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

Rosaline Kamara, BSN, RN, ONC

BRADLEY University

Acknowledgements

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Introduction

- Influenza severe but preventable infection
- CDC report for 2017-2018 influenza season (CDC, 2018)
  - 48.8 million illnesses
  - More than 22.7 million medical visits
  - 959,000 hospitalizations
  - 79,400 deaths

- Efforts made by family practice providers to increase flu vaccination rates, but Influenza rates still remained under 30% (Sagor & AlAteeq, 2018)
- Evidence-based educational activities can increase knowledge and change perceptions about the flu vaccination

Background & Significance

- CDC Advisory Committee on Immunization Practices (ACIP) recommends Influenza vaccination for all persons six months of age and older (ACIP, 2019 & CDC, 2019)
- Family practice clinics failed to reach the 80% vaccination rate objective set by Healthy People 2020 (Healthy People 2020, 2019)
  - Lack of flu immunization can result in complications such as death, disabilities, and hospitalization (El Khoury & Salameh, 2015 & Bödeker et at., 2015)
  - A community of sick people results in socioeconomic burden due to lost wages and productivity (El Khoury & Salameh, 2015)

- Reasons patients refuse flu vaccination (Leung et al., 2017)
  - Misconception about vaccine safety and efficacy
  - Overrating risks of vaccination complications
  - Underrating occurrence of severe influenza complications
- Relationship between patient knowledge and number of flu vaccines administered in family practice clinic (Sagor & AlAteeq ,2018)
- Educational interventions proved useful in providing information about flu vaccination (Berkhout et al., 2018)

Needs Assessment

- Tina Jordan, nurse practitioner at Reliance Family Care, expressed the following concerns based on clinic data from the 2018 flu season
  - The clinic's 45% Vaccination rate is below the 90% goal
  - 50% of clinic patients refused the flu vaccine making them one of the most unvaccinated in the community
  - Low vaccination rate resulted in an increased number of flu related treatments during flu season

Needs Assessment

- Lack of knowledge about the flu vaccine is a major contributor to the clinic's low flu vaccination rate
- Increased knowledge may lead to a change in the patients' perception towards the flu vaccine

Needs Assessment

- To combat high flu cases, Ms. Jordan and the project investigator have committed to launching an education program to increase patient knowledge and dispel misconceptions about flu vaccine

S.W.O.T. Analysis

Objective: To increase the seasonal influenza vaccination knowledge in a family practice clinic through education

Internal Factors

Strengths (+)	Weaknesses (-)
❖ Planned interventions are evidenced-based	❖ Behavioral change can be difficult to maintain, and it takes time
❖ Facility's high desire for improvement in the vaccination rate from previous year's record	❖ Potential for no change in behavior
❖ Potential for reduced transmission rate of influenza	❖ Potential for no change in vaccine rate
❖ Potential for reduced hospitalization due to influenza	
❖ Potential for reduced death rate due to influenza	
❖ Potential for decreased absenteeism from work and school	
❖ Large sample size	

S.W.O.T. Analysis

External Factors

Opportunities (+)	Threats (-)
❖ Improved patient knowledge about influenza vaccination	❖ Possible vaccine scarcity during epidemics
❖ New education materials from CDC about influenza vaccination	❖ Early influenza season
❖ Improved safety of vaccines	❖ News media coverage about adverse effects of the flu vaccine
❖ Improved vaccine efficacy	❖ New influenza strains during the flu season
	❖ Cultural and religious beliefs

Evaluation of Objective: Strong data, community support, and motivation from the facility will help promote change to minimize weaknesses and threats

Problem Statement

- The problem addressed by this project is the need for educational strategies to increase flu vaccination knowledge and adherence among patients in a family practice clinic
  - Education is the best evidence based- practice for increasing flu vaccination knowledge in family practice settings (Abu-rish et al., 2016)
  - According to MacDougall et al. (2015), 68% of patients received the flu vaccine after education compared to 32% before education

Project Purpose

- The goal of this project is to increase flu vaccination knowledge and encourage vaccination during the influenza season among patients at Reliance Family Care clinic
  - Involves identifying and removing barriers that prevent vaccination
  - Stressing benefits of flu vaccine (Jones et al., 2015)
  - Increasing patient vaccination efficacy through education (Jones et al., 2015)

Project Objectives

- **Objective 1**: To develop and implement education strategies, increase the knowledge of patients, and focus on misconceptions about the flu vaccine during the flu season
- **Objective 2**: To evaluate the knowledge of the patients before education and after education to determine if they want to receive the flu vaccination

PICOT Question

- **"For patients in a family practice clinic, how do attitudes towards flu vaccination before education compare to after education?"**
  - **P** (population) - **Patients in a family practice clinic**
  - **I** (intervention) - **Education**
  - **C** (comparison) - **Attitudes before and after education**
  - **O** (outcome) - **Change in perception about the flu**
  - **T** (time) - **Flu season**

Congruence with Organizational Strategic Plan

- The facility is embarking on implementing evidenced-based strategies to increase the vaccination rate among its patients in order to reduce the number of flu cases

- The proposed project provides relevant evidenced-based education to the patients of Reliance Family Care to increase their knowledge about the flu vaccine

Synthesis of Evidence

❑ A comprehensive review of the literature shows

- Low flu vaccination rate is attributed to barriers such as a fear of side effects and cultural or religious beliefs

(Alqahtani et al., 2017; Yeung et al., 2016; Arriola et al., 2015; Bertoldo et al., 2019)

- Flu vaccine knowledge increases awareness among patients, promotes behavioral change, and decreases risky behavior such as the refusal of influenza vaccine

(Berkhout et al., 2018; Bertoldo et al., 2019 ; Casalino et al ., 2018 ; Worasathit et al., 2015)

Synthesis of Evidence

- Primary reasons for declining flu vaccination include thinking that the vaccine can cause the flu and not believing the vaccine will prevent the illness

(Schmid et al., 2017; Arriola et al., 2015; Yeung et al., 2016)

- Personal beliefs and preferences for flu vaccine impacted by past experiences with vaccinations, and the 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 et al., 2016; Schmid et al., 2017)

Synthesis of Evidence

- Dissemination of information via posters, mass mailings, fliers, newsletters, meetings, lectures, presentations, and videos improves knowledge, awareness, and perception about the flu

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

- Sharing of success stories from patients who have been successfully educated about the flu vaccine has the potential to facilitate a change of perception about the flu vaccine

(Abu-Rish et al., 2016; Alqahtani et al., 2017; Gazibara et al., 2019; Ma et al., 2018; Sagor et al., 2018)

Synthesis of Evidence

- 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)

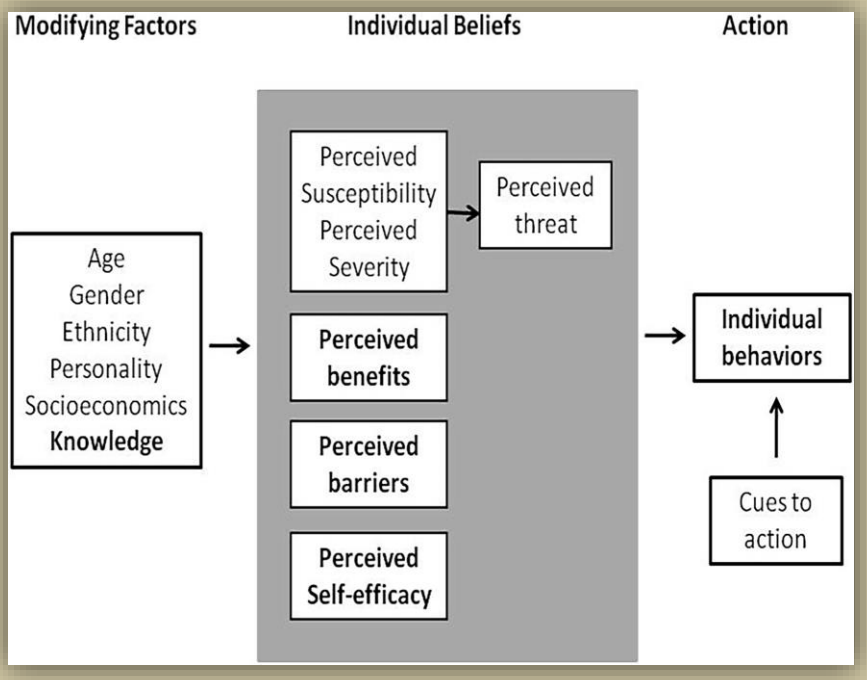
- Promoting interventional activities such as having a "vaccination day" or "vaccination fair" may provide the opportunity for incorporating the components of other interventions such as presentations and free vaccination

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

Theoretical Framework

Health Belief Model

- Optimal for achieving behavior change by targeting perceived barriers, benefits, self-efficacy, and threat (Jones et al., 2015)
- Chosen as a framework to guide this project because it is geared towards increasing flu vaccination efficacy and changing the flu vaccination misconceptions, attitudes, and beliefs of patients seen at the Reliance Family Care clinic
- Knowledge of the common attitudes and beliefs held by patients at Reliance Family Care help identify specific educational pathways that can directly address them



(Miri et.al, 2018)

Project Design

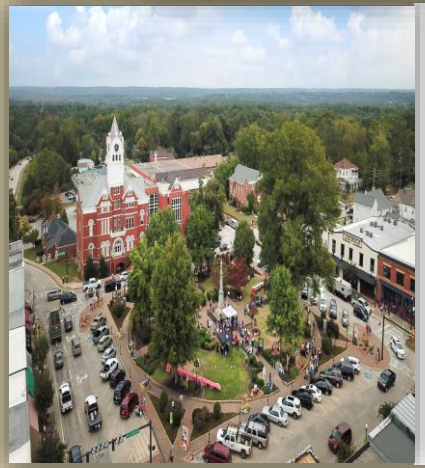
- Quality improvement project
  - Evidence-based practice
  - Development and implementation of influenza educational pathways for patients
  - Analyzing the patients' influenza vaccination knowledge and perception before and after education to determine if there was a change
  - Use of brochures, pamphlets, posters, and videos to increase patient knowledge

Project setting

Reliance Family Care

- Family Practice Clinic
  - Open 6 days/week
- Location:
  - McDonough, Georgia
    - Population: 25,782 (U.S. Census, 2018)
    - Part of Atlanta metropolitan area

- Providers
  - 1 Medical Doctor (MD)
  - 3 Nurse Practitioners (NP)
  - 3 Medical Assistants (MA)
  - 1 Phlebotomist
  - 4 front office staff
- Average number of patients seen
  - ~ 2,000 monthly
  - ~25-30 per day by MD
  - ~17-20 per day by NPs
- Patients between 5 – 80 years old



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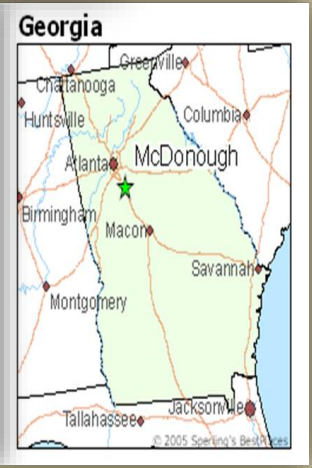

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Participation Criteria

- Voluntary
  - Participants must carefully read project information form
- Must be registered at the clinic and 18 years old and up
- Includes all gender, race, religion, immigration status, health status, and nationality
- Must be proficient in English and have eight grade literacy level
- Information Confidential
  - No personal information will be collected
  - Collected data stored in a secured safe in a locked room

Educational Pathway

- Comprise of
  - Pamphlets
  - Brochures
  - Posters
  - Five-minute video

- Will discuss the following
  - Importance of receiving the flu vaccine
  - How to recognize flu signs and symptoms
  - Risks and side effects associated with flu vaccination
  - Myths about the flu vaccine
  - Vaccine efficacy

Data Collection Tools

- Pre-educational questionnaire
  - Tests patient knowledge about the flu and flu vaccine
  - Administered in waiting-area

- Post-educational questionnaire with Liker-type scale
  - Evaluate patient knowledge and perception about the flu and the flu vaccine after receiving the educational intervention
  - Given after patients conclude their appointments with either the MD or NPs

Project Plan

Intervention description

- Use of evidenced-based educational materials to increase flu vaccine awareness for patients at Reliance Family Care
  - Materials include videos, posters, pamphlets, and brochures obtained from the CDC website
  - Materials used to provide the patients with readiness to change their attitudes towards the flu vaccine

Project Plan

Intervention Implementation

- 2 days designated as "Flu Awareness Days"
  - Days with high patient volume
- Pre-education questionnaires are distributed by the clinic staff to assess the knowledge of the patients before education during check-in
- Patients will be shown a five-minute video about the importance of the flu vaccine while they await examination
- Posters written in Spanish and English are displayed in the examination rooms
- Post- educational questionnaire is given to assess the knowledge of the patients after education
  - Patients will also be given brochures and pamphlets to take home

Project Plan

Outcomes to be Measured

- Immunization status of the patients before and after education

Evaluation

- Pre and post-educational evaluation is determined by the percentage increase of knowledge after post-questionnaire

Sustainability

- Educational materials used for the project are easily and readily available at the CDC web site
- Paper and printing expenses are the only foreseeable direct costs for this project
- No direct costs associated with the use of facility meeting rooms or time and salary costs for staff
- Periodic follow up with the clinic to recommend educational materials is a way to further promote project sustainability

Ethical Issues

- Letter of support will be obtained from a Reliance Family Care administrator and submitted to the Bradley University Committee on the Use of Human Subjects in Research (CUHSR)
  - Reliance Family Care does not have an IRB
- Approval will be obtained from the Bradley University IRB as an exempt study
- A Collaborative Institutional Training Initiative (CITI) certification is completed prior to beginning of the project

- Survey tools contain no personally identifying data
- Unfair or biased exclusion of patients based on attributes not included in project
- Responsivity to human subject protection includes adherence to ethical principles of respect for persons, beneficence, and justice

Organizational Assessment

Goals and Mission of Reliance Family Care

- **Goal:** Improve community health through healthy habits, seek of immediate care, and early disease detection to avoid worsening health conditions
- **Mission:** "Working with the community to reduce morbidity and mortality through disease prevention and early detection of life-threatening conditions"

- Project purpose of increasing flu vaccination knowledge, awareness, and adherence using educational pathways aligns with Reliance Family Care goals and mission
  - Awareness of flu severity promotes flu vaccination and leads to a decrease in flu related mortalities and morbidities
  - Knowledge of vaccination benefits encourages healthy behaviors such partaking in seasonal flu vaccination
  - Increased vaccination rate prevents health complications and improves overall the health outcomes of the patients at Reliance Family Practice

Cost Factors

- ❑ Existing patient waiting areas are utilized
- ❑ Educational presentations scheduled during clinic hours
- ❑ Clinic staff support the project and agree to assist with project activities at no cost

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

Results

Analysis of Implementation

- Patients checked in and were given project information form and pre-educational survey
  - Patients verbally consented to the PI after reading project information form and encouraged to ask questions
- Upon completion of pre-educational survey, patients were asked to moved to secluded portion of waiting to watch five minute video and participate in post-video review session
  - All patients encouraged to watch video even if they did not wish to participate in survey
  - All patients given educational handouts to take home
- Patients completed post-educational survey after appointments
- Surveys were analyzed to evaluate perception and knowledge of flu and flu vaccine before and after education

- Implementation process followed initial plans
- Flexibility and teamwork key to successful implementation and most important lesson learned
  - Clinic staff adjusted schedule to ensure smooth implementation and directed patients to appropriate sections of waiting area for project activities

Results

Analysis of Project Outcome Data

- 50 patients in total participated in project
- All participants completed both the pre and post educational surveys
  - 100% response rate

Demographics	
Patient Age Ranges	**Percentage (%)**
18-29	10
30-39	20
40-49	36
50-59	24
60-69	6
70+	4
Race/Ethnicity	**Percentage (%)**
White	12
Hispanic/Latino	32
Black / African American	34
Asian American	22

Results

Pre and Post-education Vaccination Knowledge and Perception

- **Pre- education:** 78% of patients did not know the minimum age healthy people should receive the flu vaccine and only 22% did
- **Post- education:** 90% of patients correctly answered the starting age to receive the flu shot and only 10 % did not

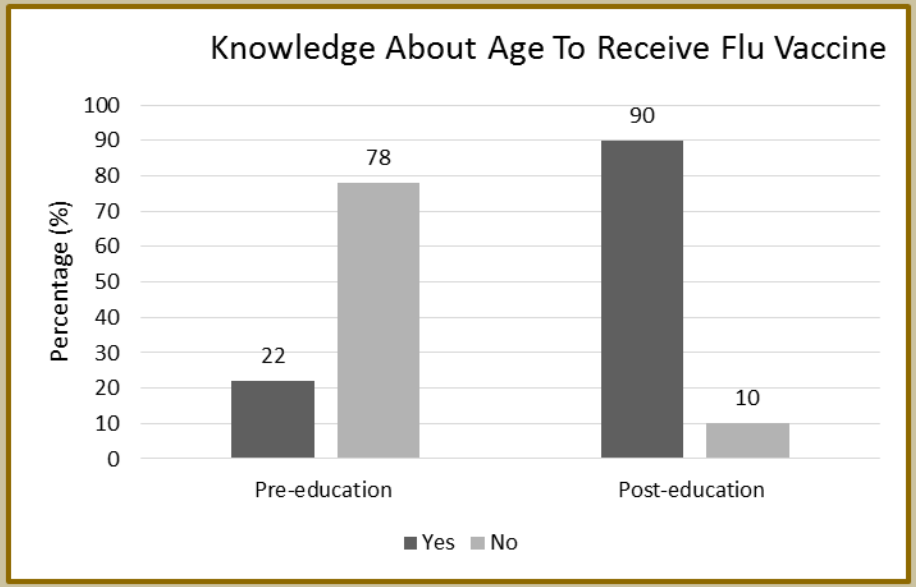

Figure 2: Pre and Post Education Knowledge of Flu Vaccination Age

Results

Pre and Post-education Vaccination Knowledge and Perception

- **Pre- education:** Slightly over half (52%) did not know how often the flu vaccine should be received verses 48% who did
- **Post- education:** 84% answered correctly how often the flu vaccine should be given and 16% did not

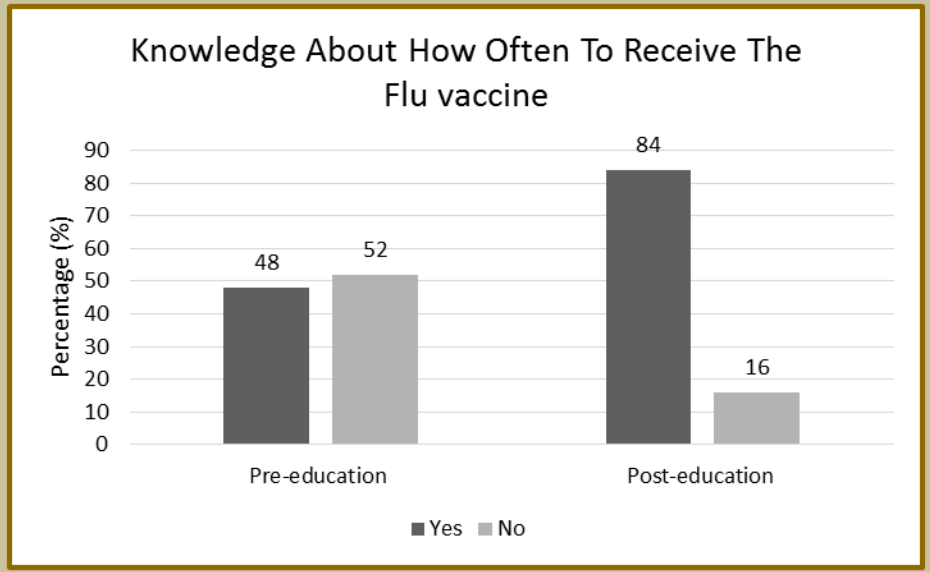

Figure 3: Pre and Post Education Knowledge of Flu Vaccination Frequency

Results

Pre and Post-education Vaccination Knowledge and Perception

- **Pre- education:** 40% of patients answered that the flu vaccine can cause the flu verse 60% who answered that it can not
- **Post- education:** 88% of patients correctly answered that that flu vaccine cannot cause the flu and 12% answered that it can

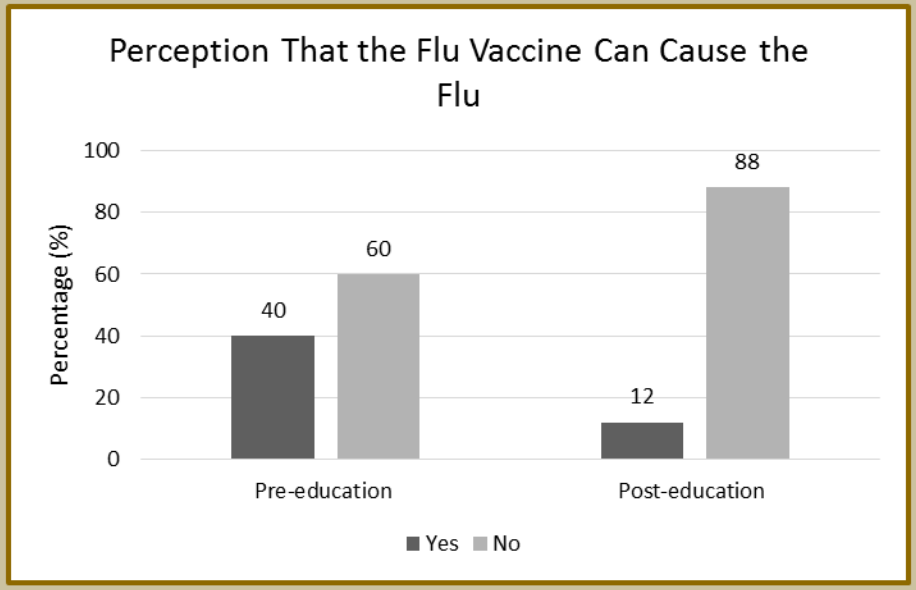

Figure 4: Pre and Post Education Perception of Flu Vaccination and Flu

Results

Pre and Post-education Vaccination Knowledge and Perception

- **Pre- education:** 64% of patients did not know that flu can be life-threatening and 36% did
- **Post- education:** 96% answered correctly that the flu is a very serious infection and 4% did not

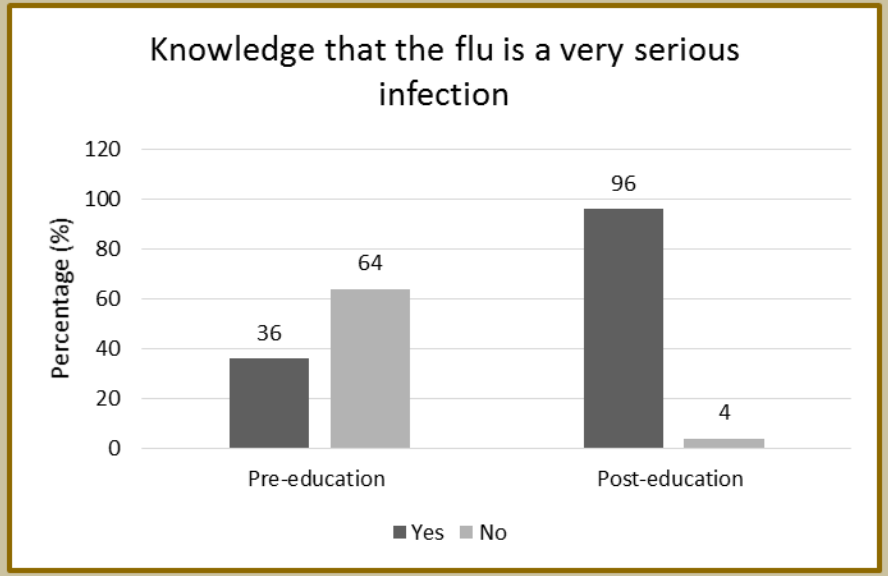

Figure 5: Pre and Post Education Knowledge of Flu Infection Seriousness

Results

Pre and Post-education Vaccination Knowledge and Perception

- **Pre- education:** 76% of patients did not know what causes the flu and only 24% did
- **Post- education:** 96% correctly answered that a virus causes the flu and 4% did not

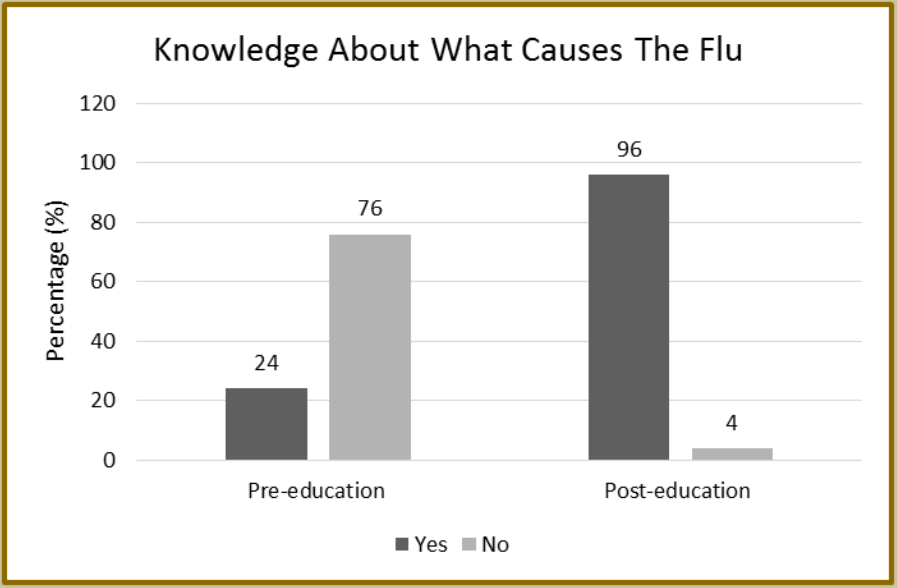

Figure 6: Pre and Post Education Knowledge of Cause of Flu

Summary of Findings

- Project aim is to analyze the effectiveness of an educational pathway in increasing flu vaccination knowledge, receptiveness, and adherence among patients in a family practice clinic
- 60% of sample patients stated that they did not receive the flu vaccine during the 2019 flu season compared to 40% that did
- Demonstrates that major misconceptions regarding the flu and flu vaccine still remain as the results also show that many of the participants did not know basic knowledge of flu and flu vaccine
  - Vaccination age
  - Vaccination frequency
  - Cause of flu
  - Seriousness of flu

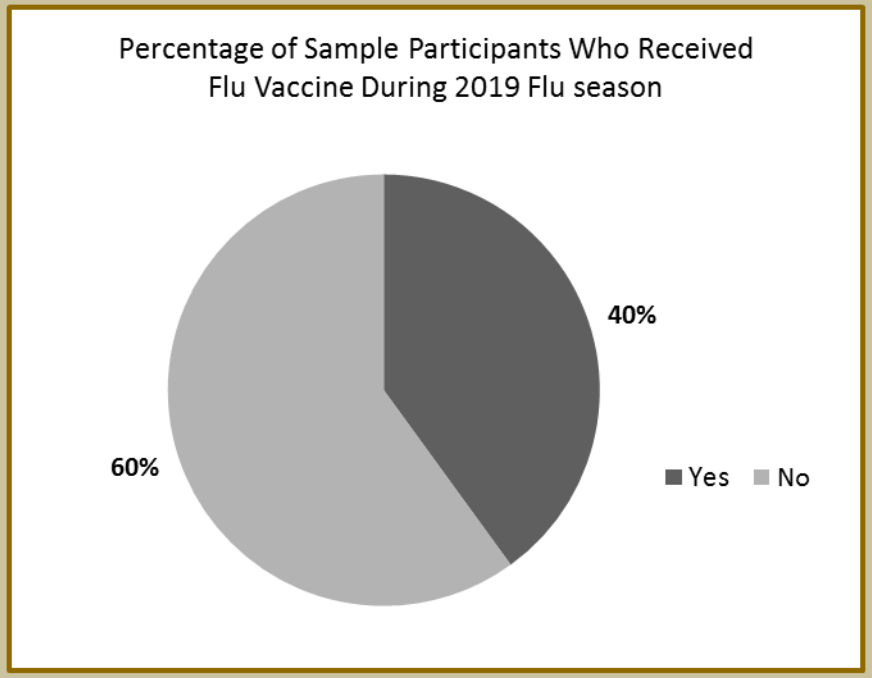

Figure 1: Reliance Family Care Sample Flu Vaccination Percentage

Summary of Findings

- **Educational pathway effective in clarifying misconceptions about the flu and the flu vaccine**
  - Demonstrated by major difference between flu and flu vaccination knowledge and perception pre and post-education
- **Positive participant feedback regarding educational pathway**
  - 96% of the participants agreed that they learned a lot about the flu and the flu vaccine
  - 96% of participants found the educational pathway to be very beneficial
  - 96% stated that it is very important to educate patients about the flu and the flu vaccine
- **Participants more receptive to receiving flu vaccine post-education**
  - 92% stated that are very likely to receive the flu vaccine during the next flu season
  - 8% stated that they are somewhat likely to receive the flu vaccine during the next flu season
  - None of the participants stated that they are unlikely to receive the flu vaccine next flu season

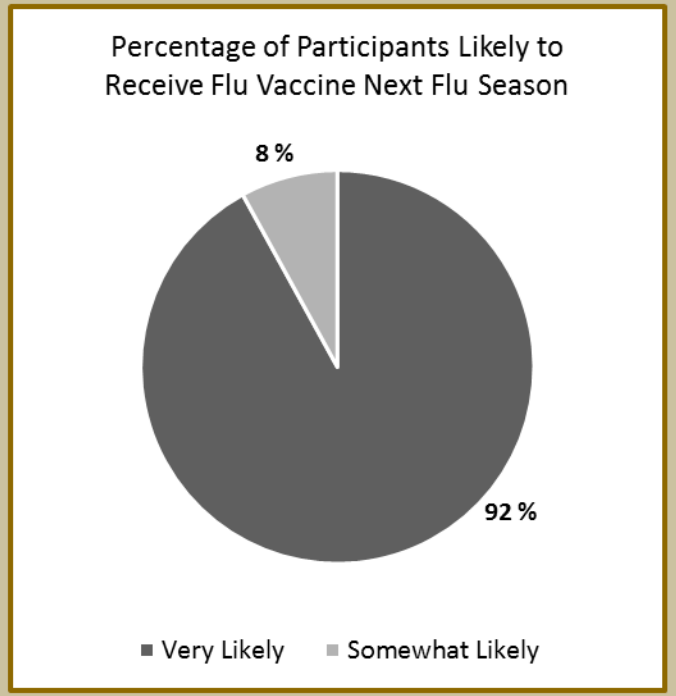

Figure 7: Post-Education Receptiveness of Flu Vaccine

Project Limitations

- Different patient appointment times posed a challenge in completing the pre and post educational activities in groups and in a synchronized manner
- Deemed necessary to separate the waiting area into pre and post- educational activities
  - Pre-educational surveys needed to be completed without any outside knowledge or exposure to educational video or review session

Impact on Practice

- Use of evidenced-based educational pathways to increase flu vaccination knowledge and awareness is a sustainable method for promoting behavioral change
  - Educational videos and materials can be implemented every flu season at minimal cost
- Participants can be further engaged with fun educational activities and incentives
- Educational pathway can be easily disseminated to other local clinics
- Educational pathway is generalizable and transferable
  - 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 facilities allow patients to receive care outside of their primary care clinic's restrictive office schedule and without going to ER
- Flu vaccination education in point of care clinics will protect both the health of the individual and the community
  - Increased chance of herd immunity and decreased risk of infection and transmission rate within community

- Increased knowledge and receptiveness of flu vaccine results in decreased number of deaths, hospitalizations and costs related to treating the preventable disease
- A future practice inquiry about the flu vaccine should determine whether the choice of the flu vaccine type (ex. vaccine shot or nasal spray) will increase the receptiveness
- Project author hopes to disseminate the project at other primary care clinics in the community

Impact on Nursing

- Successful project implementation demonstrates collaboration among healthcare teams results in improved patient health outcomes
  - Collaborative effort among Reliance staff helped in increasing patient knowledge and receptiveness of flu vaccine
- Collaboration can be extended to the multidisciplinary team in any health care organization in order to help with flu vaccination education at every patient encounter
  - Ex: social workers, home health nursing, etc.

- Through 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 by the multidisciplinary team

Impact on Health Policy

- Seasonal influenza viruses are believed to be transmitted from person-to-person primarily through virus-laden droplets generated when infected persons speak, cough or sneeze
- 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 the flu vaccine any time they come to public places
  - Helps decrease transmission of the influenza virus in the community

Value of Project

- Education is an important strategy in improving the knowledge and receptiveness of the flu vaccination among patients during clinic visits
  - May lead to improved vaccination rates
- The quality improvement project had a positive impact on the patients at the Reliance Family Care clinic
- Use of the educational pathway in addressing common misconceptions related to vaccine safety and efficacy had a positive impact on how the participants view flu vaccination

- The knowledge obtained by the patients can be shared with family members, friends and other members of the community
  - Ultimately increasing knowledge and removing barriers to receiving the flu vaccination
- Clinic staff can utilize the educational materials at every patient encounter to help dispel perceptions and attitudes of mistrust regarding the flu vaccine among the patients

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Thank You!