

An Educational Program to Prompt Human Papilloma Virus Vaccine Uptake Intent in Syrian-
American Females to Prevent Cervical Cancer

Nada Hannawi

Rutgers School of Nursing

DNP Chair: Tracy Vitale, DNP, RNC-OB, C-EFM, NE-BC

DNP Team Member: Patricia Hindin, PhD, CNM, CYT-200

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Abstract

Globally, there is minimal literature on the knowledge, awareness, and uptake of the human papilloma virus vaccine and cervical cancer prevention. Specifically, in the Syrian-American female community residing in the United States, there is no research done on knowledge, awareness, and human papilloma virus vaccine intent uptake. The purpose of this project was to develop and implement an educational program on cervical cancer prevention in the Syrian-American female community to increase knowledge and vaccine intent uptake. It includes literature on the challenges, controversy, perceptions, and knowledge of the human papilloma virus vaccine and educational programs on cervical cancer prevention, in several cultures and various countries around the world, taking into account the culturally conservative views and beliefs of cervical cancer and the human papilloma virus vaccine in the Middle Eastern culture. The project also evaluates knowledge and intention to vaccinate before and after implementation, among females in this population with a total sample size of 32 Syrian-American females. The result of the educational program was shown to have statistical significance in knowledge and the intent to vaccinate. The overall project supports the major influence of providers in the patient's knowledge and decision for intent to vaccinate.

Keywords: Human Papilloma Virus (HPV), Human Papilloma virus vaccine, Syrian-American, cervical cancer, educational program

An Educational Program to Prompt Human Papilloma Virus Vaccine Uptake Intent in Syrian-American Females to Prevent Cervical Cancer.

Cervical cancer has become a worldwide leading cause of death in women stemming from the Human Papilloma Virus (HPV). The burden of the HPV infection in females is associated with vulvar, anal, oropharyngeal, vaginal, and the most commonly, fatal type, cervical cancer (Petrowsky et al., 2015). In hopes of preventing cervical cancer from occurring, between the years of 2006 and 2009, a quadrivalent, bivalent and 9-valent vaccine consisting of a three-dose series over a six-month time period, was approved in the United States (U.S.), for females ages 9-26. Currently, there are several educational programs nationwide implemented in the U.S. to increase the usage of the HPV vaccine and decrease the risk of cervical cancer in females. According to Kester, Shedd-Steele, Dotson-Roberts, Smith, and Zimet (2014), a study was conducted exploring an INShape Black and Minority Health fair that was developed to increase awareness of chronic diseases and enhance knowledge of the HPV and the vaccine, in hopes of cervical cancer prevention. In contrast, in the Middle Eastern female population in both the Middle Eastern countries and U.S., there are no educational programs for women's health services are offered. According to Dany, Chidiac, and Nassar (2015), in Beirut, Lebanon "...nationwide programs of cervical cancer screening do not exist or are based on a limited opportunistic cytology-based screening, which often lacks quality assurance" (p. 1002). In addition, there are no educational programs about cervical cancer prevention in the Syrian-American females in the U.S. Specifically, for this project, the literature evidences a gap and prompts the need to increase knowledge to promote HPV vaccine-intent uptake. The vaccine intent uptake in this population is affected by factors such as human behavior and conservative mindset compared to western societies, which are rooted from religious and cultural traditions

(Dany et al., 2015). Because of these identified influences, an educational program about the HPV vaccine was implemented in the Syrian-American female community, aiming to increase vaccine uptake intent and decrease the risk of cervical cancer in the future lives of these females.

Background and Significance

HPV belongs to a group of more than 170 numbered double-standard DNA viruses influencing both the male and female population (Nicol et al., 2016). This asymptomatic virus may never develop symptoms or health problems and can go away on its own. According to Khan, Chhugani, and Arora (2015), most infections clear within about two years.

In males, HPV can lead to cancer of the mouth or throat, including the base of the tongue and tonsils, oropharynx, anus, rectum, and penile cancers (Centers for Disease Control and Prevention [CDC], 2016a). In females it can cause cervical, vaginal, anus, back of the throat including the base of the tongue and tonsils, oropharynx, and vulvar HPV cancers (2016a). Low risk HPV can also cause and present with genital warts (Khan et al., 2015). These warts may show as a cluster of bumps in the genital area as small or large, raised or flat, and/or shaped like a cauliflower (CDC, 2016a). The HPV's mode of transmission is through sexual activity and has a risk of 75-80% in an individual's lifetime (Khan et al., 2015).

Over the last several decades, the prevalence of HPV has increased. According to the Centers for Disease Control and Prevention (CDC) (2016b), nearly 80 million people, about one in four, are currently infected in the U.S. About 14 million people, both male and female, including teenagers, become infected with HPV yearly (CDC, 2016b). Based on the data, reported by the Centers for Disease Control and Prevention (CDC) (2017), HPV has been founded to cause about 39,800 cases of new cancers in the body. Of these cases, about 31,500

are caused by the HPV itself, of which about 28,000 can be prevented using the HPV vaccine (CDC, 2017).

Annually, an estimated 12,200 new cervical cancer cases occur and 4,210 of these are associated with death (Patel et al., 2012). To prevent cervical cancer the most common HPV-associated cancer among women, the Gardasil vaccine was developed and approved by the Food and Drug Administration in June 2006 for females ages 9-26, that both were and not yet been sexually active (Patel et al., 2012). By 2009, the three approved HPV vaccines that have come out, continue to be recommended and used are, Gardasil, Gardasil 9, and Cervarix (Patel et al., 2012). Currently, Gardasil and Gardasil-9 are available for use in the U.S. (Centers for Disease Control and Prevention [CDC], 2018).

There are three types of vaccines, known as quadrivalent, bivalent and 9-valent which target specific oncogenic HPV types. According to Patel et al. (2012), the Gardasil vaccine, a quadrivalent vaccine was approved in June 2006 by the U.S Food and Drug Administration, targeting oncogenic HPV types 16 and 18 and genital wart-associated HPV types 6 and 11. Patel et al. (2012) suggest that,

The Advisory Committee on Immunization Practices (ACIP) currently recommends Gardasil for females ages 9 to 26 for the prevention of cervical, vulvar, and vaginal cancers, and for precancerous lesions and genital warts caused by the four HPV types targeted by the vaccine (p.2).

In 2009, the vaccine was also approved for use in males ages 9 to 26 only for the prevention of genital warts and not for routine use (Patel et al., 2012).

In addition, in 2009, a bivalent vaccine, Cervarix, associated with oncogenic types 16 and 18 to prevent cervical pre-cancers and cervical cancer for females ages 9-26 was also approved

(Patel et al., 2012). Both the quadrivalent and bivalent vaccines have shown effectiveness with minimal side effects. However, published national surveys show that only 10% of females ages 18-26 had begun the HPV vaccine series, and uptake of vaccine was higher, 37.2%, in younger females ages 13-17, after Gardasil vaccine recommendations (Patel et al., 2012).

Gardasil 9, also known as 9-valent, is associated with oncogenic types 6, 11, 16, 18, 31, 33, 45, 52, 58 (Petrowsky et al., 2015). In addition to the other vaccines, 9-valent targets five cancer causing types which are mentioned, that account for about 15% of cervical cancers (Petrowsky et al., 2015). In contrast, Quadrivalent and 9-valent both protect against HPV 6 and 11, types that cause anogenital warts (Petrowsky et al., 2015).

Overall, bivalent, quadrivalent and 9-valent vaccines all protect against HPV 16 and 18, which are the types that cause about 66% of cervical cancers and most of other HPV-attributable cancers in the U.S. (Petrowsky et al., 2015). These vaccinations consist of a three-dose series, over a six-month period, recommended for non-sexually and sexually active females and males, starting at ages 11-12, and as early as 9 years old. According to Patel et al. (2012), sexually active young adults and adolescents are at increased risk of acquiring HPV, therefore prompting a need for HPV vaccine acceptability and uptake assessment amongst college-age individuals.

Needs Assessment

While conducting the review of literature on existing data of educational programs geared towards the HPV vaccine uptake intent, knowledge, perceptions, and attitudes, in general there is a gap in knowledge in the Middle Eastern population globally. According to Al-Shaikh, Almussaed, Fayed, Khan, Al-Tamimi, and Elmorshedy (2014), the influence of cultural and religious factors in human behavior has impacted the knowledge of Middle Eastern females on the HPV and the vaccine. Similarly, Khan, Buksh, Rehman, and Saleem (2016), state that HPV

screening is not implemented in Pakistan because of the taboo influence it carries about sexually transmitted diseases and sexual education, therefore giving a poor understanding of gender-specific diseases and cancers to majority of young females. However, the present, newer, and younger generations are more open minded and not as restrained to their sociocultural norms. According to Dany et al. (2015), “this is reflected in an unexpected high prevalence of HPV infections up to 25% in low risk Middle Eastern women with normal cytology and up to 98% in those with genital warts, pre-invasive, and invasive lesions” (p.1002). These findings demonstrate a need for educating the Syrian-American females in the U.S.

There have been several attempts to address the gap in knowledge about the HPV vaccine and intent of uptake in females ages 18-26 in the U.S., as well as in the Middle Eastern parts of the world. In a study by Kester et al. (2014), an educational session in the state of Indiana was conducted at the annual INShape Black and Minority health fair, comprising of 131 females and males, to increase minority awareness of chronic diseases and enhance knowledge of prevention of disease. Similarly, while not a part of the Middle East, a study done in China by Chang et al. (2013), also included before and after snapshots of the effects of an educational program on employed women and students. The minority population discussed in these projects have the same lack of awareness, therefore substantiating a reason to apply a similar educational session to this group of individuals. The Middle Eastern females’ perceptions, lack of awareness and knowledge of the HPV vaccine and low vaccine uptake intent, promote a need for an educational session.

Problem Statement

The problem that needs to be addressed is the lack of knowledge and awareness about the HPV vaccine and the lack of intent in vaccine uptake to prevent cervical cancer in the Syrian-

American female community ages 18-26. Currently, there are no educational programs for this population in the Orthodox community. Due to the cultures' religious and conservative views, women's health is not openly discussed. The purpose of this project was to move towards fulfilling this gap and addressing the problem, an educational program was implemented to raise awareness, educate females and potentially promote vaccine intent uptake. The PICO question that addresses this issue was, would an educational program prompt human papilloma virus vaccine uptake intent in Syrian-American females to prevent cervical cancer?

Aims and Objectives

The overall aim of this project was to develop and implement an educational program for Syrian-American females ages 18-26 to prompt HPV vaccine intent uptake to prevent cervical cancer. The objectives of this project were to:

- develop and implement a 1-hour long educational program providing education on the effects of vaccination, the goal of cervical cancer prevention, and specifics such as age range and the targeted population to get vaccinated.
- measure participant's knowledge and vaccine intent uptake using a pre and post-test.
- conduct a 30-minute post educational forum as an information based teach-back method and question-answer strategy.

Realistically, the participants were not followed to measure actual vaccine uptake but rather intent to vaccinate. The objectives and aims were in hopes of fulfilling the gap in knowledge about the HPV vaccine and prompt intent of vaccine uptake in the Syrian-American female population.

Review of Literature

The HPV, cervical cancer prevention, and the vaccine have been subject of global research effort for many years. This literature review discusses different existing outlooks of the vaccine in general, the controversy it brings, the side effects of the vaccine and risks it could pose to females taking it. It also discusses the Middle Eastern populations' outlook, perception, attitude, knowledge, and views of HPV and the region's readiness of receiving the HPV vaccine. It includes the emerging strategies for HPV prevention and multiple educational programs that have been developed, or future recommendations to promote HPV awareness and preventing cervical cancer. The review is aimed to support the study in implementing an educational program in the Syrian-American female population ages 18-26 and the effect it could have on receiving the vaccine to prevent Cervical cancer.

In order to support an educational program' project efforts of the HPV vaccine intent uptake in the Syrian-American female population, a search strategy was conducted using databases to identify studies that were relevant to the PICO question. The databases used were CINAHL and PUBMED. The keywords included were: *Human Papilloma Virus*, *Human Papilloma Virus vaccine*, *Middle East and cervical cancer*, *Middle East and HPV*, *women's perspective Gardasil*, *knowledge and attitude of HPV vaccine*, and *Middle East Controversy HPV vaccine*. While using PUBMED, an advanced search was conducted and title/abstract, "5 years criteria," and "humans" was chosen to identify the specific articles in the search fields. Similar and relevant articles tab was used on multiple occasions to find more studies on the topic. The articles specifically discussed Middle Easterners' and Americans' perceptions, awareness, knowledge, intent, existing educational programs, controversy and adverse effects of

the vaccine which will be further discussed in this review of literature. A complete Table of Evidence can be found in Appendix A.

Perceptions, Awareness, and Knowledge

Perceptions, attitude, views, and knowledge of HPV and the HPV vaccine vary across diversity of cultures. Several studies present HPV and the HPV vaccines from different points of view. In one study, that focused on the American female college students with a mean age of 24 from Oakland University, an online self-administered survey using Google forms was used (Navalpakam, Dany, and Hajj Hussein, 2016). The results provided that

the majority agreed HPV is life threatening (79%), the vaccine prevents cervical cancer (62%), and that side effects would not deter them from vaccination (63%). Although two thirds (67%) believed that, based on sexual practices in the United States, female college students in Michigan have a higher chance of contracting HPV, about 50% did not believe they themselves were at risk. High knowledge correlated with increased recommendation for the vaccine. (Navalpakam et al., 2016, p.4)

Similarly, one study with undergraduate students mean age of 21, at a public university, using an online survey study design by utilizing the Precaution Adoption Process Model (Barnard, George, Perryman, and Wolff, 2016). The study indicated that 92.4% of females had heard of HPV and that it is sexually transmitted (Barnard et al., 2016). While students expressed concerns, they had low perceptions of susceptibility to contract HPV, with less than a quarter agreeing that they are at risk of contracting HPV in their lifetime (Bernard et al., 2016). Their main concerns were family or friends finding out about the student getting vaccinated (Barnard et al., 2016). Lastly, a survey of vaccine uptake rate was done that included 51.7% of females reporting they were “very unlikely” or “unlikely” to receive it within the next six months

(Barnard et al., 2016). These reports formulate the gap in knowledge about HPV, and the need to increase awareness and uptake for the vaccine and cervical cancer prevention.

The Middle Eastern culture has a conservative attitude and outlook on sexual behavior and most countries are thought to have low sexually transmitted infections (Dany et al., 2015). With that said, the human papilloma virus and vaccine studies show a pattern in conservative views on this specific topic. The idea of sex before marriage has been historically considered a taboo and not approved of by the clear majority of the Middle-Eastern cultures (Dany et al., 2015). Therefore, the approach to education should be specified, making sure to incorporate the values and beliefs of the Middle Eastern culture. According to a study done among college female students ages 18 and older at the American University of Beirut in Lebanon, an online self-administered survey using LimeSurvey software was conducted (Dany et al., 2015). The study findings included only 16.7% of females were already vaccinated and 36.5% had never heard of HPV before (2015). Sixty-six and a half percent knew HPV is sexually transmitted, while 77.3% did not know if there is a cure or therapy for HPV infection (Dany et al., 2015). Regarding the HPV vaccine, poor to moderate knowledge was explicit in the answers received about the vaccine injection process and age of the ability to get the vaccine, but positively 66.0% knew it is most effective to take the vaccine before starting to have sexual intercourse and that 72% would recommended their college friends to get the vaccine (Dany et al., 2015). Seventy-five percent believed regardless of how conservative families are, healthcare providers and gynecologists should recommend the vaccine to their parents (Dany et al., 2015). More than half, 59.8%, did not believe they are at risk for contracting the HPV infection and lastly, intent of the vaccine increased after the survey and participants finding more information about the vaccine (Dany et al., 2015). These study findings highlight the importance of females' awareness in

whether or not they would be willing to get the vaccine. They also pose the idea and need of launching educational programs in developing countries that offer guidance to adolescents and increase their awareness of the risks associated with HPV infection regardless of whether they come from conservative families or not (Dany et al., 2015). According to Dany et al. (2015), health policy may be developed in countries to help mandate the vaccine at an early age for all females. Eventually, all these plans and interventions will help aid to decrease the incidence and prevalence of HPV and prevent cervical cancer.

Similarly, a cross-sectional study using a convenience method, paper and pencil, was conducted among undergraduate and graduate students, with a median age of 23, in both public and private universities in the city of Lahore, Pakistan assessed knowledge, awareness and perception. According to Khan et al. (2016), 55% knew HPV causes cervical cancer, 53% stated there is no vaccine against HPV and 86% reported women do not need to be screened post vaccination. Approximately 35% stated that the vaccine should be given prior to having first sexual intercourse (Khan et al., 2016). Lack of knowledge of HPV and awareness of the vaccine clearly showed in this study. The level of knowledge in Pakistan is so poor that students thought HPV causes HIV and that antibiotics are a cure for HPV (Khan et al., 2016). Inadequacy of HPV knowledge, especially the lack of knowledge in mode of transmission bluntly exists and is an ongoing global issue.

Another cross-sectional study performed in the Saudi females at Princess Health colleges of Princess Nora Bint Abdul Rahman University, Riyadh, Saudia Arabian medical, dental, nursing, pharmacy, health, rehabilitation colleges ages 18-25. This study assessed the knowledge of risk factors, symptoms of cervical cancer, and awareness of Papanicolaou test as a screening tool (Al-Shaikh et al., 2014). The study informs that “25% of students thought that old age and

sexual/perianal warts are risk factors for cervical cancer” (Al-Shaikh et al., 2014, p.1225). Fewer than half of the students (46.7%) had heard of a pap smear and 38% thought a one-time pap smear is enough (Al-Shaikh et al., 2014). Only 6.1% of students revealed that the vaccine is protective against genital warts, while 8% acknowledged the suitable age for vaccination, 95.7% of students were found to have overall poor knowledge (Al-Shaikh et al., 2014). Al-Shaikh et al. (2014), also discusses the importance of raising awareness and adopting health improving behaviors, while introducing and accommodating new preventative measures. Knowledge deficits exist in all aspects of the study especially in the link between the HPV vaccine and primary prevention measures, which was a key idea in health promotion, discussed prior in the theoretical framework section.

Lastly, not only are perception, knowledge, and attitudes of females ages 18-26 important, but similarly their mother’s perceptions have a substantial effect on the implementation of an educational program for Middle Eastern American females ages 18-26 in prompting Gardasil vaccine uptake to prevent cervical cancer. For the focus of this article is on mothers’ perceptions and knowledge of HPV and the vaccine, a cross sectional self-administered survey of Syrian women ages 26-74, with daughters enrolled in Aleppo primary schools in sixth grade, which is ages 12-13, was performed.

According to Alsaad, Shamsuddin, and Fadzil (2012) a small amount, only about 14.5%, of mothers reported having an annual gynecological exam within a 5 year period and 10.1% had undergone a pap smear test with 35.9% of them having had a positive family history of cancer. Eighteen percent had heard about HPV infection and a third of these mothers had heard of the vaccine as a method of prevention (Alsaad et al., 2012). Positively, 64.3% of participants knew that cervical cancer affects older and younger females, and 53.6% defined it as a preventable

disease (Alsaad et al., 2012). Some 10.4% pointed out that it is sexually transmitted, and 8.4% knew that HPV can cause cancer (Alsaad et al., 2012). Only 11% of mothers correctly indicated that the age for vaccination is 10-12 years old and 4.1% knew the dosing regimen of the vaccine (Alsaad et al., 2012). Overall, only 18% of Syrian mothers had heard of HPV infection (Alsaad et al., 2012). In contrast, a study done by Munsell et al., (2009) reported that some 95% of American mothers in Texas had heard of the HPV infection (as cited in Alsaad, Shamsuddin, and Fadzil, 2012). Results from this study conclude the gap in knowledge of HPV, the vaccine, and cervical cancer and the need for educational programs on what HPV is and the vaccine details, which in turn, may increase acceptance levels and success of reducing cervical cancer rates.

Educational Programs Intervention

While researching perceptions, knowledge and attitudes of Human Papillomavirus, the vaccine, and cervical cancer prevention, among women in the Middle East and America, a trend was seen for the need of educational programs. Several studies have implemented distinct types of educational programs to increase awareness, knowledge, and the gap in uptake of the vaccine. According to Kester et al. (2014), a convenience sampling of 18-26-year olds at the annual INShape Black and Minority Health Fair in Indianapolis and across the state of Indiana, of which 70% were female and were grouped according to pre-educational intervention survey and post educational intervention survey on HPV vaccine knowledge and intent to receive. The study reports an educational intervention that included about a five to ten-minute small group presentation presented by a trained personnel who is knowledgeable in the fields of HPV infection, detection, treatment and prevention (Kester et al., 2014). Topics included were transmission of HPV, related diseases, detection methods, risk factors, prevention, and HPV vaccination. Individuals in the post educational program intervention exposed high knowledge in

HPV. Eighty-six percent of this group had the intention to vaccinate (Kester et al., 2014). In analyzing these findings, vaccination intention and awareness of benefits seems to be low. Lack of knowledge directly effects receiving the vaccine and causes a delay in decision-making, therefore a small educational intervention could improve knowledge of HPV and raising vaccine uptake.

Similarly, a multi-center, cross sectional study of a one-hour educational intervention across the five main geographical regions of Mainland China, choosing six comprehensive universities and 16 companies, was performed. Pre and post intervention on HPV and vaccine knowledge was assessed. A total of 1,146 employed women and 557 female undergraduate students were surveyed (Chang et al., 2013). This included both working women, mothers, and females in undergraduate college. It entailed all the groups previously discussed in prior studies. Both employed women and female undergraduates in the pre-intervention group had low knowledge. Only 28% of employed women and 12% of female students had heard of HPV, with 21% of employed women and 7.2% of students knowing that it causes cervical cancer (Chang et al., 2013). Similarly, only 13% of employed women and 11% of students had heard of the vaccine and 18% and 12% knew that it could prevent cervical cancer (Chang et al., 2013). Post-educational intervention knowledge of HPV increased significantly. Eighty-nine percent of employed women and 59% of undergraduate students knew that HPV infection caused cervical cancer (Chang et al., 2013). Also, post-intervention, employed women's willingness to vaccinate their children increased from 44% to 81% which is almost double the amount. Overall risk factors, knowledge, and HPV vaccination timing identification increased as well (Chang et al., 2013). In review, vaccine acceptability, intention of uptake, and knowledge, were all increased in the post-interventional group studied in China. Willingness to vaccinate increased from 77% to

90% in employed women, and 73% to 82% in students (Chang et al., 2013). These studies showed a similar trend in increase of knowledge and intent to vaccinate post educational interventions which relates to the gap founded in the Middle Eastern American community of females ages 18-26.

On the contrary, there have also been studies done that fail in increasing knowledge and vaccine uptake rates after implementing an educational program. A study performed by Bennett et al. (2015), compared two groups which were formed by the following method: one using a MeFirst tailored intervention website and the other was a controlled website known as the Centers for Disease Control and Prevention Vaccine information statement on the quadrivalent vaccine.

The MeFirst intervention was a unique tailored website, automatically configured for individuals based on their baseline survey responses. Both groups had similar information on HPV and the HPV vaccine, including statistics on the incidence of HPV infection and cervical cancer, risks associated with HPV infection, costs of vaccination, safety and efficacy of the HPV vaccine, and suggestions for how to talk to a doctor about the vaccine. (Bennett et al., 2015, p. 951)

A three-month follow up survey was emailed to participants about their choice of vaccine uptake or declination (Bennett et al., 2015). There was no difference in the MeFirst group versus the controlled CDC information group suggesting that the individually tailored program did not increase rates, compared to the CDC information statement of the vaccine, group (Bennett et al., 2015). Bennett et al. (2015) suggested that increasing knowledge by itself is unsatisfactory in regard to increasing uptake without convenience of immediate on-site vaccination. Lastly, a

commonality founded in the review of these studies, suggested hesitancy due of uptake due to side effects of the vaccine.

Controversy and Adverse Effects

Research has been done regarding the controversy that Gardasil Vaccine raises, and if it should be given to females ages 9-26 or not. According to Nicol et al. (2016), the main reason people are hesitant about the vaccine is because of the adverse effects it can potentially pose on females. Similarly, Al-Shaikh et al. (2014), mentions 51.9% of students report the biggest barrier for HPV vaccine was their concern regarding side effects. Hence, the peer-reviewed scientific data was assessed in the Brazilian Journal of Medical and Biological Research, related to measurable outcomes from the use of HPV vaccines all around the world with dedicated attention on the adverse effects it has on the female population (Nicol et al. 2016). The same study reports a systematic review that was performed involving a sample size of 29,540 individuals and mentions the most reported side effects post vaccine uptake were pain and swelling at the injection site accompanied by fatigue, fever, gastrointestinal symptoms, and headaches (Nicol et al., 2016). Additionally, Nicol et al. (2016) report that in Japan, a serious adverse effect called complex regional pain syndrome, a chronic pain condition effecting a limb such as an arm, occurred in some of the individuals who received the vaccine which caused a stop to both the quadrivalent and bivalent vaccine dispersal. This posed confusion and distrust in the vaccine within the Japanese people.

Another publication from Japan clinically analyzed 44 girls between ages 11-17 years that reported adverse effects following the vaccination with either the bivalent and quadrivalent vaccine with 40 left after an exclusion of 4 due to a different disease diagnosis. The reported statistics and specific symptoms included headaches 70%,

general fatigue 53%, limb pain 50%, limb weakness 48%, difficulty in getting up 48%, orthostatic fainting 43%, decreased ability to learn 43%, arthralgia 43%, limb tremors 40%, gait disturbances 40%, disturbed menstruation 35% and dizziness 30%, mostly explained best by an abnormal peripheral sympathetic response, as authors concluded. (Nicol et al., 2016, p. 2).

Nicol et al. (2016) further provides that regardless of getting vaccinated the vaccine may not protect all individuals and that cancer screening programs should continue regardless of the person getting the vaccine or not. Consequently, even though vaccines reduce the incidence of several infectious diseases, strongly supporting benefits outweighing risks, side effects still need to be closely monitored and reported (Nicol et al., 2016). Hence, as for HPV vaccines, the literature suggests that there are very low chances of side effects with autoimmune responses being of greatest concern (Nicol et al., 2016). Additionally, due to the HPV types present in the vaccine, the prevalence of genital warts has been decreased which suggests lower HPV-positive cancer rates but unfortunately the time frame of total omission has not yet been determined, which is the overall general goal (Nicol et al, 2016).

Goncalves, Cobucci, Rodrigues, De Melo, and Giraldo (2014) reviewed 12 reports of HPV vaccine safety and adverse effects involving some 29,540 subjects. It found that the greatest reported adverse effects seen with the HPV 16/18 vaccine was the following: pain, malaise, flushing, swelling, fever and some upset stomach, gastrointestinal symptoms such as diarrhea, nausea and vomiting (Goncalves et al., 2014). The study outlines that,

Three studies separated their results as general symptoms and injection site symptoms related to the bivalent vaccine were pain, swelling, and redness. GI symptoms were not related to the vaccine. Headache and fatigue were the most reported adverse effects. In

general, there were no registered related vaccine deaths. A recent systematic review also reported barriers including cost, beliefs that vaccination wasn't necessary and concerns regarding vaccine safety and side effects (Goncalves et al., 2014, p. 655-657).

It also suggests that a study done in Denmark and Sweden, they did not acknowledge any harmful adverse effects involving autoimmune, neurological and venous thromboembolic issues after immunization with quadrivalent HPV vaccine (Goncalves et al., 2014). Overall, these adverse effects were all mind in respect to systematic reviews reported.

Summary

As reviewed in the literature, there were a number of similarities on perceptions, knowledge, and attitudes of American and Middle Eastern females ages 18-26 and the effects of an educational program' on HPV vaccine uptake to prevent cervical cancer. Analyzing the literature and studies that were done, there is a commonality and trend in the gap of knowledge in the literature in both the U.S. and Middle East. In the U.S., similarities were found in low knowledge and vaccine uptake rates in state universities (Barnard et al, 2016; Navalpakam et al., 2016). Dany et al. (2015) introduced the conservative mindset that effects the knowledge levels and openness to the topic of cervical cancer prevention and vaccine uptake. Similarly, Middle Eastern college students' views, considering their conservative culture, on knowledge, perception and vaccine uptake in Pakistan and Saudi Arabia were explored (Al-Shaikh et al., 2014; Khan et al., 2016). Alsaad et al. (2012) related the perceptions and knowledge of Syrian mothers and their willingness to vaccinate their daughters, which is linked to the employed women including some who were mothers, in the educational interventional program group in China by Chang et al. (2014). The U.S. identified some differences in their educational program outcomes in that one study had positive results with increasing awareness, knowledge, and intent

to vaccinate versus the other study that had no difference in their individually tailored online website program compared to the CDC website vaccine information program (Bennett et al., 2015; Kester et al., 2014). Lastly, Goncalves et al. (2014) and Nicol et al. (2016) systematically reviewed controversy, adverse effects on the HPV vaccine, and its reported effects post uptake and had similar outcomes in their reports.

The gap of knowledge continues to exist and supports the need for the implementation of an educational program in the Syrian-American community to prompt HPV vaccine intent uptake. As seen in the research, there were a few conflicting studies but the overall benefits of vaccinating outweigh the risks. Providers need to be clear and vigilant about possible side effects, monitoring patients closely, but the public need to be educated as well. Implementing an educational program and tailoring it based on the conservative religious and cultural views of the Middle Eastern population, will be aimed towards fulfilling this gap. Lastly, utilizing the Health Promotion Model by Pender, which will be discussed, supports the need for the implementation of an educational program to increase vaccine intent uptake to prevent cervical cancer.

Theoretical Framework

In 1982, Dr. Nola J. Pender, a registered nurse developed the generally accepted Health Promotion Theory (McCutcheon, Shaar, and Parker, 2016). Her theory best addresses the PICO question: would implementing an educational program prompt Syrian American girls ages 18-26 to receive the Gardasil Vaccine to prevent cervical cancer. Pender's theory is based upon promoting healthy lifestyle behaviors and helping to prevent an occurrence of the disease. Pender et al. (2011) developed her theory after observing healthcare professionals intervening post disease development, rather than aiding in prevention (as cited in McCutcheon et al., 2016). Also, according to Alkhalaileh, Bani-Khaled, Baker, and Bond (2011), the model incorporates a

framework to examine the surrounding influences on participation in health and enhances behaviors providing a pathway for positive interventions. Hence, setting health goals and promoting lifestyle changes to achieve those goals, is a way of disease prevention for society.

According to Alkhalaileh et al. (2011) “the Health Promotion model illustrates that each person is a multidimensional holistic individual who continually interacts with both interpersonal and physical environments and emphasizes the active role of the individual in the achievement of an improved healthy state” (p.12). Hence, it is important to consider a holistic approach during health promotion. The appropriate resources and information given by educated individuals, should be available to the community in order to apply health promotion. According to McCutcheon et al. (2016), there are several community influences in an individual’s surroundings that effects his or her ability to improve their health such as personal factors, including social demographics, personality, family and social support, healthcare providers, social media and lastly intellect. McCutcheon et al. (2016), also state, the observation of positive behavior by an individual’s surroundings, reflects engagement of good decision-making skills and behavior. Educating patients in a holistic manner can result in much better outcomes than ignoring an individual’s surroundings and the effects it has on him or her.

Historically, education has always been an important task of the nursing field and continues to play a big role in an Advanced Practice Nurse’ job duties. According to Kemppainen, Tossavainen, and Turunen (2013), the role of nurse practitioners includes patient education, clinical nursing practices, consulting patients, diagnosis, treatment, and follow up on plans and preventing illnesses. All of these tasks fall under the umbrella of education. Nurse practitioners helping patients learn how to care for themselves, making individualized health plans, and teaching them to make smart, healthy choices for their wellbeing has been the key in

improving health. Per Kemppainen et al. (2013), health promotion by Advanced Nurse Practitioners may lead to uprisings in health outcomes, including the patient's quality of life, knowledge of their own health and disease, and self-reliance in managing his or her health.

Pender's theory of health promotion directly reflects implementing an educational program to prevent cervical cancer and promote the Gardasil Vaccine in Syrian-American females ages 18-26. According to McCutcheon et al. (2016), the incorporation of educational programs on HPV health-promoting behaviors into nursing-based programs is needed to decrease the incidence of HPV infection. In addition, empowerment through education of HPV also positively reflects on an individual's health status (McCutcheon et al., 2016). Educating all females including moms, daughters, friends and family members of the community on receiving the HPV vaccine, empowers the individual which in turn, may make them educate others around them about cervical cancer prevention, which all ties in together to health promotion.

In conclusion, Pender's theory, in relation to promoting the Gardasil Vaccine in the Syrian-American female population ages 18-26, supports teaching this population to care for themselves and partake in their daily health to prevent cervical cancer in the future. Current HPV related literature specifically points out a lack of knowledge about HPV which results in minimal awareness of susceptibility and low rates of vaccine uptake (McCutcheon et al., 2016). Getting educated on the HPV vaccine starting at an early age, getting vaccinated and passing this information on to family members, friends, and the community will help spread the importance of this phenomenon. Educating females around the world what the vaccine's purpose is, the effects of it, what it prevents, and what age group should receive it, directly mirrors health promotion and an educational program to decrease HPV prevalence and prevent future cases of cervical cancer. See Appendix B for Conceptual Framework. As mentioned previously, Pender's

Health Promoting Model (PHPM) takes into account the social and psychological aspects of an individual creating biopsychosocial practices to analyze and encourage individuals to participate in their own health-promoting behaviors (McCutcheon et al., 2016). A few of these associations made in the model, consist of self-efficacy, empowerment, participation, and community (McCutcheon et al., 2016). These offer education guidelines of the Human Papilloma Virus for nurses to formulate education-based programs (McCutcheon et al., 2016).

Methodology

This DNP project explored the use of an educational program in prompting HPV vaccine uptake intent in the Syrian-American females, specifically within the Syriac Orthodox community, to prevent cervical cancer. The community center, for the project, is made up of a large community of people originating from various countries in the Middle East. It is a religious congregation where all events related to the community, take place. The community center's leadership agreed to support this study by offering a private room, free of charge, and by including participants of its community, for the educational session.

Project Design

The design of this project constituted a pilot study consisting of an educational program, centered on the use of HPV vaccine, aimed towards the prevention of cervical cancer with a guided post-education open forum.

Setting

The community center used for the study agreed to support this study and provided a private room for the educational and data collection session, free of charge. The educational program was open to the Syrian Orthodox members and non-members alike, as long as they met

the inclusion criteria. An estimated number of 50 participants, who met the inclusion criteria were invited.

The community center is a church and monastery in Bergen County, NJ. According to the Syriac Orthodox Church of Antioch Archdiocese for the Eastern United States (2017), the Syriac Orthodox Church has been a member of the World Council of Churches since 1960 and is one of the founding members of the Middle East Council of Churches. The Church takes part in ecumenical and theological dialogues with other churches (Syriac Orthodox Church of Antioch Archdiocese for the Eastern United States, 2017). As a result of these dialogues, the Church has issued two joint declarations with the Roman Catholic Church and another with the Eastern Orthodox churches (Syriac Orthodox Church of Antioch Archdiocese for the Eastern United States, 2017). The community center is supported by its community parishioners.

Study Population

The intended population pertinent to this study consists of Syrian-American females from any spectrum of Syriac-Orthodox religion, ages 18-26, not limited by marital status. Based on the total number of Syrian-American females who met the inclusion criteria, a projected sample size of 50 participants were anticipated to attend.

Subject Recruitment

Recruitment took place by advertising through a flyer (see Appendix C). Such flyer was to be placed on each table and posted throughout the facility for members of the community at the social hall after Sunday mass. The flyer was to be available for sharing with friends and family. Also, recruitment took place via electronic mail where initial contact was through the youth director who has approved this project to take place at the facility. The youth director in-turn distributed information specific to the project. The flyer was dispersed through an

attachment to all youth leaders of the community by the youth director, as the standard use of communication. Flyers were provided to church youth leaders who in turn distributed them electronically to members of the congregation on behalf of the investigator to email addresses on record at the church. The email sent to the youth leaders explained that they were being requested to distribute the email to potential subjects and offered an opportunity to opt out of the recruitment effort for this study. Youth directors had no other role or involvement in the project. The PI did not gain access to the youth leaders' email addresses; instead the youth director was the only individual with access to their email addresses and distributed an email to the youth leaders to disperse the flyer (see Appendix D). Access to email addresses of congregation members were based upon emails on records and used for routine use by the church. All communication to the youth leaders was done via the youth director.

The number of participants was known the day of the educational program based on who showed up in order for the program participants' identity to remain confidential and protect any sort of emotional factors that may have influenced the decision of the participant to attend. Participants included for the educational program were those identified as a Syrian-American female; be between ages 18 and 26 years; any marital status; not pregnant; not self-identified as mentally disabled; with children of her own or not; and be able to speak and read English proficiently. Participants who did not meet the criteria such as a pregnant female, female with self-identified mental disability, female younger than 18 years old or older than 26 years, non Syrian decent, and did not speak and read English, were excluded. Participants could have been members of any Syrian-American church belonging to the Syriac-Orthodox community.

Consent Procedure

The consent form followed the Rutgers IRB suggested template with suitable modifications made to meet the objectives of this project (see Appendix E). Each consent was provided to the participants prior to the beginning of the educational session. The consent was explained to all the participants and all questions pertaining to the consent form were addressed prior to participation. Before signing or declining, each participant was individually asked if they understood the consent and specifically understood their option of choosing to withdraw from the educational session at any moment without the need to justify such withdrawal. The consent required for participation in the study advised and emphasized that their participation is completely voluntary and could withdraw at any point during the intervention without any reasons and/or consequences. Consent forms were kept separate from the pre and post intervention evaluation surveys. The collected, signed consent forms were kept in a locked cabinet stored in the Stanley S. Bergen Building room 1134 at Rutgers University, Newark, New Jersey.

Risks/Harms/Ethics

One of the primary goals of this project and working with the participants was to offer a comfortable, supportive, educational, environment to all Syrian-American females in the Syriac-Orthodox community. This intended to bring together young Syrian-American females, without inflicting any harm, bias, or judgement upon each participant. By having educated them on the importance of receiving the human papilloma virus vaccine, in aims to protect themselves and take care of their present and future health.

The participants sought out for this project were not considered to be a vulnerable population. None of the participants included as subjects were pregnant, had mental disability,

were less than 18 years old, or were older than 26 years old. Prior to the educational session, participants were given a Rutgers IRB guided consent suitable for the nature of this project to read and sign at their own will. Participants were given time to ask questions and voice their concerns at the end of the educational session during the open forum. Participants were reassured that all questions, comments, and concerns were kept within the educational session and any personal information shared in the group, were not repeated to anyone outside of the educational session. Participants themselves were also asked to maintain all confidential information within the group of participants.

An inherited risk in most studies is the loss of confidentiality. To minimize such risk, all private and identifying information was securely kept. Additionally, withholding anonymity and not sharing the names and information of the participants, was reiterated several times throughout the projects entirety. A private room was provided by the community center with a closed-door system for prevention of anyone passing by the hallway from hearing the group content. By agreeing to participate in an anonymous project, the participants agreed to keep the information shared confidentially and completely private from individuals outside of the project.

An additional risk of emotional distress, discomfort, or unease with the topic of discussion may have existed. A discussion such as this, about vaccines, cervical cancer, and women's health in general, may have led participants to feel uncomfortable due to the nature of the topic. Because of this, participants had the option to discontinue participation at any point without any penalty or consequences.

Benefits

Subjects were expected to benefit from an educational session that will provide valid, educational information on the Human Papilloma Virus vaccine and cervical cancer prevention.

Subject Cost/Compensation

At the educational session, pizza and refreshments were provided for participants free of charge. No monetary compensation was provided for participation. Participants did not incur any costs to participate in this project.

Intervention

An initial demographics and pre-test assessment questionnaire, in paper and pencil form, was provided to the participants, allowing them time to provide responses to the questionnaire (see Appendices F and G). The intervention consisted of an educational session that lasted approximately 60 minutes and was organized using valid information, data, and facts from the Centers for Disease Control and Prevention government website, through a PowerPoint presentation (see Appendix H). The educational session and subsequent open-ended forum took place in the summer of 2018 and was completed in a total of two hours from beginning to end.

After the one-hour educational program session in PowerPoint form was implemented, a post-test questionnaire was provided (see Appendix I). After the post-test questionnaire was collected, a 30-minute educational guided open-ended forum was offered, led by three specific questions (see Appendix J). The structure of the project followed these steps: 1) introduction, consent, purpose, objectives; 2) demographics and pre-test; 3) educational session with refreshments, 4) post-test; 5) post educational guided open forum 7) closing of the project.

Timeline

The process of this project began with development of the proposal during the 2018 spring semester. The proposal was presented to the DNP Chair and DNP Team Member of this project on May 7, 2018. Upon approval from the DNP Chair and DNP Team Member, the proposal was submitted to the IRB through their online portal for evaluation. Recruitment lasted

one week. The education took place over one day, at the conclusion of recruitment period. Data analysis and final write up of results took place in the Fall of 2018 along with presentation of findings to project team members and other key stakeholders. A complete timeline can be found in Appendix K.

Project Budget & Resources

The budget for this project consisted of printing consents, pre-tests/post-tests, flyers for recruitment, pens, 8 pies of pizza, cookies, a few bottles of soda and water, paper plates, and plastic utensil supplies costing about \$120. A poster for the presentation costed approximately \$50. The total amount estimated was \$170, which is the assumed total responsibility of the entire cost of the project. Participants did not receive financial gain from this project. A full project budget can be found in Appendix L.

Outcome Measures

The evaluation of the intervention was assessed through the use of a post-intervention test given at the conclusion of the educational session before the post educational open forum. The post-test determined if the goals and objectives were adequately met, and evaluated increased intent of vaccine uptake.

Instruments

The instruments used for the study included a 10 minute pre-test, 10 minute post-test questionnaire to evaluate the knowledge gained from the educational session, as well as questions about intent of the participants to vaccinate. Permission was obtained to use the HPV Knowledge Questions tool developed by Kester and consisted of 15-knowledge based questionnaire. Answers were summed to form knowledge evaluation scores and used for the

analysis. Despite the questionnaire being used in a previous study, results of validity and reliability were not available. In addition to the 15-knowledge based questions, one additional question was included to determine participants' intent to vaccinate. In addition to the quantitative data collected, qualitative data was collected from the focus group. The focus group discussion were guided by the questions found in Appendix J.

Evaluation

Demographic data was collected and analyzed using descriptive statistics. A paired sample t-test was used for the data assuming the data is normally distributed, for the 15-HPV knowledge based questions. The test was scored as "1" point for every correct answer and "0" points for every incorrect answer, with a total score accumulated at the end. The sum total was used and additional questions were asked about intent to vaccinate. The questions about intent to vaccinate were included in the 15-knowledge based questionnaire scoring, but instead were asked and evaluated separately. Answers for intent to vaccinate were coded as "Yes" or "No" and reported in percentages. A thematic analysis was done for the focus group to generate data. The analysis included the steps of reviewing the data, generating initial codes, looking for themes, reviewing identified themes, defining and naming those themes, and then writing the results of them. The qualitative data was done by the principal investigator and the chair of this project to ensure that all data was reviewed and interpreted without missing any information. Any discrepancies were resolved among the reviewers.

Data Maintenance/Security

After signing consent each participant was assigned a number. Each individual participant was given materials with their participant number. The responses were anonymous and did not contain any identifying information. A master participant list was typed up in an

Excel spreadsheet (see Appendix M), which linked the participant to their assigned number. The link to participants was destroyed at the conclusion of data entry. All de-identified data and consents were kept in a secure, locked cabinet in the Stanley S. Bergen building room 1134 at the office of Dr. Tracy Vitale, Rutgers University Newark, NJ in accordance with the Rutgers University Office of Information Technology Guidelines.

Results

A total of 32 participants consented to participate in the educational program intervention and completed the demographics questionnaire, pre-test, educational program, answered the post-test, and took part in the 3-question open forum discussion. While the number of participants failed to meet the anticipated enrollment of 50, the sample size was sufficient for a pilot study. The findings of the pre-test, post-test, and open forum discussion, will be discussed in the later section titled “Results of the Pre-test, Post-test and Open Forum Discussion.” The collection occurred on August 30, 2018 after the completion of the educational program intervention. The dataset was created using Microsoft Excel, based on a coding, numbered system that was previously described in the *Evaluation* section. The data was reviewed by the DNP team and reported in tables and charts.

Sample Demographics

The demographics, pre-test, post-test, and open forum discussion was answered by all 32 participants through paper and pen, during the educational program session. The quantitative data was analyzed using a paired t-test. The sample demographics are reported using descriptive statistics and depicted using pie charts and bar graphs. Figure 1 displays participants by age. The data shows that the majority of participants (n=16, 50%) were between the ages of 25 and 26 years old. The second largest group was between the ages of 23-24 (n=9, 28%). Ages 21-22

(n=4, 13%) and ages 18-19 (n=3, 9%) were the remainder of participants' ages that participated. Marital status and education level of completion was also included in the demographics. Figure 2 depicts marital status and figure 3 depicts participants' level of education completed. The number of single females (n=24, 75%) was the majority of participants whereas married females (n=8, 25%), was less than half of the participants. The highest education level of the majority of participants was a bachelor's degree (n=21, 66%). The second highest was high school (n=7, 22%), and the least were associates (n=3, 9%) and master's (n=1, 3%).

Educational Pre-/Post-test and Intent to Vaccinate

The pre-test and post-test knowledge scores increased post educational intervention. The mean score before the intervention was 10.53 out of 15 (70%) and the mean score post intervention was 12.97 (86.5%). In correspondence to these scores, the intent to vaccinate increased post intervention as well. Pre-intervention, those stating they had an intent to vaccinate was about 34.38% and post intervention intent to vaccinate was 71.88%. A paired sample t-test was used to find the p value resulting with $p < 0.0015$ proving statistical significance.

Open Forum Discussion Themes

The open forum discussion responses were grouped into themes identified by the PI on a basis of the majority of participants' like responses for each of the three questions. For question number one, "*What are your thoughts on the vaccine?*" one of the most prevalent themes was the benefit of the vaccine. Many participants responded with an answer having to do with the vaccine benefitting either themselves or others. An example of about benefit is a participant's response,

I think it is important to give young people the vaccine to ensure they are protected before engaging in sexual activity. It's also important for this individual to understand what the vaccine is for and how the virus can be prevented by giving it.

Another responder said: "Despite me taking it, everyone should get the vaccine. There aren't any major symptoms and there's a significant purpose to it." "Receiving the vaccine seems to be the right move. I think that the risks from not receiving the vaccine are greater than some of the possible harmful effects of the vaccine," said another partaker. The next common theme observed in this question was about knowledge. Many participants portrayed the importance of knowledge with their responses when saying,

I believe the vaccine is a good thing to get. I feel positive towards vaccinating in general. I think getting this vaccine will help prevent women and men from getting infected and also from spreading HPV to more people. The more people get vaccinated the less likely of an outbreak.

This serves as a knowledge basis in knowing and understanding the importance of the HPV vaccine and who the target population is. Another responder said: "Like other vaccines we are given as a child, the HPV vaccine should be one of them. I believe it is ignorant to not vaccinate for something that can very much happen to you." This participant shows awareness and knowledge that anyone can get cervical cancer and directs her answer at the fact that the HPV vaccine can help prevent cancer from arising. The majority of the participants showed awareness and knowledge of getting the vaccine in their responses.

Question two asked "What factors prevent you from getting the vaccine?" Grouping these responses into themes, the PI found that the majority of participants had no factors preventing

them from getting the vaccine and/or already were vaccinated. On the contrary, a few responders said “fear” was a reason for them not to get the HPV vaccine as well as “side effects,” which were the next two themes observed. For example, one responder said, “fear of the severity of symptoms,” combining both themes together. Some lack of knowledge was also observed and intertwined in these responses when a participant said; “being married with 2 kids, if I wasn’t married I would’ve done it.” Another said, “I don’t like vaccines, they inject a virus in you.” This was clearly a response linked with knowledge deficit.

Question number three explored “What would you say is your biggest influence in receiving or not receiving the vaccine? (For example, parents, doctors, peers, other)” The common response was doctors and parents. One participant said both,

My doctor and parents are my biggest influence in receiving this vaccine. My pediatrician recommended I get the 3 shots at age 13 and educated my parents on the benefits of receiving the vaccine. I became aware of the benefits as I got older and became more aware of women’s health issues.

Another respondent said both, but leaned towards one more than the other stating, “Even though my doctor suggested it, my mother was my biggest influence because she basically wants the best for me and to be safe in the future.” An interesting statement brought up the concern of parents and their thoughts and views of the vaccine when she reflects on her parents as influencers when she stated,

Going back to ignorance our and parents, the people in our community have this idea in their head. Whether it would help or not, they believe it ‘won’t happen to us, to my

daughter, and/or my granddaughter.’ I also believe young women are afraid to tell their mother they want to see a GYN.

Discussion

All participants that took part in the educational program identified themselves as Syrian-American females. Each of the following objectives of this project have been met; a 1-hour long educational program that was developed and implemented providing education on the effects of vaccination, the goal of cervical cancer prevention, and specifics such as age range and the targeted population to get vaccinated, a measurement of participant’s knowledge and vaccine intent uptake using a pre and post-test was done and 30-minute post educational forum as an information based teach-back method and question-answer strategy was conducted. The overarching aim of this project to develop and implement an educational program for Syrian-American females ages 18-26 to prompt HPV vaccine intent uptake to prevent cervical cancer, was also met. Education on cervical cancer prevention needed to be addressed in the female Syrian-American community and it was, as evidenced by a lack of literature and a lack of educational resources demonstrated by the pre-test, post-test, and open forum discussion responses. In agreement with the purpose of this DNP project, the youth director approached the Principal Investigator and decided to request the start of an official educational program. This will include a series of topics and multiple sessions on women’s health to provide a solution for the lack of knowledge among the community. This is the first educational program that will be started and implemented in the Syrian-American female community, as known by the Principal Investigator. The facilitators of this project was the youth director’s support for the project, dispersing the emails to the youth leaders and the congregation in the recruiting process. The interest of the participants in the topic and word of mouth helped make this project work. Some

positive unintended consequences of this project was the upcoming and/or start of future educational sessions for the Syrian-American community.

Using the open forum discussion to gather the participant's thoughts on different aspects of cervical cancer prevention and the HPV vaccine has taught the PI that a doctor and/or practitioner is the biggest influencer for these females. In turn, these responses showed the PI how crucial it is to incorporate education for both parents and young female patients about the vaccine and cervical cancer prevention. This will make the PI an even more effective, comprehensive practitioner after the collection of this informative data.

Limitations

Due to the conservative views, the sensitive nature of the topic of this project, and limitation on time recruitment it was difficult to obtain a larger population. Similar studies should be duplicated using a larger size of participants. The smaller sample size resulted in restrictions to potentially make a bigger difference, increasing knowledge and intent to vaccinate, on a larger scale while also limiting generalizability. Collaboration with the church board members, leaders, and congregation, can result in impacting the community on a greater level. This DNP project was the first to investigate the lack of knowledge and intent to vaccinate to prevent cervical cancer in the Syrian-American female community. A convenience sampling was chosen as the method for recruiting participants. The recruitment strategy included the use of electronic mail with the attached flyer sent to the membership list of females in the community, ages 18-26 years old by the youth director and youth leaders. A major limitation of this DNP project was the lack of recruitment time due to the limited time frame of 7 days between eIRB approval and the scheduled date of implementation. This limited reaching participants of the entire community due to the deficiency of time for word of mouth in the community. Another

limitation of the project was the inability to post flyers in the church social halls for the community to see on Sundays after mass due to an annual church picnic that was scheduled on August 25, 2018, resulting in the closing of all the community churches and potentially decreased the amount of participants to recruit. Instead of the anticipated 50 participants, only 32 participants attended. Also, another limitation was the hesitation of the Syrian-American females to attend due to the absence of research studies ever being done in the community, limiting participants. Lastly, an overall limitation included a generalized lack of awareness and support for women's health education because of the conservative views and taboo thought process on the topic that continues to exist in the Syrian-American culture and community.

Implications

The theoretical framework that guided this project is known as Nola J. Pender's Health Promotion theory. This model helped to implement and adopt innovative strategies such as creating and implementing an educational program with the hopes of increasing knowledge and intent to vaccinate to promote cervical cancer prevention in the Syrian-American female community between ages 18 to 26 years old. The implications of this DNP project as they relate to clinical practice, healthcare policy, quality, safety, knowledge and education are discussed in this following section.

Clinical Practice

The findings of this project raised concern about the lack of knowledge Syrian-American females have about women's health issues. It also showed a concern for their major influencers and the importance of raising awareness for practitioners in educating females and their parents about women's health disparities and specifically cervical cancer prevention. The third open forum discussion question and answer teach-back strategy showed a weighted concern about the

opinion of the care provider. Going forth and having this information will impact the investigator's future practice as a provider. This in and of itself disclosed how important it is to provide patients with an adequate amount of evidence-based information to increase their knowledge and help them make informed, safe decisions about their care.

Healthcare Policy

Policy changes are needed amongst practitioners and the Syrian-American community. Practitioners such as pediatricians, gynecologists, and nurse practitioners can potentially offer more education and provide medical knowledge and facts to parents during well visits with their children. Also, funding by all insurances exists for the human papilloma virus vaccine and should be offered and given information about during office visits. The underserved populations also have the ability to go into a planned parenthood clinic and get vaccinated. In turn, the Syrian-American community as a whole needs to change their conservative views and become more accepting of such health disparities that exist. Women's health issues need to be openly discussed to protect the youth of the community from future illnesses. Providing education and implementing health education programs to all four of the churches can be a healthcare policy change and in turn become a nationally implemented intervention.

Quality and Safety

This project has assisted the Principal Investigator in applying evidence-based information in her own future practice. It has supported the ability to provide safe and quality patient care. Promoting and educating patients about cervical cancer prevention, in hopes of increasing knowledge and awareness about vaccinating, will result in a decrease of health disparities. Also, this project has assisted in learning about giving patients an adequate amount of information to make an informed evidenced based decision on their own care, such as seen in

this project, which can make a difference and improve quality and safety in their care. The results of this project may guide other practitioners into applying evidenced based information into their own practice.

Knowledge and Education

The findings show a lack of knowledge and education on cervical cancer itself, cervical cancer prevention, overall women's health issues, and prevention of women's health problems in the Middle Eastern populations globally. Women's health is not typically addressed in the Middle Eastern culture as far as the PI is aware, as evidenced by the lack of knowledge in the literature and in the Syrian-American female community in New Jersey. However, as mentioned previously, there is a possibility of future educational sessions on women's health, as per the youth director. The participants also expressed their desire to have more sessions on women's health topics, due to their lack of education. A key recommendation that can be given is the importance of knowledge and awareness of women's health to emphasize the changing mindset and views of the modern and upcoming generations that make up a sector or community in the U.S. and are the future of the Syrian-American community.

Dissemination

In addition to a final presentation to the DNP project team, the results of this project will also be presented via a poster presentation at Rutgers School of Nursing in Newark in April, 2019. Findings from the project were shared with the local Syrian-American community to increase awareness of the need for women's health education. The youth director, participants, and members of the youth, will all be made aware of the DNP project results. Also, a future goal of the Principal Investigator is to publish in *Women's Health: A Clinical Journal for NP's*.

Sustainability

There are various opportunities for sustainability of the educational program implemented through this DNP project. The Principal Investigator had a unique opportunity to become more skilled in presenting educational lectures on women's health and supporting the youth of the Syrian-American female community in learning about an important health topic. It is a goal of the Principal Investigator to become a more qualified facilitator so that multiple, ongoing, educational sessions can be established in the Syrian-American female community in which the project took place in. Education is a positive way for the Principal Investigator to give back to the community. In completing this project, the Principal Investigator was approached to start an educational program guided by a series of women's health topics. This project became a foundation for future educational programs that will be developed by the Principal Investigator and the youth director in the Syrian-American community. This unique opportunity served as a major purpose of contribution, sustainability, and a new invention of ideas.

DNP Experience

Good communication skills and effective mentoring of a DNP student are important essentials for the success of the DNP Project. The leadership and active mentoring received during development of this DNP project was very helpful and useful in helping drive this DNP project. The process of developing, writing, and implementing this project in a timely fashion was demanding and challenging considering the time limitations. Despite the narrow focus of this project and lack of awareness of the specific culture chosen to use in this project, interested faculty to take on this project was not difficult and allowed for an easier transition into the researching and writing aspects of this project. The topic of this project proved to be challenging, yet important, to address among the intended population due to the conservative cultural views.

During the writing of this project a helpful amount of feedback and assistance was received by both the Chair and also by the Team Member. This certainly helped to make it a motivating proposal from the start through completion. Feedback from the youth director was also used to guide the development of this project. The youth director's availability and positivity in this experience helped drive the success of this project. Additionally, a connection was made with the females of the community, opting for additional educational sessions on women's health.

The process of submitting this project's proposal for the Institutional Review Board (eIRB) was direct. The Chair of this project assisted in the application process from the beginning to the end and assisted in formulating adequate responses to the IRB about the proposal. With the support received by the Chair, the PI was able to successfully navigate through the IRB with approval in a timely fashion and implementation on the initial scheduled date and time, without having to postpone the intervention. The experience of the DNP project has developed an increased interest in educating the Syrian-American female community on women's health, as well as educating individuals about women's health in general and aspiring to become a university professor in the future.

Conclusion

The findings of this DNP project support the need for women's health education in the Syrian-American female community. In general, there still remains some ongoing conservative views in the Syrian-American culture, as evidenced by the data collected, but the new generations and the females born and raised in the U.S. do not carry these views and instead, are open minded. This is a positive finding but the lack of knowledge, also places these females at risk for lacking information on women's health problems they may face in their lifetime. This DNP project found that increased awareness and education with a focus of prevention on

women's health disparities, can make a positive impact and potentially lessen future illnesses.

Overall, the aim of health promotion was met in this DNP project and intent to vaccinate increased post educational program. At this point in time, the Principal Investigator will optimize her efforts in bringing more women's health education into the Syrian-American female community with the help and support of the youth director. This project is the foundation of future educational programs and will be sustained in future practice. The data collection has helped shape the Principal Investigator's major implications of education, in future practice.

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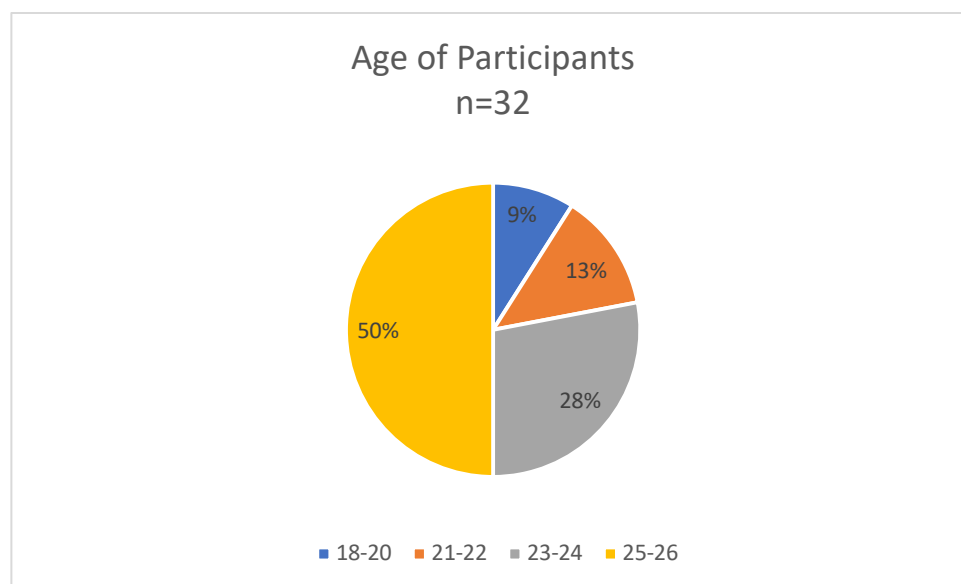


Figure 1. Age of participants as reported in percentiles.

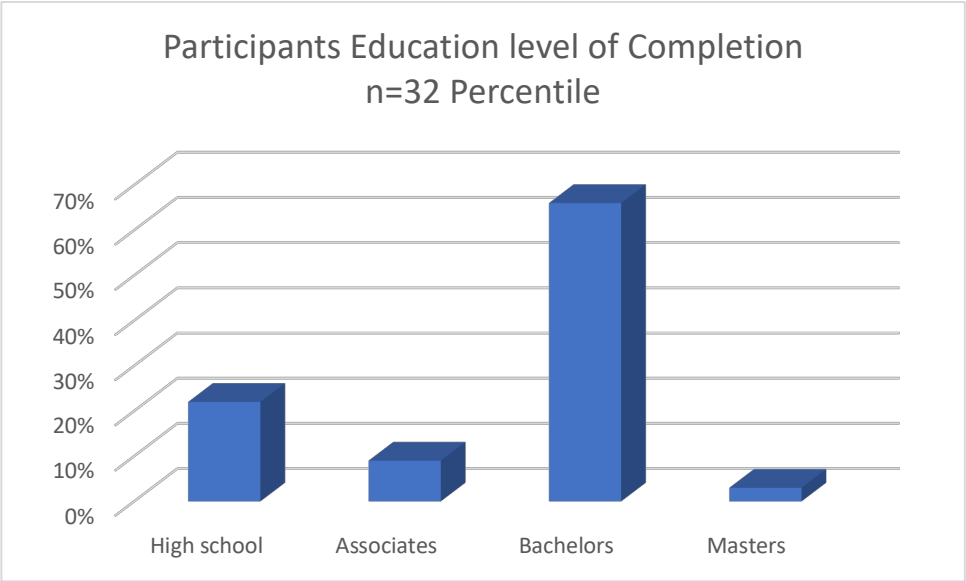


Figure 2. Participant’s education level of completion reported in percentiles.

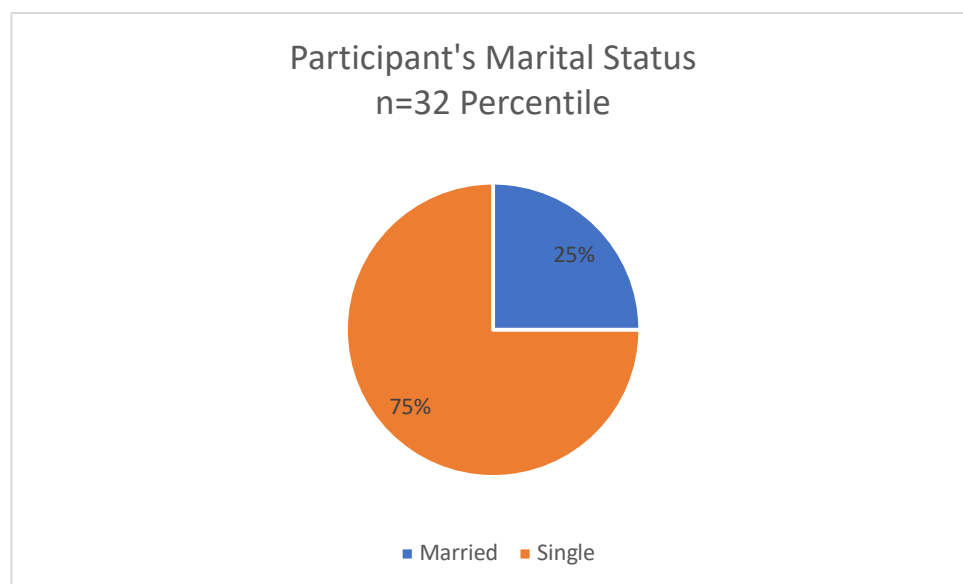


Figure 3. Participant's marital status as reported in percentiles.

Appendix A

Table of Evidence

EBP Question: Would a Gardasil vaccine education program prompt vaccine intent in Syrian American females ages 18-26 to prevent Cervical Cancer? A pilot study

Date: February 26, 2018

Table 1

Table of Evidence

Article	Author, Date	Evidence Type	Sample, Sample Size, Setting	Study Findings that help answer EBP question	Limitations	Evidence Level & Quality
#1	Navalpakam, A., Dany, M., and Hussein, H. I. (2016)	Cross-sectional survey	Undergraduate female students ages 18 and older, average age of 24 with a range of 19-54. N=1,000 n=192 completed the survey An online administered survey by Oakland University in Rochester, Michigan, United States	Participants average knowledge of HPV was moderate, about 53%, but perceived themselves as not part of the issue of HPV. Contributes by revealing the knowledge about HPV needs to be made available to the public without only going through a health care provider. Positive intention regarding vaccine uptake was inferred after gathering more information and completing the survey.	The sample size was chosen by convenience and no power calculations were done, it was randomized from a list of online enrolled students. Out of N=1,000 females, only n=192 participated. A larger nationwide survey might offer more significant results. A more inclusive survey would offer more impactful information on the barriers to vaccination.	Research Level III, C, Low quality

#2	Bernard, M., George, P., Perryman, M. L., Wolff, L. A. (2017)	Cross sectional online survey study	Undergraduate freshman students Mdn=21 Public university in the state of Mississippi, United States. n=383	<p>Students had a high percentage of knowing what HPV is, but low perception of susceptibility to contract HPV</p> <p>Less than a quarter of respondents agreeing that they are at risk for contracting HPV in their lifetime.</p> <p>Approximately 90% of students were aware that HPV is sexually transmitted, but their main concerns were having family or friends find out about getting vaccinated and the stigma it holds due to the lack of importance and awareness of it.</p> <p>Vaccination intention was low, with 51.7% of females reporting they were very unlikely to get the vaccine within the next six months.</p>	<p>Use of a cross-sectional survey design and self-report measures.</p> <p>Sample includes only those who self-selected to participate.</p> <p>Survey instrument combined items from previous investigations of HPV in college students and added additional constructs.</p> <p>The exploratory study did not validate the replicated instrument.</p> <p>Further research is needed to investigate the reliability and validity of the assessment.</p>	Research Level III, C, Low quality
#3	Dany, M., Chidiac, A., Nassar, H. A. (2015).	Cross sectional survey	Students ages 18 and older attending University of Beirut, in Beirut,	215 respondents participated in a Questionnaire using LimeSurvey software that educates about the	The general Lebanese female population was not represented.	Research Level III, B, Good

			<p>Lebanon (AUB). n=512.</p>	<p>knowledge, attitude, and intention of the HPV vaccine.</p> <p>Post survey, both groups that were aware and unaware, vaccine score' intent increased significantly, emphasizing the importance of awareness to promote female's intent and decision of vaccine uptake.</p>	<p>Small percentage of the population is low socioeconomic status</p> <p>Participants were not asked about their history of sexually transmitted infection.</p>	
#4	<p>Khan, M. T., Buksh, A. M., Rehman, U. I., Saleem, A. (2016).</p>	<p>Cross sectional survey</p>	<p>Females enrolled in public and private Universities in Lahore, Parkistan.</p> <p>Age Mdn= 23.</p> <p>n=390</p>	<p>26-item questionnaire-based survey regarding knowledge of HPV and its vaccine was presented.</p> <p>390 students responded.</p> <p>Poor understanding of health problems associated with HPV.</p> <p>Lack of awareness about the availability of the vaccine and modes of transmission of HPV indicate an immediate need for a national</p>	<p>Study cannot be generalized for the students/young adult's population from rural area.</p> <p>Data presented was more applicable to urban population and educated adults.</p> <p>Relation of age, and marital status with the responses were not explored.</p> <p>Future studies should use a bigger sample and address this issue in detail</p>	<p>Research Level III, B, Good</p>

				<p>HPV awareness campaign.</p> <p>Students understanding about preventing HPV and chances of reoccurrence after vaccination was poor.</p> <p>Influence of students by their family, friends, parents, and mostly physician's recommendations' to get vaccinated.</p> <p>Importance of educational programs implementation.</p>	and will prompt designing educational programs for different age groups.	
#5	Al-Shaikh, G. K., Almussaed, E. M., Fayed, A. A., Khan, F. H., Syed, S. B., Al-Tamimi, T. N., & Elmorshedy, H. N. (2014)	Cross sectional study	<p>Students ages 18-25 enrolled in the Health colleges of Princess Nora Bint Abdul Rahman University, Riyadh, Saudia Arabian medical, dental, nursing, pharmacy, health, rehabilitation colleges.</p> <p>n=1,400</p>	<p>Self-administered close ended questionnaire consisting of 48 questions was developed by investigators, guided by study objectives and review of literature.</p> <p>Out of 1400 students, 1258 questionnaires were collected.</p> <p>Knowledge, awareness of pap smears, and perception of safety, efficacy</p>	<p>Unproportioned to the numbers of respondents in different colleges.</p> <p>Dissimilar proportions of the numbers of respondents in different colleges.</p> <p>Students from non-health colleges are not represented.</p>	<p>Research Level III, B, Good</p>

				<p>and acceptance of vaccine were measured.</p> <p>Knowledge deficit was apparent with only 26.9% considering HPV virus a risk factor cervical cancer. Students' knowledge of the link between HPV and primary prevention of cervical cancer by HPV vaccine was very poor.</p> <p>Misinformation regarding primary and secondary preventive measures was apparent.</p> <p>Acceptance of the vaccine was measured by thoughts on side effects, efficacy and barriers.</p> <p>Side effects were the greatest concern, measuring 51.9% in that category.</p> <p>Data shown to formulate an awareness program.</p>		
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#6	Alsaad, A. M., Shamsuddin, K., and Fadzil, F. (2012).	Cross sectional study	<p>Syrian mothers, mean age 37, ranging from 26-74, with daughters enrolled in the sixth grade, 12-13 year old's in primary school in Aleppo, Syria.</p> <p>n=345</p>	<p>345 mothers returned the completed forms.</p> <p>The knowledge of Syrian mothers on HPV and the vaccine was minimal.</p> <p>Wealthy, highly educated families, medical field employees had heard or knew about HPV and the vaccine.</p> <p>14.5% mothers had reported ever having a GYN exam in the last 5 years and 10.1% had undergone cervical screening.</p> <p>First attempt in the Arab countries to test women's knowledge of HPV and the vaccine in Syria. Can be the foundation of establishing suitable educational programs and shows a need for education and awareness about HPV and the vaccine.</p>	<p>Four schools from the north, south, east, west and central parts of the city were randomly selected and in the 20 selected schools, random 6th graders were selected.</p> <p>All mothers of school girls were recruited to participate</p>	<p>Research Level III, B, Good</p>
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#7	Kester, M. L., Shedd-Steele, B. R., Dotson-Roberts, A. C., Smith, J., Zimet, D. G. (2014)	Cross sectional Study	<p>Black, non-Hispanic-white and other multiracial participants</p> <p>Ages 18-26, M=21,</p> <p>INShape Black and Minority health fair</p> <p>Indiana, United States</p> <p>n=131</p>	<p>Two groups were compared; the control group who completed the survey prior to the educational program and the intervention group who completed the survey post educational program.</p> <p>HPV knowledge, vaccine history and intent were assessed.</p> <p>The intervention group had a significantly higher intention to vaccinate, 86% as compared to the control group, 67%.</p> <p>Results suggest providing direct information about HPV and the vaccine may be a simple and effective way to motivate young adults to seek and initiate HPV vaccination.</p> <p>Low levels of knowledge directly tie in with hesitancy and feelings of uncertainty to</p>	<p>Relatively small sample group restricted ability to stratify the sample, basis of gender, and understand potential mechanisms, mediators.</p> <p>Convenience sampling was not generalized to other populations.</p> <p>Intention was only able to be measured, rather than vaccine uptake.</p>	Research Level I, B, Good
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				receive the vaccine.		
#8	Chang, I. J., Huang, R., He, W., Zhang, S.-K., Wang, S.-M., Zhao, F.-H., Qiao, Y.-L. (2013).	Multi center cross sectional study	<p>Employed women, n₁=1,146</p> <p>Female undergraduate students, n₂=557.</p> <p>Mainland, China</p>	<p>Post educational program implementation, acceptability and willingness to uptake the vaccine increased from 77-90% in employed women and from 73-82% in students.</p> <p>Both groups cited concerns about the HPV vaccine's safety, efficacy, and limited use to date as reasons for being unwilling to receive vaccination.</p> <p>Post intervention, women who were willing to vaccinate their children increased from 44- 81%.</p>	<p>A cross sectional design study</p> <p>Absence of the control group and a scale limiting the strength of causality to assess the validity of the questionnaire was not applied.</p> <p>Carried out in urban areas with higher educated women which is sample biasing and doesn't include the entire Chinese population.</p>	<p>Research Level III, B, Good</p>

				Post educational program, knowledge, acceptability, intent to vaccinate and awareness improved	Impact is unknown and there is uncertainty about whether the positive attitudes will persist and translate into high vaccination rates.	
#9	Bennett, A. T., Patel, D. A., Carlos, R. C., Zochowski, M. K., Pennewell, S. M., Chi, A. M., & Dalton, V. K. (2015).	Randomized controlled trial	Female students ages 18-26 in a large public Midwestern university n=661	<p>Two groups: MeFirst online individually tailored educational intervention</p> <p>Control group: received a CDC vaccine information statement on the vaccine</p> <p>A three month follow up survey was sent which only half, about 50.2%, of the participants responded to.</p> <p>Three months' post intervention: no difference in HPV vaccine uptake among the MeFirst intervention group</p>	<p>Biased based on participant self-selection</p> <p>A substantial proportion of students, some 92%, who were invited did not respond.</p> <p>Substantial loss of follow up was and a long pre-intervention survey may have been tedious for participants and attributed to the lack of survey participation three months later.</p>	Research Level II, C, Low

				<p>compared with control group.</p> <p>There was no difference in the two interventions suggesting the individually tailored program was not more effective than the CDC vaccine information statement on HPV.</p> <p>It remains unclear whether an individually tailored program or standard HPV education can improve vaccine uptake.</p>		
#10	Goncalves, K. A., Cobucci, N. R., Rodrigues, M. H., De Melo, G., Giraldo, C. P. (2014)	A systematic quantitative review	<p>12 HPV vaccine safety and adverse effects reports</p> <p>n=29,540</p> <p>Natal, Brazil</p>	<p>Combination of randomized controlled trials discussing the controversies, safety and tolerability of the HPV vaccine compared with placebo.</p> <p>Comparing HPV 16/18 to HPV 6/11/16/18 vaccines, the former presented more adverse effects, perhaps because there are many more trials evaluating the bivalent vaccine.</p>	<p>Heterogeneity of studies associated with methodological diversity would indicate that the studies suffer from different degrees of bias that prevented the conducting of a meta-analysis.</p> <p>Concerning adverse effects, more studies evaluating both vaccines are still necessary</p>	<p>Research Level I, B, Good</p>

				<p>Applies to evidenced based practice in reviewing previous work that has been done and taking it into consideration when implementing an educational program on HPV vaccine promotion.</p> <p>Vaccine controversy is an important topic to include and will tie in with the implementation of an educational program and outcome.</p>		
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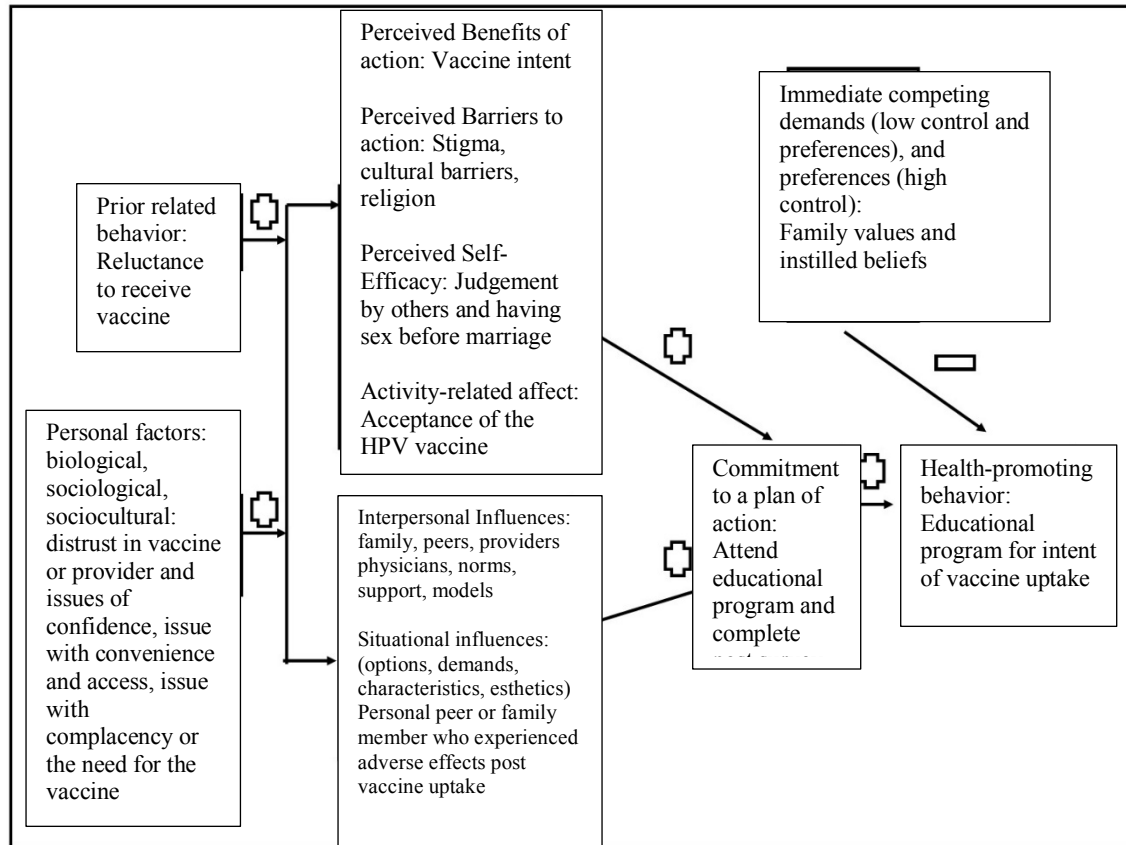
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Appendix B

Conceptual Framework of the Health Promotion Model



Adapted from: Pender, N. J., Murdaugh, C. L., & Parsons, M. A. (2006). *Health promotion in nursing practice*. Ann Arbor, MI, Pearson Education

Appendix C

Recruitment Flyer

COME PARTICIPATE IN A RESEARCH STUDY

Topic: Education on Cervical Cancer prevention
with an open forum discussion

**WHO: NON-PREGNANT
SYRIAN-AMERICAN
FEMALES AGES
18-26**

**WHY: EDUCATION TO
PREVENT CERVICAL CANCER
WITH EVIDENCED-BASED
INFORMATION ON THE
HUMAN PAPILLOMA VIRUS
VACCINE**

**WHEN: AUGUST 30, 2018
7:30PM-9:40PM**

Given by:
Nada Hannawi, BSN, RN
Principal Investigator
[REDACTED]

**PIZZA AND
REFRESHMENTS
WILL BE
SERVED**

RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

[REDACTED]

7/10/18
Version 2 [REDACTED]

Appendix D

Email to Youth Leaders

My name is Nada Hannawi. I am a registered nurse currently studying to pursue my doctorate degree as a Women's Health Nurse Practitioner. I am conducting a research project at Rutgers University with the purpose to provide and implement an educational program about the Human Papilloma Virus vaccine to prevent cervical cancer and increase vaccine intent uptake, in the Syrian-American, Syriac Orthodox female community. You are invited to participate in this research project and also have the option to decline participation, without penalty.

██████████ the youth director, has agreed to allow me to provide this free program to the females ages 18-26 of the congregation. I've attached the recruitment flyer that you are requested to distribute. If you wish to decline from distributing this flyer, no further action is necessary.

Please respond in an email to ██████████ with:

I, _____ (youth leader name) agree to distribute the flyer for this research project to members of the congregation on behalf of Nada Hannawi (Principal Investigator).

Thank you for your time, I look forward to hearing back from you.

Regards,
Nada Hannawi

Appendix E

Informed Consent



SUBJECT CONSENT TO TAKE PART IN RESEARCH STUDY

Title: An Educational Program to Prompt Human Papilloma Virus Vaccine Intent Uptake in Syrian-American Females to Prevent Cervical Cancer

Principal Investigator: Nada Hannawi, BSN RN

This informed consent form provides information about a research study and what will be asked of you if you choose to take part in it. If you have any questions now or during the study, if you choose to take part in it, you should feel free to ask them and should expect to be given answers you completely understand. It is your choice whether to take part in the research. Your alternative to taking part is not to take part in the research.

After all of your questions have been answered and you wish to take part in the research study, you will be asked to sign this informed consent form. You are not giving up any of your legal rights by agreeing to take part in this research or by signing this consent form.

Who is conducting this research study?

Nada Hannawi is the Principal Investigator of this research study. A Principal Investigator has the overall responsibility for the conduct of the research. However, there are often other individuals who are part of the research team.

Nada Hannawi may be reached at [REDACTED] or [REDACTED]

Who might benefit financially from this research?

Neither the Principal Investigator, [REDACTED], or Rutgers University will benefit financially from this research.

Purpose of the Study:

The purpose of this study is to provide and implement an educational program about the Human Papilloma Virus vaccine to prevent cervical cancer and increase vaccine intent uptake, in the Syrian-American, Syriac Orthodox female community. This research project is being conducted by Nada Hannawi at Rutgers University. You are invited to participate in this research project.

What will be done:

After completing the informed consent, you will be able to participate in an anonymous 10 minute pre-test survey, a 60-minute educational program, and a 30 minute education guided open forum discussion given by the Principal Investigator. The session will begin with an introduction and an overview of the statistics of cervical cancer. Current knowledge, attitude and perceptions of females in the Middle Eastern and American culture about the vaccine will be discussed. The current recommendations for the vaccine will be given. Current educational programs about the

HPV vaccine in the Middle East and United States, will be discussed. Then you will participate in a 10 minute post-test survey. After that, an open forum post educational program using three specific questions to guide the discussion, will be offered at the end for open ended questions and group conversation.

Who may take part in this study and who may not?

Syrian-American females who read and speak English, ages 18-26 of any marital status, are able to take part in this study. Anyone not meeting this criteria is excluded from this study.

Why have I been asked to take part in this study?

You have been asked to take part in this study because you are a Syrian-American female who speaks and reads English, and between the age of 18 and 26.

How long will the study take and how many subjects will take part?

The study is a one-time session lasting about 90 minutes. The researcher will ask 50 persons to participate in this study. At the end of the session, the study is complete.

What are the risks and/or discomforts I might experience if I take part in this study?

An inherited risk in most studies is loss of confidentiality. To minimize such risk, all private and identifying information will be securely kept. Additionally, withholding anonymity and not sharing your names and information of the participants, will be reiterated several times throughout the projects entirety. A private room will be provided by the community center with a closed-door system for prevention of anyone passing by the hallway from hearing the group content. By agreeing to participate in an anonymous project, you will agree to keep the information shared confidentially and completely private from individuals outside of the project.

An additional risk involving emotional distress, discomfort, or unease with the topic of discussion may exist. A discussion such as this, about vaccines, cervical cancer, and women's health in general, can lead you or participants to feel uncomfortable due to the nature of the topic. Because of this, you have the option to discontinue participation at any point without any penalty or consequences.

Are there any benefits to me if I choose to take part in this study?

The benefits of taking part in this study may be gaining knowledge about the Human Papilloma Virus vaccine to prevent cervical cancer.

However, it is possible that you may not receive any direct benefit from taking part in this study.

What are my alternatives if I do not want to take part in this study?

There are no alternative programs available. Your alternative is not to take part in this study.

Will there be any cost to me to take part in this study?

No there will not be any cost to take part in this study.

Will I be paid to take part in this study?

No, you will not be paid to take part in this study, however pizza and refreshments will be served.

How will information about me be kept private or confidential?

Your attendance and what you share during the open discussion will be kept completely confidential. Participants are urged not to mention the names and what others discuss anything private that is said, outside of the group. The data that is collected and synthesized is anonymous and intended to improve knowledge on the HPV vaccine to prevent cervical cancer in the Syrian-American community. The data will be stored in a secure Rutgers location at 65 Bergen Street, SSB 1134, Newark, NJ. The list of participant names will be destroyed upon data entry.

What will happen if I do not wish to take part in the study or if I later decide not to stay in the study?

It is your choice whether to take part in the research. You may choose to take part, not to take part or you may change your mind and withdraw from the study at any time without penalty. If you do not want to enter the study or decide to stop taking part, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may also withdraw your consent for the use of data already collected about you, but you must do this in writing to Nada Hannawi, [REDACTED] or via [REDACTED].

How will the findings be used?

The results of this study will be used for the contribution of knowledge to the nursing world in the Syrian-American female community in regards to the prevention of cervical cancer using the Human Papilloma Virus vaccine. The results from this study will be presented in an academic poster presentation at Rutgers University.

Who can I call if I have questions?

[REDACTED]

This research project has been reviewed according to Rutgers University IRB procedures for research involving human subjects.

If you have any questions about your rights as a research subject, please contact the IRB Director at ([REDACTED]) Newark.

You will be given a copy of this form for your records.

By beginning the study, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

AGREEMENT TO PARTICIPATE**1. Subject consent:**

I have read this entire consent form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form and this study have been answered. I agree to take part in this study.

Subject Name: _____

Subject Signature: _____ Date: _____

2. Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed all the important details about the study including all of the information contained in this consent form.

Investigator/Person Obtaining Consent (printed name): _____

Signature: _____ Date: _____

Appendix F

Demographic Survey

**Characteristics of Study Participants**

Please fill out this anonymous demographics information page for data analysis

Circle one in each column

1. Age: (18-20) (21-22) (23-24) (25-26)
2. Marital status: Single Married
3. Educational level of completion:
 High school degree Associate degree Bachelor's degree Master's degree
4. HPV vaccine intention before completion of educational program
 (YES) (NO)

Appendix G

Educational Pre-Test



Pre Educational Session Knowledge Questions

Instructions: Please put a check ✓ in the box next to the answer of your choice for each question

1. Men are able to get the HPV vaccine? YES ☐ NO ☐
2. A person may be infected with HPV and have no symptoms? YES ☐ NO ☐
3. HPV can sometimes be cured with antibiotics? YES ☐ NO ☐
4. HPV can cause anal cancer? YES ☐ NO ☐
5. A person cannot get HPV if they use a condom? YES ☐ NO ☐
6. A person can have cervical cancer without having genital warts? YES ☐ NO ☐
7. Genital warts always go away permanently following initial treatment? YES ☐ NO ☐
8. If it has been a year since a person's last HPV vaccine, they can get the remaining shots without starting over? YES ☐ NO ☐
9. HPV can be spread from person to person just by skin to skin genital contact? YES ☐ NO ☐
10. African Americans have the highest rates of cervical cancer? YES ☐ NO ☐
11. HPV vaccine requires 3 shots over a period of time? YES ☐ NO ☐
12. If someone has genital warts, the vaccine will help to cure them (make them go away)? YES, helps to prevent not but enough research done to cure ☐ NO ☐

13. A person can get an HPV infection from getting the HPV vaccine? **YES** ☐ **NO** ☐

14. Females who receive the HPV vaccine are protected 100% against cervical cancer?

YES ☐ **NO** ☐

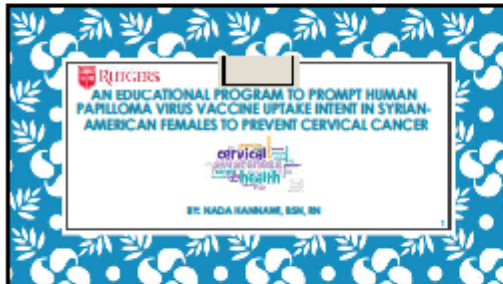
15. HPV vaccine protects against genital warts?

YES ☐ **NO** ☐

Appendix H

Educational PowerPoint Presentation

8/2/2018




Topic/Time: 180 minutes	Activity
10 Minutes	Welcome
2 Minutes	Consent
10 Minutes	Introduction
40 Minutes	Workshop Statement
10 Minutes	Agreement
10 Minutes	Pre Test
10 Minutes	Post-Test Presentation
10 Minutes	Consent
10 Minutes	HPV Vaccine
10 Minutes	Recommendations
10 Minutes	Post-Test
10 Minutes	Open House/Feedback
10 Minutes	Consent
10 Minutes	Closing

Introduction

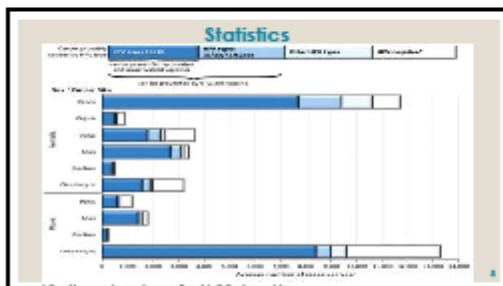
Some cervical cancer facts

- Cervical cancer worldwide leading cause of death amongst women,
 - Stemming from the Human Papilloma Virus (HPV)
 - 12,300 new cervical cancer cases occur annually
 - 4,215 are associated with death
- Nearly 80 million people, 1 in 4, are currently infected with HPV in the United States.
 - 14 million people, male and female, including teenagers, become infected with HPV yearly
- The Human Papilloma Virus:
 - Belongs to a group of more than 170 numbered double-stranded DNA viruses
 - Infects both the male and female population


Introduction



- Has been found to cause about 37,000 cases of new cancers in the body.
- Of these cases, about 31,000 are caused by the Human Papilloma Virus itself, of which about 28,000 can be prevented using the HPV vaccine
- Spread by skin-to-skin contact genital contact
 - Can cause genital warts - with or without cervical cancer
- African Americans and Hispanics have higher rates than white and non-Hispanic women



Prevention: The HPV Vaccine




- To prevent cervical cancer,
 - In June, 2006 - Gardasil vaccine
 - developed & approved by the FDA for females ages 9-26
 - that both were used but not yet been widely used
- By 2009, the 3 approved HPV vaccines
 - Gardasil
 - Gardasil 9
 - Cervarix
- Condoms: Can lower chances of HPV, but do not fully protect against it
- 100% protected before any sexual activity

8/2/2018

3 Types of Vaccines:

- Quadrivalent
 - Available for use in the United States*
- Nonavalent
 - Quadrivalent, bivalent and bivalent
 - Target specific oncogenic HPV types
 - Proven to protect against HPV 16 and 18, which causes about 84% of cervical cancers and most of other HPV-related cancers in the U.S.
- Quadrivalent and bivalent
 - Closest to the target oncogenic HPV types 16 and 18, and genital wart-associated HPV types 6 and 11
- The vaccine itself does NOT cause the human papilloma virus



29,000 HPV-related deaths per year
Vaccine can prevent 90% of HPV-related deaths

Recommendations: Who can get it?

- The current recommendations:
 - Routine vaccination of age 11 or 12 years and initiation of vaccine as early as 9 years old.
 - Females ages 13-26 who have not been adequately previously vaccinated.
 - Males ages 13 through 21 years, not adequately vaccinated previously.
 - Gay, bisexual, and other men (transgender and immunocompromised) (HPV infected) through age 26, who have not been adequately vaccinated previously (CDC, 2014).
 - Adolescents should be vaccinated before having sexual intercourse and exposure to HPV, however people who have already been exposed and infected can still get protection from other HPV types in the vaccine (CDC, 2014).

Vaccine Schedule



1st dose
2nd dose: 1-2 months later
3rd dose: 6 months from the 1st dose

- The Gardasil vaccine is a 3-dose series over a 6-month period
- Currently has become a 2-dose series
 - 1st dose
 - 2nd dose: 1-2 months later
 - 3rd dose: 6 months from the 1st dose
- If a dose is missed, recommended to continue regimen
- Prevents the virus, may cure genital warts.
 - Not enough research done


Why are we doing this?



Why are we doing this?
We're not doing it because it's not in our culture

- Globally, the literature evidences a gap in:
 - Knowledge
 - awareness and vaccine uptake in all cultures, especially in the Middle Eastern culture.
- Specifically, Syrian-American females in the Orthodox community here in the states:
 - have no existing educational programs about women's health
 - Lack awareness and knowledge of cervical cancer prevention and the HPV vaccine.
- A BPE background to us why?
 - Highly conservative views of the Syrian culture
 - Women's health issues are not spoken about
 - Taboo of influence carried within the culture about sexually transmitted diseases and sexual education
 - Give a poor understanding of gender-specific diseases and concern to the majority of young females

Knowledge & Attitudes



Knowledge
Attitudes

- Some statistics and trends founded in the Middle Eastern countries:
- Lack of knowledge in the literature among Middle Eastern females.
 - According to Dany et al., (2015), more than half, 57.8%, of the participants in the study conducted, did not believe they are at risk for contracting the HPV infection.
- Positively, participants were open to learning about HPV and the vaccine and after the educational session and survey, intent of the vaccine was measured resulting with an increase.

More studies



More studies

- According to a study done on Lahore Pakistan on undergraduate and graduate students with an average age of 23:
 - 83% stated there is no vaccine against HPV and 81% reported women do not need to be screened post vaccination (Usan et al., 2014).
- 38% of participants stated that the vaccine should:
 - be given prior to having first sexual intercourse
 - In conclusion- low knowledge rates in Pakistan is so poor that students thought HPV causes HIV and that antibiotics are a cure for HPV (2014).

Appendix I

Educational Post-Test



Post Educational Session Knowledge Questions

Instructions: Please put a check ✓ in the box next to the answer of your choice for each question

1. Men are able to get the HPV vaccine? YES ☐ NO ☐
2. A person may be infected with HPV and have no symptoms? YES ☐ NO ☐
3. HPV can sometimes be cured with antibiotics? YES ☐ NO ☐
4. HPV can cause anal cancer? YES ☐ NO ☐
5. A person cannot get HPV if they use a condom? YES ☐ NO ☐
6. A person can have cervical cancer without having genital warts? YES ☐ NO ☐
7. Genital warts always go away permanently following initial treatment? YES ☐ NO ☐
8. If it has been a year since a person's last HPV vaccine, they can get the remaining shots without starting over? YES ☐ NO ☐
9. HPV can be spread from person to person just by skin to skin genital contact? YES ☐ NO ☐
10. African Americans have the highest rates of cervical cancer? YES ☐ NO ☐
11. HPV vaccine requires 3 shots over a period of time? YES ☐ NO ☐
12. If someone has genital warts, the vaccine will help to cure them (make them go away)? YES, helps to prevent not but enough research done to cure ☐ NO ☐

13. A person can get an HPV infection from getting the HPV vaccine? **YES** ☐ **NO** ☐

14. Females who receive the HPV vaccine are protected 100% against cervical cancer?

YES ☐ **NO** ☐

15. HPV vaccine protects against genital warts?

YES ☐ **NO** ☐

16. Do you intend to vaccinate post educational session?

YES ☐ **NO** ☐

Appendix J

Guided Open-Forum Questions



An Educational Program to Prompt Human Papilloma Virus Vaccine Uptake Intent in Syrian-American Females to Prevent Cervical Cancer

Educational open-ended forum: three specific questions

1. What are your thoughts on the vaccine?
2. What factors prevent you from getting the vaccine?
3. What would you say is your biggest influence in receiving or not receiving the vaccine?
(For example, parents, doctors, peers, other)

Appendix K

Project Timeline

COMPLETION:	PRE-DESIGN	DESIGN	IMPLEMENTATION	EVALUATION
SPRING 2018	-Meeting with Stakeholders -Secured DNP Chair and Team Member Project Development: 1. PICO question developed 2. Theoretical models reviewed and framework completed 3. Review of Literature Completed 4. Table of Evidence completed	-Project development continued -Draft of project proposal completed -Revised project proposal -Proposal presented May 2018: approved by committee -Submitted to IRB for review		
SUMMER 2018		-Await for IRB approval -Clarifications made as requested by IRB		
FALL 2018			Project implementation: -Recruitment -Intervention	Project Completion: -Data analysis -Data reporting Development of DNP Project related activities: 1. Presentation Slides 2. Poster 3. Presentation -Close out IRB, finalized -Graduation

Appendix L

Project Budget

Item	Projected Cost	Total Cost
Printing of flyers, data collection tools	100 copies at \$0.20	\$20
Refreshments (pizza and drinks) and supplies		\$100
Poster for Presentation	1 poster	\$50
Total Cost		\$170

Appendix M

Master Participant List

	A	B	C	D
1	PARTICIPANT NUMBER	PARTICIPANT NAME		
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