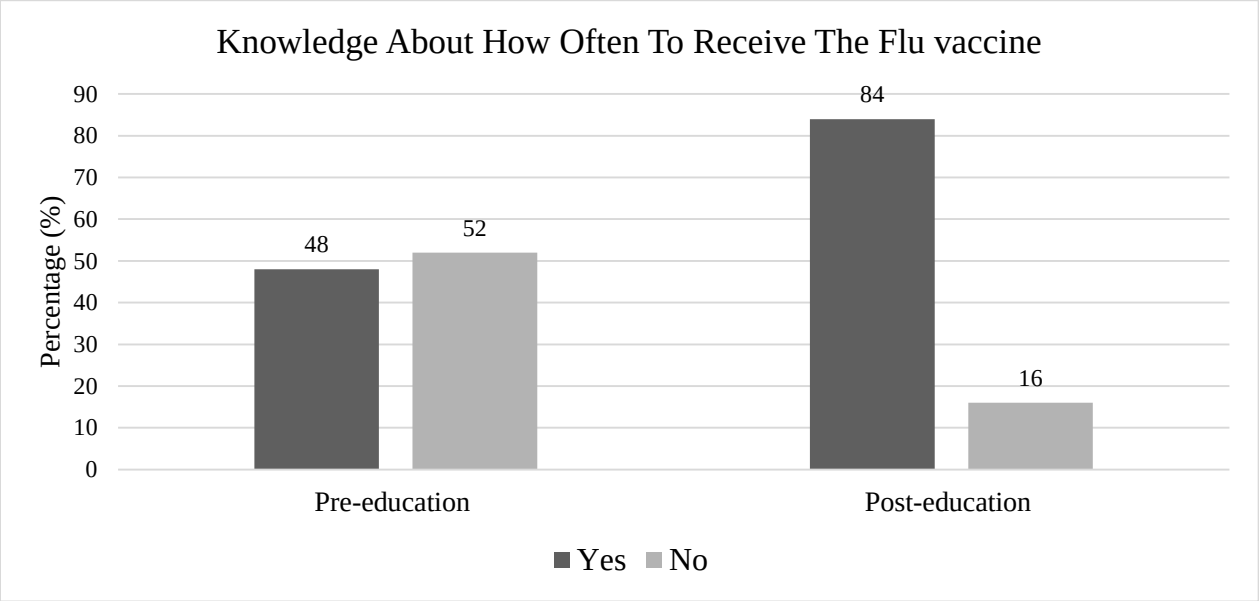


Figure 4: Pre and Post Education Perception of Flu Vaccination and Flu

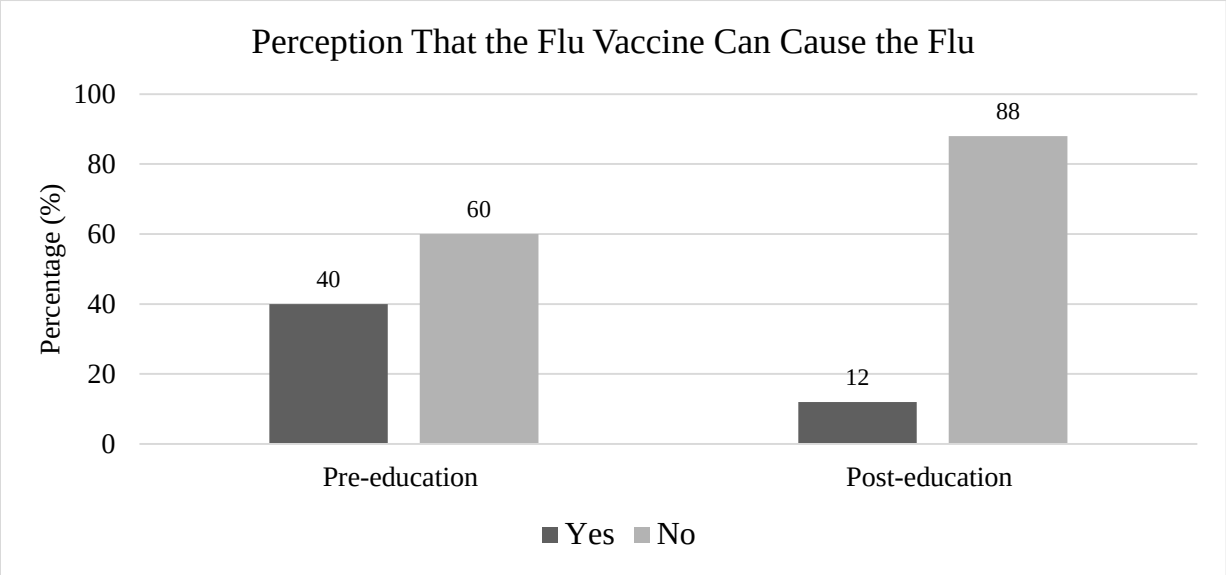


Figure 5: Pre and Post Education Knowledge of Flu Infection Seriousness

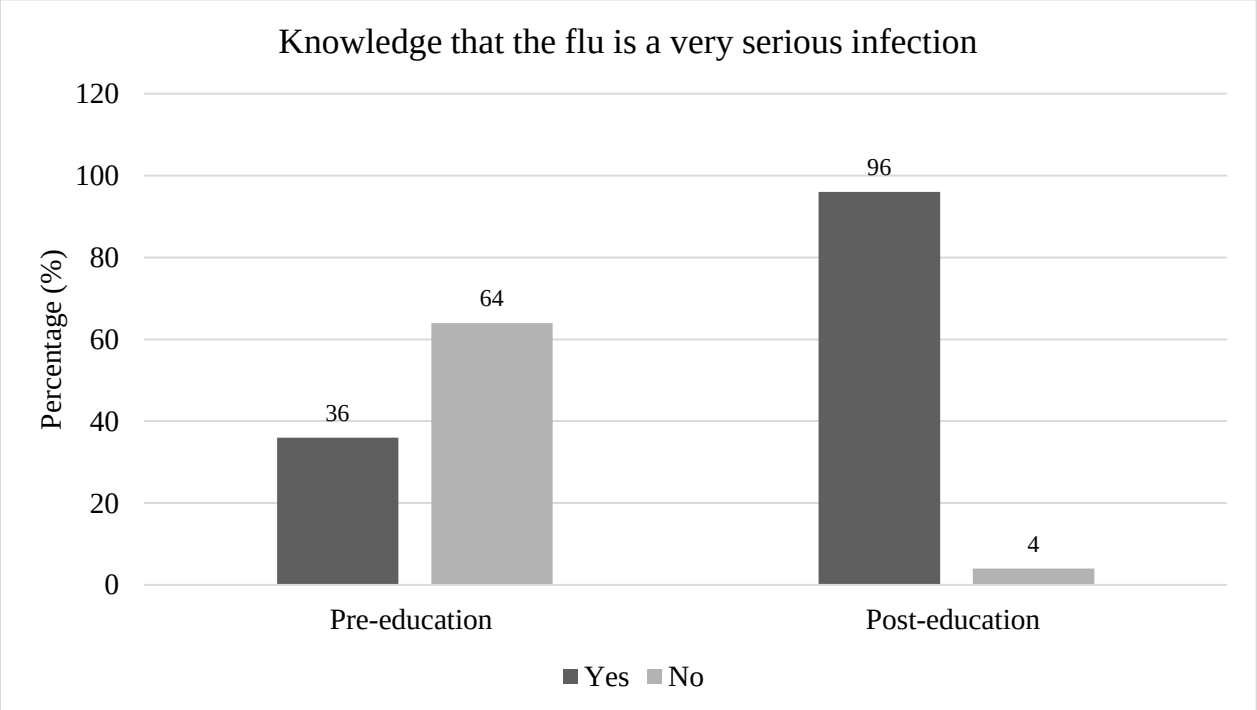


Figure 6: Pre and Post Education Knowledge of Cause of Flu

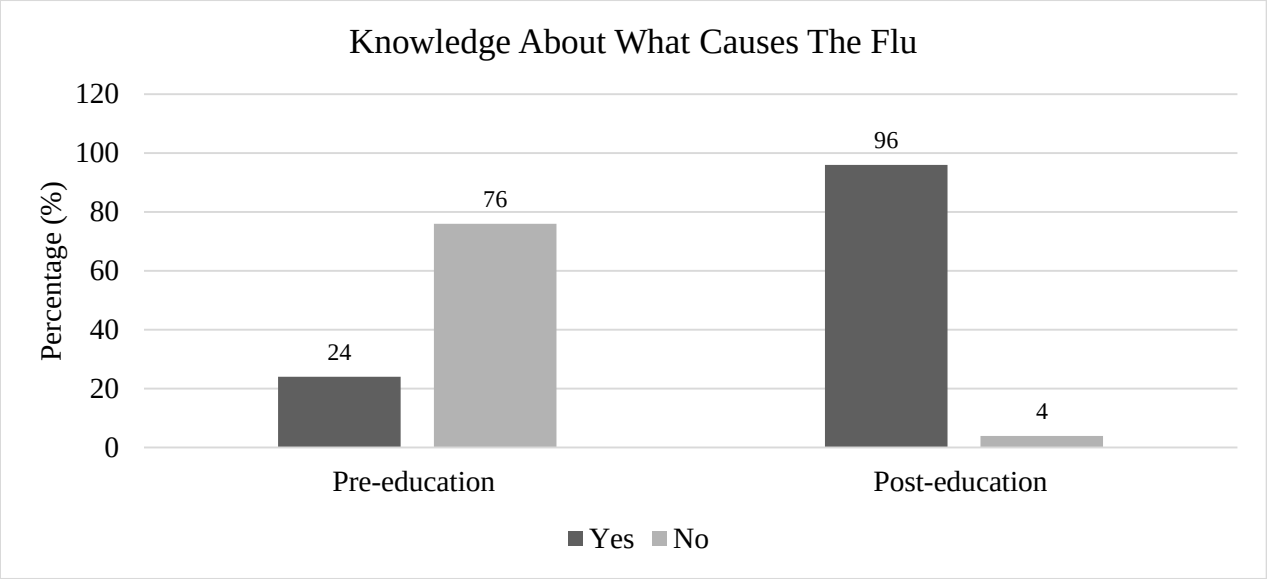
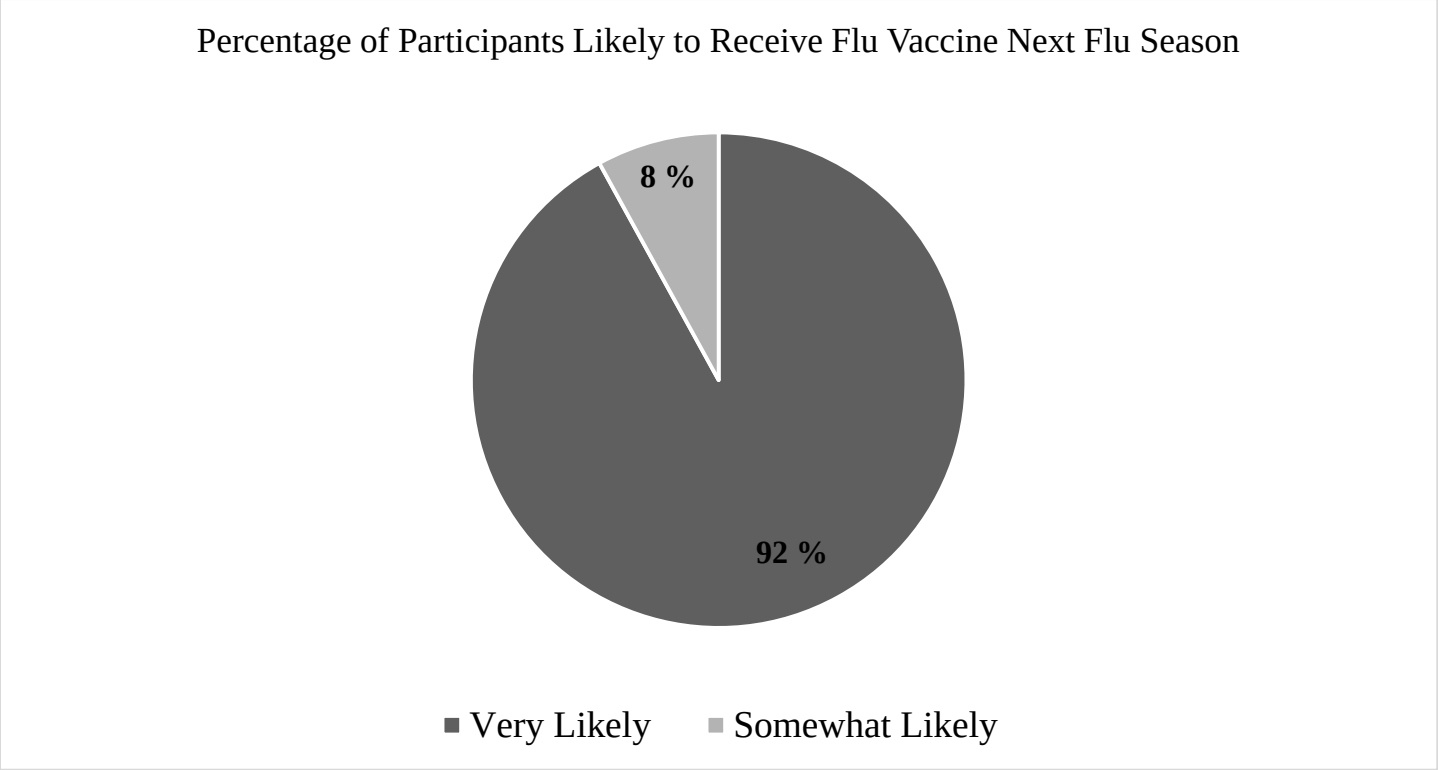


Figure 7: Post Education Receptiveness of Flu Vaccine



Appendices

Appendix A

BRADLEY UNIVERSITY
Information and Consent Form

Increasing Flu Vaccination Knowledge and Receptiveness Among Patients in a Family Practice

You are invited to participate in a quality improvement project. The purpose of this project is to increase flu vaccination knowledge and encourage vaccination among patients at Reliance Family Care clinic during the influenza season. This project consists of a five - minute video about the flu and the flu vaccine, a five-minute post video review session, and two 10-question surveys that each take about 5 minutes to complete. You will complete the first survey before you watch the video and the second one after you complete your scheduled appointment with your healthcare provider. Your participation in this project will take approximately 30 minutes. The surveys are anonymous; there is no link between your name and the project record. Taking part in this project is voluntary. You may choose not to take part or may leave the project at any time.

Compensation:

No compensation or reward will be given for your participation. You will, however, be given handouts with more information about the flu and flu vaccine to take home with you.

Questions about this project may be directed to the investigator in charge of this project: Mrs. Rosaline Kamara at **rkamara@mail.bradley.edu.** If you have general questions about being a study participant, you may contact the Committee on the Use of Human Subjects office at (309) 677-3877.

You are voluntarily making a decision to participate in this project. Your submission of the survey means that you have read and understand the information presented and have decided to participate. Your submission also means that all of your questions have been answered to your satisfaction. If you think of any additional questions, you should contact the investigator(s).

Appendix B

Pre-education Survey

Flu Vaccination knowledge Check

The purpose of this survey is to see how much you know about the flu and the flu shot. Please answer the following questions to the best of your knowledge.

What is your age? _____

What is your gender? _____

What is your race? _____

What is your ethnicity? _____

Please place a check mark next to one answer choice

1. Did you get the flu shot last flu season?
   ____Yes ____No

2. Healthy people over the age of _____ can receive the flu shot.
   _____ 3 months
   _____ 6 months
   _____ 1 year

3. How often should you get the flu shot
   _____ Every year
   _____ Every 6 months
   _____ I do not have to get the shot after getting it one time

4. The flu shot can make you get the flu
   ____True ____False

5. The flu is a very serious infection
   _____True _____False

6. What causes the flu?
   _____ Bacteria _____Virus

Thank you for your participation! If you have any questions or concerns regarding this survey, please contact Ms. Rosaline Kamara at rkamara@mail.bradley.edu.

BRADLEY University

Appendix C

Post-education survey

Flu Vaccination Survey

The purpose of this survey is to see what you have learned about the flu and the flu shot today. Please answer the following questions to the best of your knowledge.

Please place a check mark next to one answer choice

1. Healthy people over the age of _____ can receive the flu shot.
   _____ 3 months
   _____ 6 months
   _____ 1 year

2. How often should you get the flu shot
   _____ Every year
   _____ Every 6 months
   _____ I do not have to get the shot after getting it one time

3. The flu shot can make you get the flu
   ____True _____False

4. The flu is a very serious infection
   _____True _____False

5. What causes the flu?
   _____ Bacteria _____Virus

The purpose these questions is to see what you thought about flu education you received today

1. I learned a lot about the flu and flu vaccine
   _____ Agree
   _____ Disagree

2. How likely are you to get the flu shot after what you learned today?
   _____ Very likely
   _____ Somewhat likely
   _____ Not likely

3. How beneficial was the information you learned today?
   _____ Very beneficial
   _____ Somewhat beneficial
   _____ Not beneficial

4. How important is it to educate patients about the flu and the flu shot?
   _____ Very important
   _____ Somewhat important
   _____ Not important

5. Do you have any suggestions on what we can do to make flu education better?
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Thank you for your participation! If you have any questions or concerns regarding this survey,

please contact Ms. Rosaline Kamara at rkamara@mail.bradley.edu.

Appendix D

CDC Brochure

People at High Risk

If you (or your child) have a high risk factor listed below and develop flu symptoms, consult a health care provider to get advice about seeking medical care. Also, it's possible for otherwise healthy people to develop severe illness, so anyone concerned about their illness should consult their medical provider.

- Children younger than 5, but especially children younger than 2 years old
- People 65 and older
- Pregnant women (and women up to two weeks postpartum)
- Residents of nursing homes and other long-term care facilities
- People who have:
  - Asthma
  - Neurologic and neurodevelopment conditions [including disorders of the brain, spinal cord, peripheral nerve, and muscle such as cerebral palsy, epilepsy (seizure disorders), stroke, intellectual disability, moderate to severe developmental delay, muscular dystrophy, or spinal cord injury].
  - Chronic lung disease (such as chronic obstructive pulmonary disease [COPD] and cystic fibrosis)
  - Heart disease (such as congenital heart disease, congestive heart failure and coronary artery disease)
  - Blood disorders (such as sickle cell disease)
  - Endocrine disorders (such as diabetes mellitus)
  - Kidney disorders
  - Liver disorders
  - Metabolic disorders (such as inherited metabolic disorders and mitochondrial disorders)
  - Weakened immune system due to disease or medication (such as people with HIV or AIDS, or cancer, or those on chronic steroids)
- People younger than 19 years old who are receiving long-term aspirin therapy
- Adults with extreme obesity (Body Mass Index, or BMI, of 40 or greater). Obesity may also be a risk factor for children. Childhood obesity is defined as a BMI at or above the 95th percentile, for age and sex.

May 2019 | 19_306016-A

Emergency Warning Signs of Flu

Most people are able to recover at home from flu without medical care. However, some people are at high risk of developing serious flu complications. There are "emergency warning signs" that should signal anyone to seek medical care urgently.

Emergency Warning Signs In Children:

- Fast breathing or trouble breathing
- Bluish lips or face
- Ribs pulling in with each breath
- Chest pain
- Severe muscle pain (child refuses to walk)
- Dehydration (no urine for 8 hours, dry mouth, no tears when crying)
- Not alert or interacting when awake
- Seizures
- Fever above 104°F
- In children less than 12 weeks, any fever
- Fever or cough that improve but then return or worsen
- Worsening of chronic medical conditions

Emergency Warning Signs In Adults:

- Difficulty breathing or shortness of breath
- Persistent pain or pressure in the chest or abdomen
- Persistent dizziness, confusion, inability to arouse
- Seizures
- Not urinating
- Severe muscle pain
- Severe weakness or unsteadiness
- Fever or cough that improve but then return or worsen
- Worsening of chronic medical conditions

#FIGHT FLU

For more information, visit
http://www.cdc.gov/flu
or call
800-CDC-INFO

Flu & You

Influenza (flu) is a contagious disease that can lead to hospitalization.

How severe is illness associated with flu?

Flu illness can range from mild to severe depending on different factors like the virus involved and the age and health of the person who has been infected. While flu can make anyone sick, certain people are at high risk for developing serious complications that can result in hospitalization or death. This includes older adults, young children, pregnant women, and people with certain long-term health problems including as asthma, diabetes, and heart disease.

However even healthy children and adults can get very sick from flu and spread it to friends, co-workers, and family. In the United States, millions of people have to visit the doctor because of flu and hundreds of thousands are hospitalized from flu complications each year.

How does flu spread?

Most experts think that flu viruses are spread mainly by droplets made when people with flu cough, sneeze or talk. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs. A person might also get flu by touching a surface or object that has flu virus on it and then touching their own eyes, mouth or nose.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CDC Recommends a Three-Step Approach to Fight Flu:

#1 A flu vaccine is the first and most important step in helping to protect against flu and its potentially serious complications.

- While there are many different flu viruses, flu vaccines protect against the viruses that research suggests will be most common.
- Flu vaccination has been shown to reduce flu illnesses, doctors' visits, and missed work and school due to flu, as well as reduce the risk of serious flu complications that can result in hospitalization or even death.
- Vaccination also has been shown to not only help protect a pregnant woman from flu, but to also protect her baby for the first several months after birth.
- Flu vaccination varies in how well it works and some people who get vaccinated may still get sick, but several studies have shown that vaccination reduces severity of illness in those people.
- Everyone 6 months and older should get a flu vaccine every year before flu activity begins in their community. CDC recommends getting vaccinated by the end of October.
- Vaccination of people at high risk from flu is especially important to decrease their risk of severe flu illness.

#2 Take everyday actions to help reduce the spread of germs that cause respiratory illnesses.

- Try to avoid close contact with sick people.
- If you are sick with flu symptoms, CDC recommends that you stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. Your fever should be gone without the use of a fever reducing medicine.
- While sick, limit contact with others as much as possible to keep from infecting them.
- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it.
- Wash your hands often with soap and water. If soap and water are not available, use an alcohol-based hand rub.
- Avoid touching your eyes, nose and mouth. Germs spread this way.
- Clean and disinfect surfaces and objects that may be contaminated with germs like flu.

#3 Take flu antiviral drugs if your doctor prescribes them.

- If you get sick with flu, antiviral drugs can be used to treat your illness.
- Antiviral drugs are different from antibiotics. They are prescription medicines (pills, liquid or an inhaled powder) and are not available over-the-counter.
- Antiviral drugs can make illness milder and shorten the time you are sick. They may also prevent serious flu complications. For people with high risk factors, treatment with an antiviral drug can mean the difference between having a milder illness versus a very serious illness that could result in a hospital stay.
- CDC recommends prompt treatment for people who have flu infection or suspected flu infection and who are at high risk of serious flu complications.
- Studies show that flu antiviral drugs work best for treatment when they are started within 2 days of getting sick, but starting them later can still be helpful, especially if the sick person has a high risk factor or is very sick from flu. Follow your doctor's instructions for taking these drugs.

If You Do Get Sick with Flu...

Flu Symptoms can include:

- Fever* or feeling feverish/ chills
- Cough
- Sore throat
- Runny or stuffy nose
- Muscle or body aches
- Headaches
- Fatigue (tiredness)
- Sometimes diarrhea and vomiting, though this is more common in children than adults

**It's important to note that not everyone with flu will have a fever*

What should I do if I get sick?

If you get flu symptoms, stay home and avoid contact with other people as much as possible except to seek medical care. Most people are able to recover at home from flu without medical care. However, some people are at high risk of developing serious flu complications (see information under People at High Risk).

How long can a sick person spread flu to others?

People with flu are most contagious in the first 3 to 4 days after their illness begins. Some otherwise healthy adults may be able to infect others beginning 1 day before symptoms develop and up to 5 to 7 days after becoming sick. Some people, especially young children and people with weakened immune systems, might be able to infect others with flu viruses for an even longer time.

How long should I stay home if I'm sick?

CDC recommends that you stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. Your fever should be gone without the use of a fever-reducing medicine. Stay away from others as much as possible to keep from making others sick. Continue to cover coughs and sneezes and wash hands even after you return to work. It is important to know that even if you don't have a fever, you may have flu and be contagious if you get flu symptoms.

Appendix E

CDC and Site approved educational video links

https://www.youtube.com/watch?v=odbQgx6s6eI&authuser=0

https://www.youtube.com/watch?v=QvyaE_eXDJU&authuser=0

https://www.youtube.com/watch?v=K0HriqF9-E0&authuser=0

https://www.youtube.com/watch?v=K0HriqF9-E0&authuser=0

Appendix F

Table 1 : Demographics				
Patient Age Ranges	**Male**	**Female**	**%**	**n**
18-29	2	3	10	5
30-39	4	6	20	10
40-49	7	11	36	18
50-59	6	6	24	12
60-69	1	2	6	3
70+	1	1	4	2
Total	21	29		50
Race/Ethnicity				
White	2	4	12	6
Hispanic/Latino	5	11	32	16
Black / African American	4	13	34	17
Asian American	6	5	22	11
American Indian / Alaska Native	-	-	-	-
Native Hawaiian / Pacific Islander	-	-	-	-
Some other race	-	-	-	-
Two or more races	-	-	-	-
Total	17	33		50

Appendix G

Table 2: Flu Vaccination Knowledge Check Pre-educational Interventions (Survey 01)		
Number of participants who received flu shot the previous flu season	**%**	**n**
Yes	40	20
No	60	30
Total		50
Knowledge about age to receive flu shoot		
Yes	22	11
No	78	39
Total		50
Knowledge about how often to get the flu shoot		
Yes	48	24
No	52	26
Total		50
Perception that the flu shot can cause the flu		
Yes	40	20
No	60	30
Total		50
Knowledge that the flu is a very serious infection		
Yes	36	18
No	64	32
Total		50
Knowledge about what causes the flu		
Yes	24	12
No	76	38
Total		50

Appendix H

Table 3 : Flu Vaccination Knowledge Check Post-educational Interventions (Survey 02)		
Knowledge about age to receive flu shoot	**%**	**n**
Yes	90	45
No	10	5
Total		50
Knowledge about how often to get the flu shoot		
Yes	84	42
No	16	8
Total		50
Perception that the flu shot can cause the flu		
Yes	12	6
No	88	44
Total		50
Knowledge that the flu is a very serious infection		
Yes	96	48
No	4	2
Total		50
Knowledge about what causes the flu		
Yes	96	48
No	4	2
Total		50

Appendix I

Table 4: Benefits and Receptiveness of Flu Vaccination After Education (Survey 02)		
Learned a lot about flu and flu vaccine	**%**	**n**
Agree	96	48
Disagree	4	2
Total		50
Likely to get flu vaccine after education		
Very Likely	92	46
Somewhat Likely	8	4
Not Likely		-
Total		50
Benefits of information learned		
Very Beneficial	96	48
Somewhat Beneficial	4	2
Not Beneficial	-	-
Total		50
Importance of educating patients about the flu and the flu shot		
Very Important	96	48
Somewhat Important	4	2
Not Important	-	-
Total		50

Appendix J

Project Budget

Gas Mileage	$60	Self
Posters/Brochures	$0	Free download from CDC website
Paper	$10	Self
Printing Ink	$60	Self
Miscellaneous	$100	Reliance Family Care
Total	$230	