

Creating Healthy Work Environments 2019

Increasing Human Papillomavirus Vaccine Rates in Young Women

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Clinical Question: In females ages 18 to 26 from a low socioeconomic background at the Oak West Women's Health Clinic in Dallas, Texas, (P) how does an educational leaflet that explains HPV facts and safety of the Gardasil 9 vaccine (I) compare to omitting the leaflet, (C) and how will it affect the likelihood of HPV vaccination uptake within a four week study (T)?

Problem/Significance: In the United States, HPV is the most predominant sexually transmitted infection (CDC, 2016). HPV causes cervical cancer, genital warts, penile cancer, vaginal cancer, anal cancer, and oropharyngeal cancer (CDC, 2016). Gardasil 9 is a vaccine given twice over a six to 12 month period that prevents individuals from contracting the most prevalent HPV strains (NCI, 2016). At present, there is no legislative mandate requiring eligible individuals to be vaccinated for HPV in most of the United States. The CDC predicts that increasing vaccination rates to 80% will prevent 53,000 women from developing cervical cancer (Merck, 2014). In the United States in 2010, the estimated costs for cervical cancer treatments and screening measures totaled eight billion dollars (Chesson et al., 2012).

Literature Review: A comprehensive search of the literature was conducted via the online library services of Saint Mary's College. EBSCO host was used to search within the CINAHL-FT and PubMed databases. The John Hopkins Evidenced-Based Model was used to critique each article. The literature review included four randomized controlled trials, one quasi-experimental study, three qualitative studies, and nine cross-sectional studies of which three were Grade A and 14 were Grade B. A majority of the literature found that males and minorities have significantly lower uptake levels of the HPV vaccine. There was an overall consensus between the studies that a generalized educational leaflet versus a video is the best educational intervention to improve HPV knowledge vaccination initiation. A qualitative interview identified the importance of portraying the message to adolescents that Gardasil 9 prevents cancer and genital warts, and that the vaccine is safe.

Study Design: Convenience sampling was used to recruit potential candidates. 80 subjects participated in the study. Thirty-five were Black, 43 were Hispanic, one was White, and one identified herself as "other." Sixty-two were English speakers, and 18 were Spanish speakers. Participants were given an educational leaflet to review prior to their exam visit. Participants completed a demographic data form. The Medical Assistant then indicated at the end of the exam visit if the patient declined or accepted the vaccine.

Results: Thirty-two participants initiated the vaccine. There was a 1500% increase in the initiation rate of Gardasil 9 vaccines during the study compared to a four week period prior to the study. No statistical difference was found between the variables of the demographic data including language, schooling, race, and age for initiation of the vaccine using chi-square analysis. Twenty-two English speakers and 10 Spanish speakers initiated the vaccine. Of the initiators, 13 were Black and 19 were Hispanic.

Implications: Implementation of an evidenced-based practice into a clinic setting to improve Gardasil 9 uptake rates amongst adolescents prior to sexual activity has the potential to decrease healthcare costs, deaths, diseases, and emotional ramifications related to treatments and procedures for HPV disease causing cancers. Short of achieving a legislative mandate, healthcare providers need to respond to the need to create herd immunity against the most prevalent HPV strains. This study supports previous research that an educational leaflet is an effective tool to educate patients about HPV. Further studies need to identify framing messages to address each demographic population in order to identify the best leaflet to provide to each subset group. Additional quality improvement projects should include multifactorial methods to increase the number of patients getting vaccines. Research should evaluate the

best teaching tools for males and parents of adolescents. Further studies need to evaluate the best methods to ensure patients complete the vaccine series.

Title:

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Keywords:

Gardasil 9, Human Papillomavirus and Preventative Care

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Abstract Summary:

The human papilloma virus (HPV) is a sexually transmitted infection. Gardasil 9 is a vaccine that prevents the spread of HPV (National Cancer Institute [NCI], 2016). The goal of the intervention is to formulate an educational experience that increases the HPV vaccine uptake amongst eligible individuals in a clinic setting.

Content Outline:

1. Background and Identification of the Problem
2. The Centers for Disease Control and Prevention (CDC) (2016) reports that the human papillomavirus (HPV) infects 14 million people yearly.
 1. In the United States, HPV is the most predominant sexually transmitted infection (STI) (CDC, 2016).
 2. The CDC (2016) states that over 11,000 women in the United States are diagnosed with cervical cancer every year.
1. HPV causes cervical cancer, genital warts, penile cancer, vaginal cancer, anal cancer, and oropharyngeal cancer (CDC, 2016).
 1. Gardasil 9 is a vaccine given twice over a six to twelve month period, and it protects against HPV types: six, 11, 16, 18, 31, 33, 45, 52, and 58 (National Cancer Institute [NCI], 2016).
 2. Gardasil 9 is available for females ages nine to 26 and males ages nine to 15 (NCI, 2016).
2. Significance of the Problem
3. There is no legislative mandate requiring eligible individuals to be vaccinated for HPV in most of the United States; Rhode Island, Virginia, and the District of Columbia are the only regions that require vaccination (McGinley, 2016).
4. A necessary barrier to overcome in order to increase HPV inoculation rates includes educating the public about the diseases caused by HPV and current screening methods.
5. A study done among three different groups: HPV positive females, college women, and minority college women revealed that a quarter of the entire sample were unaware that pap smears are used to screen for cervical cancer (Daley et al., 2013). A quarter of each group was found to have the misconception that the primary reason for pap smears includes STI and pregnancy testing (Daley, et al., 2013).
- Implications
 1. Healthy People 2020 has specified a goal to decrease the number of females infected with HPV (Office of Disease Prevention and Health Promotion [ODPHP], 2017).
 1. McGinley (2016) wrote in an article in *The Washington Post* that the CDC announced that since the introduction of Gardasil, the prevalence of HPV infected females has decreased by two-thirds.
 2. The CDC predicts that increasing vaccination rates to 80% will prevent 53,000 women from developing cervical cancer (Merck, 2014).
 3. Vigne (2016) reports that studies done at Yale University found that universally implementing Gardasil 9 would decrease the incidence of cervical cancer by 73%.

4. The NCI (2016) postulates that extensive inoculation may preclude deaths associated to cervical, anal, vaginal, penile, and oropharyngeal cancer. Also, herd immunity may reduce healthcare costs needed for additional screening and interventional procedures linked to HPV (NCI, 2016).
2. Chesson et al. (2012) report that in the United States in 2010, the estimated costs for cervical cancer treatments and screening measures totaled eight billion dollars.
 1. The costs of hospitalizations in Texas in 2013 relating to cervical cancer treatments totaled 40 million (Office of Surveillance, Evaluation, and Research [OSER], 2016).
 2. In 2014, 1,686 Texas Medicaid beneficiaries were treated in the hospital for cervical cancer (OSER, 2016).
3. A significant factor to be considered relating to HPV causing diseases is the emotional ramifications from positive diagnoses, screening tests, and treatments.
 1. Sharp et al. (2013) reveal that in a study out of 989 women, one-third of participants with low grade cytology abnormalities six weeks following a colposcopy were found to have substantial psychological distress based on points from the Impact of Event Scale (IES).
4. PICOT Statement

A review of current literature was made to answer the following: In females ages 18 to 26 from a low socioeconomic background at the Oak West Women's Health Clinic (OWWHC) in Dallas, Texas, (P) how does an educational leaflet that explains HPV facts and safety of the vaccine (I) compare to omitting the leaflet, (C) and how will it affect the likelihood of HPV vaccination uptake within a four week study (T)?

1. Literature Review
2. A comprehensive search of the literature was conducted via the online library services of Saint Mary's College. EBSCO Host was used to search the CINHALL-FT and PubMed Databases. The John Hopkins Evidenced-Based Model was used to critique each article. The literature review included four randomized controlled trials, one quasi-experimental study, three qualitative studies, and nine cross-sectional studies.
 1. Studies indicate that the most important facts to present in a leaflet include the diseases that may be prevented by Gardasil 9 and the safety of the vaccine (Alexander et al., 2014).
 2. Currently, since no legislative mandates for Gardasil 9 are in place for a majority of the nation, provider recommendation is key to convincing age eligible candidates to initiate the HPV vaccine series.
3. Areas for Further Research
 1. All future research needs to focus on primary, secondary, and tertiary prevention for HPV causing diseases.
 2. Research that identifies the emotional impact and the healthcare costs related to diseases caused by HPV in the United States are necessary to present to government officials in order to promote for a nationalized mandate for universal HPV vaccination.
 1. These studies should include cross-sectional studies and qualitative interviews to determine how citizens are affected by HPV emotionally and financially.
 2. Future research needs to include randomized controlled trials with large sample sizes that include all demographic factors.
 1. Males and minorities are less likely to initiate the HPV inoculation, so the research needs to evaluate different framing messages that are most likely to resonate with these groups to increase the likelihood of Gardasil 9 uptake (Daniel-Ulloa, Gilbert, & Parker, 2016).
 2. Qualitative research is indicated to assess the best methods to convince guardians of adolescents of the significance of initiating Gardasil 9 prior to sexual activity. Research should evaluate messages that will persuade parents to overcome the fear of the vaccine encouraging promiscuity.

- The Quality Improvement Project

1. Study Design

1. Convenience sampling was used to recruit potential candidates.
2. No experimental drugs were used in the study.
3. An educational leaflet obtained from the CDC website was used to educate participants about Gardasil 9—a FDA approved vaccine—and HPV.
4. A goal sample size of 80 females ages 18-26 during a four week time frame was obtained to achieve 80% power using a significance level of 0.05.
5. The participant was only required to supply information during the course of their exam visit in the clinic. There is no follow up study mandatory for the participant to complete.
6. Participants were given the educational leaflet upon acceptance of participation in the study with a verbal consent
 1. Participants Completed a Demographic Data Form.
 2. A medical assistant indicated on the form if the participant received or declined the vaccination

2. Sample

1. A total of 80 subjects participated in the study.
 1. The Participants
 1. 62 were English speakers
 2. 18 were Spanish speakers
 3. One White participant
 4. 35 Black subjects
 5. 43 Hispanics
 6. One who identified herself as “other”
 7. Participants with a high school education included 47.5%.
 8. The percentage of participants with and undergraduate degree consisted of 8.8%.

3. Results

1. 32 participants initiated the vaccine.
2. There was a 1500% increase in the initiation rate of Gardasil 9 vaccines during the study compared to a four week period prior to the study.
3. No statistical difference was found between the variables of the demographic data including language, schooling, race, and age for initiation of the vaccine using chi-square analysis.
 1. 22 English speakers initiated the vaccine
 2. 10 Spanish speakers initiated the vaccine
 3. 13 Black participants initiated the vaccine
 4. 19 Hispanics initiated the vaccine
4. Discussion
 1. The goal to increase the number of patients initiating Gardasil 9 using an educational leaflet during the quality improvement project was successfully met.
 2. This is a consistent finding with previous research that adds reliability to the study.
 3. The findings in this study coincide with previous research that educational leaflets are effective in increasing Gardasil 9 rates.
 4. The leaflet for this study was taken from the CDC website and noted by the Gunning Fog Index scale to be at a High School Freshman Reading level.
 5. Of the participants, 82.1% had obtained a minimum of a high school education, so it can be noted this may have affected 17.9% of the sample.
 6. A peer group was conducted amongst a Women’s Health Educator (WHE) and five Women’s Health Nurse Practitioners at the OWWHC, which concluded that the leaflet was appropriate, factual, and succinct for the OWWHC population.
 7. This study is limited in that there is no indicator how the participants liked, disliked, or understood the leaflet.
 8. The leaflet follows the guidelines from previous research studies that suggest the most important facts to include in a leaflet: HPV causing diseases and the vaccine is safe.

9. Further studies should evaluate how well the leaflet is received by the population at the OWWHC.
10. The findings from this study do not necessarily support research in the past that indicates Blacks are not influenced by leaflets to get the vaccine.
 1. From this study, 59% of Black participants initiated the vaccine. Future research needs to evaluate appropriate framing messages to encourage the Black population to initiate Gardasil 9.
 2. Studies should evaluate the reasons for non-uptake in the Black population with the current educational interventions.
5. While the intervention was successful in increasing initiation rates, less than half of the sample size did not choose to receive the vaccine.
 1. This signifies that it is reasonable to suggest further studies need to be conducted in the clinic to discover more effective methods in the OWWHC.
 2. Research should focus on the participant reason for not selecting to receive the vaccine.
 3. A comparative study using different methods could help to evaluate the best format for the OWWHC.
6. Limitations
 1. The increase in uptake of the vaccine may have been influenced by provider recommendation in addition to the leaflet which decreases validity.
 2. The sample size is small.
 3. The sample consisted of primarily Blacks and Hispanics. All participants were from a low socioeconomic position. These factors limit generalizability.
7. A strength in the study is a limitation in bias since convenience sampling was utilized.
8. Further quality improvement projects at the OWWHC need to address methods to ensure patients complete the entire vaccination series.
 1. Other implementation methods that should be evaluated in the OWWHC include videos and provider reminders on the electronic charting.
 2. The leaflet used in this project was obtained from the CDC, but framing messages and other leaflets may need to be compared in order to produce the most effective educational tool to tailor to the OWWHC patient population.
9. Implications for nursing include that nurses and APRNs need to respond to the need for educating patients about HPV and the safety of the Gardasil vaccine.
10. DNP's need to continue translating evidenced based practices which result in increasing awareness about HPV and vaccination rates.
11. DNP's should present policy briefs to school districts which require education to school aged children and parents about the importance of Gardasil vaccination.
12. APRN leaders need to present financial statements to legislators and lobby for mandatory vaccination.
13. APRN leaders need to raise funds for promotional advertisements that endorse Gardasil 9.

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Professional Experience: Women's Health Nurse Practitioner – Parkland Hospital - Mar 7, 2016 - Present Management of approximately 20 patients daily for obstetric and gynecologic appointments. Precept nurse practitioner and physician assistant students. Registered Nurse - Medical Surgical Floor Texas Health Resources February 2011 – December 18, 2015 • Manage care for four to six patients

during a 12 hour shift. λ Monitor patients following orthopedic, abdominal, bariatric, and gynecological surgeries. λ Care for patients with coronary symptoms, pneumonia, diabetic emergencies, abdominal symptoms, migraines, and oncology patients. λ Skills: wound care, inserting NG tubes, foley catheters, IV's, changing surgical dressings, running Protonix/heparin drips, and transfusing blood., λ Preceptor to nurses. Registered Nurse - Coronary Care Unit Dallas Regional Medical Center, October 2010 – February 2011 • Manage care for three to five patients during a 12 hour shift. λ Interpret telemetry strips λ Monitor patients following cardiac catheterization procedures, run Integrilin, Protonix, Cardizem, and Heparin drips

Author Summary: Brianna Acosta is a Women's Health Nurse Practitioner at the Oak West Women's Clinic at Parkland Hospital in Dallas, Texas. She graduated with her Masters of Science from Texas Women's University in 2015. Brianna has recently become the first person to obtain her Doctorate of Nursing Practice degree from Saint Mary's College in Notre Dame, Indiana. She has been researching preventative measures to improve public knowledge about Gardasil and HPV since 2014.