Perception of HPV in Adults Ages 27 Through 45

By

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DNP Project Team Approval Form

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DNP Project Team Agreement Form

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Proposed Scholarly Project Title:
Perception of HPV in Adults Ages 27 through 45

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Abstract

Human papillomavirus (HPV) related cancers affect over 25,000 men and women each year in the United States. Many of these cancers can be prevented by vaccination against HPV. In October 2018, the FDA approved Gardasil 9 for HPV vaccination in patients ages 27 to 45 years old, expanding from the previously identified 9 to 26-year-old population of interest. This expanded population had not been assessed due to this recent approval and previous lack of vaccination ability. The project involved implementation of a 15 question Likert scale survey aiming to assess the perception of the newly expanded population in hopes to guide educational methods. The survey implementation took place in a semi-rural community that was predominately Caucasian. Overall, the population was lacking in HPV knowledge and did not feel HPV to be of significant risk to them. There were no immediately identifiable barriers to vaccination aside from a lack of perceived risk, likely due to lack of knowledge.

Keywords: HPV, perception, cancer

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Chapter I

If you could vaccinate yourself against cancer, wouldn't you? In October of 2018 the FDA approved the use of Gardasil 9 for men and women ages 27 to 45. This project aimed to determine the perception of this population surrounding HPV vaccination in hopes to appropriately educate them and vaccinate them. Perception by definition is "a way of regarding understanding, or interpreting something" ("perception," n.d.). How patients interpret and understand the importance and efficacy of different vaccines varies with vaccine type, patient age, and demographics. The very recent approval for the vaccine in the expanded population meant that there were no completion rates for the vaccine series, no previous studies done for perception, and no available education aimed specifically at this population. Once perception was determined, an appropriate educational model was recommended to increase overall vaccination rates as well as completion rates of the HPV vaccination series.

Background and Significance

"In the United States each year, there are about 17,500 women and 9,300 men affected by HPV related cancers. Many of these cancers could be prevented with vaccination" (Centers for Disease Control and Prevention, 2018, para. 1). HPV related cancers include cervical, vulvar, vaginal, penile, anal, rectal, and oral cancers including throat, tongue and tonsillar cancers (CDC, 2018). Gardasil was first approved for use in 2006 for women and 2009 for men, which means that men and women ages 39 to 45 had never been eligible for HPV vaccination prior to this approval. However, HPV vaccines were not widely covered by insurance companies until 2013, making costs for vaccination upwards of $500 (American Cancer Society, 2019). Increased cost often leads to many individuals declining a vaccine until it is at least partially covered by their

insurance; this was what was currently happening with Shingrix (T. Brock, personal communication, March 4, 2019). It was very likely that individuals who were 30 years of age and over at the time of the project implementation were not offered the vaccine due to cost (Rosenthal, 2014). Rates for HPV vaccination in Wisconsin were less than 15% for women and 11% for men in 2013 (Lazar, Imm, Petit, Conlon, & LoConte, 2014). The negative outcomes of these various cancers are numerous and vary depending on the type of cancer that develops. The most severe concern was death, with over 3,500 women dying from HPV related cervical cancer alone each year in the United States (CDC, 2018). In Wisconsin, HPV related oropharyngeal cancer rates in males mimicked the rates of cervical cancer in females while the oropharyngeal rates in women were much lower than cervical cancer rates (Wisconsin Department of Health Services (WDHS), 2016). Due to how recent HPV had been linked to vulvar, vaginal, penile, anal, and rectal cancers there was limited data on what percentage of these cancers and their related deaths were directly a result of HPV, but the estimate was that 70% or more were directly caused by HPV (CDC, 2018).

According to the Marathon County health department, only 36% of the population ages 19 and older had received a complete HPV vaccine series (R. Mroczenski, personal communication, March 6, 2019). This rate was 29% in 2017 and shortly after the Wisconsin Department of Health Services (2018) implemented statewide education regarding HPV vaccination importance. However, when the 36% HPV vaccination rate was compared with Tdap vaccination rates upwards of 65% it was clear that there was room for improvement in HPV vaccination rates (WDHS, 2018). Surrounding area clinics were offering the HPV vaccine to this expanded population once it had been approved, but the health department had specific state regulatory policies that had to be created once they reviewed the Advisory Council on

Immunization Practices each year (R. Mroczenski, personal communication, March 6, 2019). This data, as well as the findings of Markowitz et al. (2016), suggested that vaccination rates for previously approved populations were on the rise and were not in need of repeated educational research at the time of project implementation. However, the education was not provided to the expanded population; education was only provided to patients ages nine to 26, and their parents when applicable. Prior to creating educational material, it was important to determine perception of HPV vaccination, so that education could be best tailored to the needs and knowledge gaps of the population (Thompson, et al., 2016).

Needs Assessment

Based on a community needs assessment and SWOT analysis, the population of individuals 27 to 45 years old had not been previously evaluated for HPV vaccine perception, vaccination rate, and follow through with vaccine doses (A. Hayek, personal communication, March 25, 2019; R. Mroczenski, personal communication, March 6, 2019; T. Brock, personal communication, February 8, 2019).

SWOT Analysis

The SWOT analysis (see Appendix A) indicated strong provider support along with positive outcomes of identifying specific needs for focused education leading to decreased HPV which outweighed the threats and weaknesses in determining the perception of the 27 to 45 year old population surrounding HPV vaccination. Some of the specific strengths identified were the strong provider support, evidence supporting education increases vaccination, good interprofessional relations, population specific needs identified, and an opportunity to create focused vaccine education leading to increased vaccination rates and decreased HPV diagnoses.

Weaknesses identified included identifying enough patients willing to participate in survey implementation and lack of provider follow through in department communication.

Community Needs Assessment

Community needs assessment (see Appendix B) was conducted with three family practice providers and the public health registered nurse who was head of the county's communicable disease sector. A review of statewide and multiple county statistics related to HPV vaccination was done as well as a review of the current HPV education available to patients in the surrounding area clinics. This analysis indicated a lack of patient specific education available to the expanded population as well as a lack of vaccine statistics for the expanded population.

Problem Statement

The recent FDA approval of Gardasil 9 for patients aged 27 to 45 opened the opportunity to prevent HPV and its related cancers in a broader population. However, it was uncertain as to how patients perceive the HPV vaccine in this population. Prior to offering it to patients, providers needed to be certain that the presentation of the vaccine was in a positive manner. According to Browall, Koinberg, Falk, & Wijk (2013), the way something is presented the first time has a strong impact on how someone perceives that idea. If we were able to positively present this vaccine to this population, we could greatly impact future vaccination rates and HPV related cancers.

Project Aim or Purpose

The aim of this project was to determine the perception of the 27 to 45 year old population surrounding HPV vaccination in hopes to appropriately educate and vaccinate a population that couldn't previously be vaccinated. The project involved the implementation of a

valid survey to determine perception. Patients were given the survey prior to their appointments in the rural midwestern community clinic, to assess their perception of HPV vaccination. This questionnaire was evaluated based on patient answers to determine their perception. The main objective of implementing a valid survey was to determine if there was a positive, neutral, or negative perception of HPV vaccination in the 27 to 45 year old population within 60 days. A secondary objective was to determine if there were related reasons that members of this population were not choosing to be vaccinated within that same 90 days. The results of the HPV vaccination perception survey and identification of possible barriers to vaccination, were used to tailor patient education toward this population of 27 to 45 year old individuals.

PICOT

How do men and women between the ages of 27 and 45, who were not previously vaccinated for HPV, perceive HPV vaccination?

Congruence with Organizational Strategic Plan

The project was carried out in a rural community clinic setting in central Wisconsin. The clinic aimed to provide quality medicine for all patients that utilized evidence-based practice and up to date research. The recent approval of Gardasil 9 was based on its reduction in HPV related cancers being of benefit to the expanded population. Wisconsin Department of Health Services (2017) developed a Wisconsin Cancer Council, which included a Comprehensive Cancer Control Program that aimed to reduce the burden of cancer in Wisconsin by including HPV in routine vaccination, supporting reminder systems to improve vaccine series completion and promoting HPV related cancer screening. The evaluation of perception aimed to aide in the long-term community and state-wide vision to reduce HPV related cancers (WDHS, 2017). The Wisconsin Comprehensive Cancer Control Plan 2015-2020 which had also been adopted by the local health

departments includes 13 priorities, number four being increasing HPV vaccine completion, number seven being increasing use of recommended cancer screenings, and number 13 being to increase Wisconsin specific cancer related data collection and use (2017). Two of the specific strategies noted were increasing acceptance of the HPV vaccine and addressing cancer data gaps (2017). Assessing perception aided in understanding ways to improve HPV vaccine acceptance, and also addressed the gap in knowledge surrounding the newly identified population.

Synthesis of Evidence

Search Process

Literature was found using CINAHL, Cochrane Library, EBSCOhost, Google Scholar, PMC, and PubMed databases primarily through Bradley University Library. Key search words included *HPV vaccination*, *vaccination perception*, *age* related *changes in vaccines*, and *vaccine* related *primary education*. The searches using several combinations of the key search words yielded hundreds of articles. Inclusion criteria was a publish date within the last five years, written in English, and full text availability. Abstracts were read to determine significance to the topic and the twenty articles that were included were specific to perception, vaccination rates, and education available. There was a great deal of information available surrounding HPV vaccination and education for promoting vaccination in the population of those ages nine to 26. The lack of education and information available for the newly expanded population supported the need for an analysis of perception.

Patient Perception

The lack of research including individuals ages 27 through 45 was most likely due to the very recent approval of Gardasil 9 for this population. The recent approval of Gardasil 9 in October 2018 lead to an open avenue for research in this newly available population. Over half

of the twenty studies chosen regarding vaccine perception were primarily aimed at the adolescent population or their parents. One study performed in 2011 with the target population found that women 27 to 45 felt HPV vaccination was relevant to them, but being that it was performed prior to approval for this age group, there was concern that "intention to get vaccinated may not translate into actual uptake" (Weiss, Rosenthal, & Zimet, para. 24).

Barriers to HPV Vaccination

Perception of susceptibility and severity have been found to be main barriers to vaccination against HPV (Freimuth et al., 2017; Thompson et al., 2016; Weiss, Rosenthal & Zimet, 2011). Risks and benefits of vaccination were also main components of perception surrounding individual vaccines. Markowitz et al. (2016) found that "within 6 years of vaccine introduction, there was a 64% decrease in 4vHPV type prevalence among females aged 14 to 19 years and a 34% decrease among those aged 20 to 24 years" which was helpful in identifying the benefit of the vaccine for patients (para. 4). On the other hand, Morrison & Lasserson (2018) discussed how vaccination against HPV being most effective prior to HPV exposure leads patients to wonder if vaccination is worth the risk as age increases. While little information existed about the target population, many authors agreed that the most common barrier to HPV vaccination was lack of information and that education elicits increased HPV vaccination rates (Cassidy, Braxter, Charron-Prochownik, & Schlenk, 2014; Daly, Halon, Aronowitz, & Ross, 2016; Lazar, Imm, Petit, Conlon, & LoConte, 2014; Strohl et al., 2015). Most importantly, that education containing both statistical and narrative information was the most effective at increasing vaccine uptake (Nan, Dahlstrom, Rangarajan, & Richards, 2015). Vaccine perception had been studied in many different populations for many different vaccines and there were common themes that seemed to have affected vaccine uptake which were inconvenience, lack of

confidence, importance, and severity of disease (Schmid, Rauber, Betsch, Lidolt, & Denker, 2017; Van Lier, Ferreira, Mollema, Sanders & De Melker, 2017). However, two studies did find these perceptions to be present and yet not influence vaccine uptake (Chamberlain, et al. 2015; Wagner, et al. 2017). Chamberlain et al. (2015) found that, "While pregnant women who remain unvaccinated against influenza … may be aware of the risks influenza and pertussis pose …, many remain reluctant to receive influenza and Tdap vaccines antenatally" (para. 3). Wagner et al. (2017) found that "only a minority of children had been administered a pneumococcal vaccine, even though most of their caregivers believed that pediatric pneumonia and meningitis vaccines were necessary" (p. 143). While these studies did not support the hypothesis that positive vaccine perception determines vaccine uptake, the population of pregnant females is vastly different than that of adolescents or adults alone and was looked at carefully regarding translation of this evidence across populations. Additionally, the study done by Wagner et al. (2017) did not follow the participants post survey, which may indicate that these participants had found the vaccines necessary, but the survey was their "cue to action" as Janz and Becker (1984) would state. An inconclusive study was done to determine if perception of MMR had effected perception and uptake of a Zika vaccine. Ophir and Jamieson (2018) determined that the perception of MMR could reduce uptake of a Zika vaccine, but severity and vulnerability could increase intentions of vaccinating; whether or not the severity and vulnerability outweighed opinions of MMR was not able to be determined.

Vaccine perception has been shown to be affected by many things such as healthcare literacy, peer input, online media, and physician input. Gilkey, et al. (2015) found that "physician communication about adolescent vaccination varied by type and [they] endorsed HPV vaccine less strongly than Tdap or meningococcal vaccines, they [also] perceived HPV vaccine

discussion as taking longer and garnering less support" (p. 185). Although this was referring to the adolescent population, it was possible for these physician attitudes to be present in the newly expanded population. When discussing provider recommendations of a vaccine, presentation had an impact on vaccine uptake as evidenced by the previously mentioned lack of education (Fadda, Depping & Schulz, 2015). In a study done to understand what drives parents' decisions, Fadda, Depping, and Schulz found that

> "[physicians] should involve both parents in … decision-making, provid[e] the proper information, motivate[e] them to be active actors in this choice, and highlight the importance of parental role in managing their children's health as a way to reach empowerment. Attention should be paid to their communicative style during vaccination recommendation" (2015, para. 55).

The consensus of the importance of physician input on vaccine follow through continued to be supported by multiple studies (Bonanni et al., 2018; Clark, Cowan, Filipp, Fisher, & Stokley, 2016).

Theoretical Framework

The theoretical framework that best underpinned this project was the Health Belief Model (HBM), which aides in understanding the failure of individuals to participate in disease prevention or screening opportunities that allow for early disease detection (Becker, 1974). There are six components that make up the HBM that are derived from psychological and behavioral theory. These components are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action, and self-efficacy (Janz & Becker, 1984).

The project aimed to determine perception and perception, which was present in four of these six components. This model was helpful in predicting vaccination behavior including how

decisions were made regarding HPV vaccination. What were the perceptions of susceptibility, severity, benefits, and barriers in those ages 27 years old to 45 years old who had not been vaccinated? Susceptibility refers to a person's perception of risk of contracting HPV, severity refers to the perception of how serious HPV was, or what the consequences were. Perception of benefits refers to how effective HPV vaccination was, while barriers refers to the perception of cost, dangerous side effects, inconvenience, and other factors. The model also included a cue to action that indicated what would have been necessary for an individual to make the decision to vaccinate or not and finally, self-efficacy refers to a person's view of their own ability to carry out the decision of vaccinating or not.

Chapter II

Project Design

A descriptive research design was used to determine the characteristics and needs of the population of interest (Moran, Burson, & Conrad, 2017). A descriptive research design was used because it was a means of describing characteristics of a particular population of interest. It involves either observational research, a case study or survey. In this project a survey was implemented to directly ask participants about their perception rather than observe their specific behavior surrounding the topic of HPV vaccination. The descriptive method identified relationships but does not identify causality. For example, the survey could not identify if lack of knowledge directly caused a participant to vaccinate or not, but instead determined if there was a relationship present, and if the relationship was statistically significant. The implementation of the survey as the means of data collection aimed to assess the perception of patients ages 27 to 45 regarding HPV vaccination and provide a description of the population. The project consisted of four phases which included preparation, pre-implementation, implementation and project

conclusion. The expected timeframe (see Appendix D) for the project pre-implementation was April to August, and implementation occurred from September 1st to November 1st. The final project conclusion phase began in November.

Setting

The setting for the project was a community clinic that cared for patients of all ages managing acute and chronic conditions. The clinic was located in the large community of Chippewa Falls which was considered part of rural Wisconsin. The clinic was an independent community aide organization that had only one location but worked with other aide organizations to provide multiple clinics and services. The rationale for choosing the clinic was the large population available to participate in the study, a majority of the clinic population being without insurance, and of low-income status. These factors made the patients a higher risk patient population due to the "growing evidence that poverty is a strong predictor of HPV infection" (Shikary et al., 2009, p. 110). Additionally, the team dynamics and location of distribution at the clinic allowed the individuals seeking a variety of services to participate in the survey without taking additional time from extra staff or additional room space.

Population

Demographics for the area included a population of approximately 18,000 people with 90% being high school graduates and about 26% having a bachelor's degree or higher (United States Census Bureau, 2018). The inclusion criteria for participation in the survey was individuals ages 27 to 45 years old, both male and female of all ethnicities with the understanding that the area was predominately comprised of Caucasian and Asian ethnicities. Exclusion criteria included individuals under the age of 27 and over the age of 45, as well as individuals who did not speak English or had already been vaccinated against HPV. The

participants included in the population were those who had been identified as a part of the newly expanded age demographic available for HPV vaccination and whose perceptions of HPV had not yet been assessed according to the literature review.

Tools

Survey items were adapted from Ophir & Jamieson (2018) and modified (see Appendix G) to meet the needs of the project. The survey (see Appendix C) had 15 questions most of which followed the Likert scale which ranges one attitude extreme from another and is scored based upon numerical value of the answer; for example, "Not likely at all" being a one and "very likely" being a five. Other survey items included yes/no questions and demographics. The importance of provider input was included on the survey for this descriptive research by including participant perception of provider and government/regulating agencies recommendations. The survey also measured general misbelief about vaccinations, perceived HPV severity and vulnerability, as well as belief in the efficacy of science (2018). Modifications were made to retain prior survey efficacy while applying the appropriate HPV terminology and real-life situations to make questions applicable to HPV vaccination. For example, the zika virus is contracted via insect bite while HPV is contracted via sexual contact.

Project Plan

Preparation

The plan to carry out this project began with establishing a team that understood the goals of the project and supported survey implementation. The team for the project consisted of medical assistants, registered nurses, clinic physicians, and the doctoral student. Once the team was established there was collaboration amongst team members as to who would be interested in

allowing survey implementation and how the survey was modified to meet the needs of the specific population.

Pre-Implementation

Clinic staff were provided copies of the approved project proposal for review with the expectation that direct participant involvement began in September 2019. Project mentor, clinic manager and doctoral student meetings reviewed the process, outcomes and plan. A team meeting was held in early August to review whether or not the survey was distributed in the exam room or in the lobby while patients waited for appointments. It was determined that survey distribution was to take place in the lobby to minimize interruption in services as well as allow appropriate participants who weren't directly patients. Clinic staff were provided with dates and times that survey implementation was to take place, all hours of clinic operation throughout the September and November timeline (see Appendix D). Review of project proposal served as written education about the project for the clinic staff. A narrative (see Appendix E) was provided to clinic staff to be placed at check in for potential participants that ensured consistency of survey introduction.

Implementation

The project was carried out following CUHSR approval beginning September 3, 2019 through November 12, 2019 over a period of 12 weeks. Data collection was done via written survey of eligible participants who agreed to participate and complete a consent form after being checked in for their appointment. During open clinic hours, individuals who met the age criteria upon check in were notified of the doctoral student's project by the narrative (see Appendix E) provided at check in. Clinic staff did not provide information about the survey and deferred any questions about the survey to the doctoral student. If an individual expressed interest in survey

participation, the doctoral student verified age, English speaking, and lack of previous HPV vaccination before discussing the survey. The survey was intended to be without introduction to the topic as it assessed knowledge and perception of the human papilloma virus.

Participants were asked to review the narrative and consent form (see Appendix E), not include name or other identifying information on the survey, to fill out both sides of the written survey, and to return to the doctoral student. Surveys were collected by the doctoral student from the participants when they were finished for evaluation. Surveys were shuffled upon each submission, and data compilation was only done biweekly or less depending on response tally by the doctoral student for increased anonymity of responses. No other individuals had access to the survey responses.

Project Conclusion

Compilation of survey responses by manually inputting each answer in excel provided a way to correlate the demographic responses with overall survey question responses as well as correlate individual survey responses amongst each other. Statistical data analysis determined if there were specific ways in which HPV vaccine education should be tailored for both patients and for providers. Specific inhibitions to HPV vaccination such as provider mistrust would warrant a training course for providers on vaccination promotion and establishing patient rapport.

One outcome of this project was to establish if HPV vaccination was favorable or non-favorable in the population of 27 to 45 year old individuals. Survey responses indicating high perceived risk and vulnerability, highly likely to change, take precautionary measure and favorable opinions of government agencies and science were indicators of those who were likely favorable to vaccination. Another outcome of the project was to identify barriers to favorable

views of vaccination in the population prior to education being provided. Example barriers to vaccination included responses that were unfavorable of the CDC, NIH and science, low perceived risk, low perceived vulnerability, and "incorrect" responses indicated lack of knowledge surrounding HPV. These outcomes could be utilized to create targeted educational pamphlets, posters, and additional material for the population. Local area providers were eager to offer HPV vaccination to this new population and provide education that could be tailored dependent on project outcomes (T. Brock, personal communication, March 4, 2019).

When the project was completed, project outcomes and educational recommendations were provided to both the implementation clinic and surrounding area women's health and family clinics for review. Follow up for the project included the clinic locations accepting or rejecting the recommendations, based on project outcomes, and either continuing on with current HPV vaccine education or creating their own targeted HPV education that met the population needs.

Data Analysis

Data collection from the survey implementation resulted in both quantitative and qualitative data which included the Likert scale items, demographic data, yes/no questions and one fill in the blank question. Data analysis procedures used were correlating intention with question one of the surveys as well as bivariate correlations which determined relationships between survey items and intent to vaccinate against HPV. Multiple regression analyses were carried out to determine the relationship between demographic factors and intent to vaccinate against HPV as well as favorable or unfavorable view of HPV efficacy and science. Percentages were found for the demographics and qualitative questions. The data was manually entered into an Excel spreadsheet for statistics to be analyzed electronically.

Institutional Review Board and Ethical Issues

The clinic where the project was carried was not affiliated with an Institutional Review Board or regulatory agency, and Bradley University's CUHSR in Peoria, IL reviewed the project for approval. CUHSR approval was granted on August 26, 2019 (see Appendix H) and implementation began September 3, 2019. Research participants were provided with a consent form which informed them that participation was confidential and voluntary. Participants were asked to include optional demographic information but told to refrain from including any identifying information on the survey itself including their name. This project did not include any members of vulnerable populations.

Chapter III

Organizational Assessment

The Midwest rural clinic where the descriptive research was carried out aimed to provide advanced care and education to a primarily rural population. Surrounding community providers aimed to lead the charge in vaccination promotion including HPV vaccination. The area's provider population was eager to learn how individuals felt about HPV vaccination at a later age and how they could encourage the population to vaccinate themselves (A. Hayek, personal communication, March 25, 2019; R. Mroczenski, personal communication, March 6, 2019; T. Brock, personal communication, February 8, 2019). An anticipated barrier to implementation was the time available to participants to complete the survey. One way the barrier could have been reduced would have been to convert to a digital survey, however the number of individuals able to take the survey would have been limited due to the doctoral student only having one available tablet at a time for survey participants. Another barrier to implementation was possible apathy toward surveys leading to lack of participation. A way to reduce this barrier could been to

have candy available at the doctoral student's table where surveys are distributed, however this may have impacted the ethical dilemma of incentivizing individuals to participate. Specific risks identified included lack of participation, lack of survey completion for adequate statistical analysis, and the possibility of results indicating no lack of education in this expanded population or no specific needs to be addressed.

Cost Factors

The budget (see Appendix F) for the project lied solely in cost of printing and transportation costs for the project doctoral student. The total estimated cost was $300 with the total final costs closer to $400 due to lengthening of the project implementation period. The purpose of patient education was to produce desired behaviors that led to healthy choices and health improvement. There was no typical cost for designing a new educational model, however an area provider stated that for every dollar spent on patient education almost 10 dollars are saved by the clinic (T. Brock, personal communication, March 4, 2019). The outcomes of the survey could have impacted the type of education that was provided to providers and patients on HPV vaccination. By tailoring education to the educational needs of the specific population, HPV vaccination rates could have increased more than if generic education was provided to them. Providing tailored education would have likely led to lower costs surrounding HPV related care and lower costs in regards to having created unnecessary generic education only to find out that it is not applicable to the patient population.

Chapter IV

Analysis of the Implementation Process

Initially, individuals entering the clinic were given the narrative by the receptionist upon check in and could walk to the back of the clinic to obtain a survey if they were willing to

participate. The implementation process began with only two participants responding to the survey during the first two weeks of implementation. This was discussed with the clinic director and instructor to determine ways to increase participation with doctoral student placement or incentive being a potential option. During the third week of implementation, the modification was made that the narrative was handed directly to individuals upon check in at the front desk by the doctoral student. Patients were then able to ask the doctoral student for a survey and review the eligibility criteria with the doctoral student before obtaining a survey.

The initial plan was to implement in September and October 2019 (see Appendix D) but was extended two additional weeks through November 12th to increase the total survey response. It was considered to extend the timeline further, however, the clinic saw a yearly decline in patient census over the holiday season and the number of individuals returning to the clinic continued to be higher than the new patient number which was not effective for implementation.

The most significant lesson learned throughout the implementation process was that survey distribution obtains a better response when done face to face. Being relational has always been important in every aspect of nursing, so why not in survey distribution as well. When comparing the mean response of one participant in weeks one and two of implementation to an average of six participants in the following weeks, it actually made a significant difference to hand out the narrative and survey with a smile.

Analysis of Project Outcome Data

The descriptive research revealed that individuals ages 27 to 45 needed increased knowledge of HPV. During the implementation period, there were 135 eligible patients that received care at the clinic which indicated a 53% response rate. However, some eligible survey participants were not registered patients, but rather eligible individuals who presented at the

clinic with a patient which means that the total 72 responses does not accurately reflect the response rate. Once removing incomplete surveys, 67 surveys remained.

When just taking a quick glance at the raw data there were questions that looked as though the response demographic mirrored each other (Figure 1). Two of those questions were assessing likelihood of vaccination and likelihood of taking preventative action against HPV such as condom use. The questions related to how HPV is transmitted and the likelihood of HPV causing cervical cancer also mirrored each other. Other responses that stood out in the raw data included a surprisingly high percentage of neutral responses for most questions as well as a high percentage of "not likely" or incorrect responses to questions regarding HPV facts.

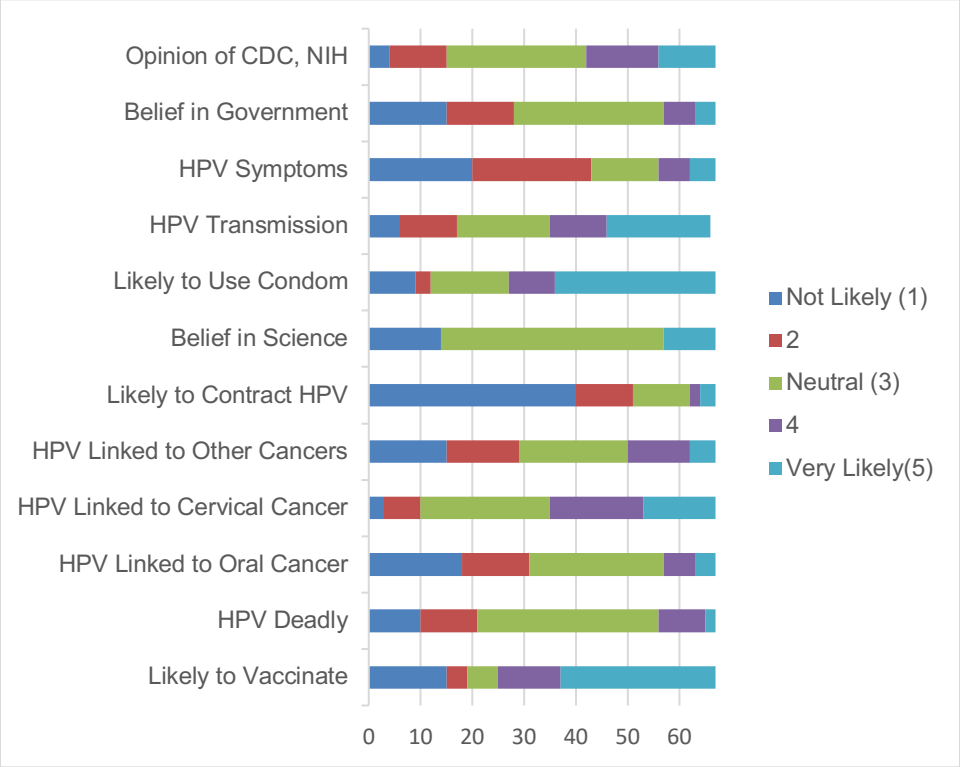

Figure 1: Survey responses. This figure illustrates the total number of responses for each value on each Likert Scale survey question. This figure omits the two yes/no and one fill in the blank questions.

Average responses seemed to have indicated that participants were only minimally above neutral to receiving a vaccine that protected against cervical cancer and responded similarly to

the idea of protecting themselves against HPV, i.e. using a condom, even if they were aware their partner had HPV. However, when having looked at the data using more than one measure of central tendency, the most participants actually responded very likely to vaccinate and protect themselves against HPV (Figure 2).

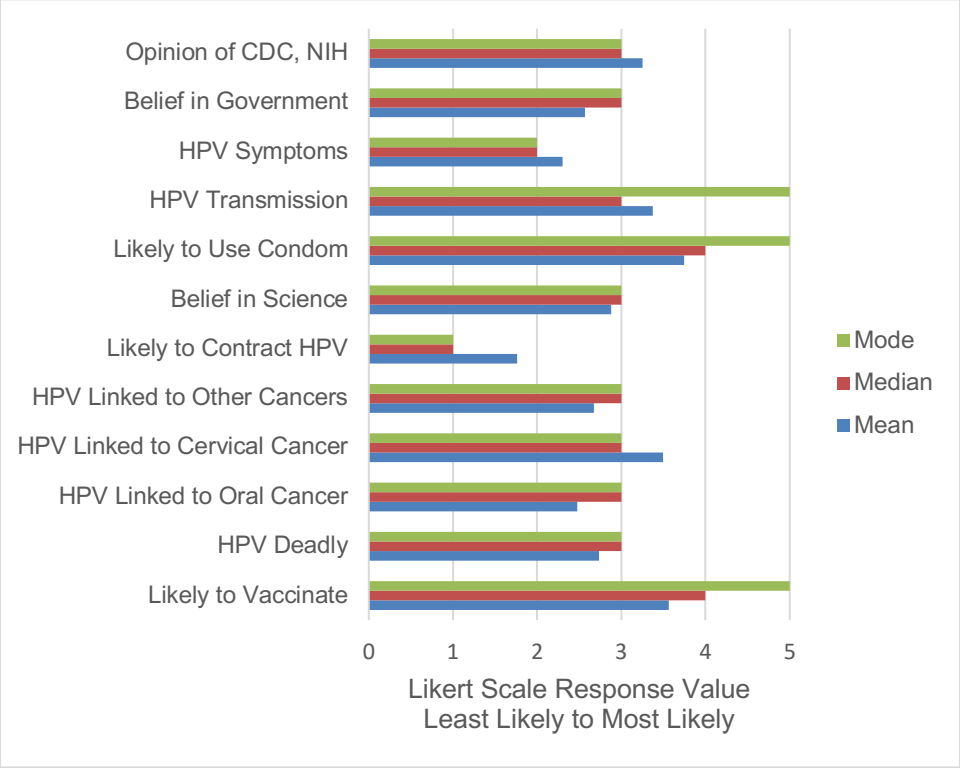

Figure 2: Central tendencies of survey responses: This figure illustrates how the measures of central tendencies varied for each survey question.

In Excel, "count if" statements were used to compile data, for example "count if n = 3" would compile the neutral responses for a particular question. This was helpful for two tailed T-tests across the survey questions. These two tailed T-tests indicated that there was no significant difference between the mean responses of questions regarding vaccination and taking protective measures, which further supported their positive correlation. When directly asked about having done anything to protect themselves against HPV, including wearing a condom during intercourse, only 2.3% of participants indicated "Yes." The data, when compared to the

knowledge and likelihood of vaccination, suggested that the majority of the population was willing to protect themselves but did not find HPV to be of significant risk to them. Additionally, it vaguely spoke to the sexual practices of the population with such a low percentage willing to wear a condom with concerns for sexually transmitted infections unrelated to HPV. However, the question of likelihood of contracting HPV in the next year showed a significant number of participants indicated "not likely" so there could have been multiple reasons for the responses. One hypothesized reason was that these participants were monogamous and truly had no concerns of contracting a sexually transmitted virus.

Participants, on average, responded lower than neutral to the likelihood of HPV leading to death and similarly with the likelihood of HPV causing oral cancer, or other types of cancers. Participants, on average, responded more likely than neutral to the likelihood of HPV causing cervical cancer. These responses indicated some education surrounding HPV as they responded that HPV is likely to cause HPV, however they were less confident about HPV's relationship or other cancers such as oral or anal cancer. There was no statistically significant difference between questions regarding HPV facts which suggested that participants that lack knowledge of HPV did not lack knowledge in a specific area but lacked general awareness and overarching knowledge.

Survey responses indicated high perceived risk and vulnerability, highly likely to change, take precautionary measure, and favorable opinions of government agencies and science were expected indicators of those who are likely favorable to vaccination. There was a positive linear relationship between participants whose response to likelihood of vaccinating against cervical cancer and likelihood of HPV leading to death; an even stronger relationship to the likelihood of taking action to prevent HPV which were expected natural relationships but it also suggested that

those who were more likely to vaccinate were more familiar with HPV being linked to cervical cancer. Another expected response was that there was a significant correlation between likelihood of vaccinating and favorable opinions of the Centers for Disease Control and National Institute of Health which would have indicated a confidence in these organizations may not be causative but was at least correlated positively to vaccination against HPV.

Another significant correlation was participant responses to the likelihood of contracting HPV and taking action to prevent HPV. The positive linear relationship indicated that the more likely they were to contract HPV the more likely they were to take preventative action or vice versa.

When looking at the yes/no questions, only approximately 1% of respondents have gone to any online or print source for information about HPV in the last year and as stated above, only 2.3% of participants indicated they had taken precautions against HPV including wearing a condom.

For the single fill in the blank question, participants were asked to provide their best estimate of the number of cancer cases in the United States caused by HPV in the last year and the responses were incredibly varied, ranging from zero to 2 million, so the average of 43,000 clearly did not provide an appropriate picture of the estimates. The median of responses was 200 with the mode being zero. The mode response to the estimation of HPV related cancer cases indicated that most participants believed that HPV does not cause cancer in the United States. The median being so high was due to one outlier response being 1 million cases.

Demographic data for this survey was not well distributed with 91% of participants being Caucasian and the average annual income being below twenty-five thousand dollars and average education being a high school education. Although the demographic information unintentionally

lacked variance, it then was suggested that the responses and significant relationships were not driven by the participant's demographics.

Chapter V

Findings

The main objective of implementing a valid survey was to determine if there was a positive, neutral, or negative perception of HPV vaccination in the 27 to 45 year old population within 60 days. The findings of this study indicated a fairly neutral perception of HPV vaccination. A secondary objective was to determine if there were related reasons that members of the population are not choosing to be vaccinated within that same 90 days. The main reason shown in the survey responses was that participants find HPV to be relatively of little risk to them, having a neutral opinion about the related consequences of HPV. Participants also had neutral responses to their opinions about the NIH, CDC, federal government and science's ability to fix problems. This suggested that there was not a generalized poor opinion of these organizations and the education or products they endorse. The average neutral opinions of the participants were helpful in identifying that these were not likely barriers to patient education. The most important factor that the survey identified was that participants found HPV of little to no threat to their health, let alone a virus that causes cancer. This factor was hypothesized to be due to lack of education given the neutral responses to questions regarding HPV facts.

Limitations or Deviations from Project Plan

A limitation of the project included a very small sample size. Ideally, the project would have been carried out at multiple different facilities in different areas with different demographics to offer the best picture of the data. Another limitation, partially due to sample size but also due to geographic location was the prevalence of Caucasian respondents, 91%,

rather than participants from a variety of races. Something that was discussed with clinic staff after implementation was participant's honesty about their age. With the survey being age specific and some individuals being sensitive about their age there may have been some participants who were actually older than the 45-year-old cut off who lied about their age. This could be remedied in future studies by offering the survey after registration, therefore confirming age in the patient database, rather than offering the survey at reception. There were some responses that could have been explained by sexual activity which was not a question on the survey. Information on sexual activity could have indicated a lack of significant relationships once correlated with monogamy or other sexual activity factors. Finally, the neutrality of some responses was being disputed as a lack of knowledge rather than a truly neutral opinion. Some evidence suggests that there exists different types of neutral responses, the demographic that participated in the survey was consistent with one that was truly opinion neutral rather than uninformed neutral (Maness, 2018).

Implications

Practice

The outcomes of this survey provided direction to not only the initial implementation location but for all local clinics that aim to offer health promotion, specifically HPV vaccination. The survey was inexpensive to implement and would be for clinics to implement on their own as well. Survey implementation was time consuming for the doctoral student as it was independent, however, clinic registration personnel could be educated on survey qualifications and implementation standards. By simply updating an excel spreadsheet with function cells the data could quickly be analyzed upon each data update to evaluate for new trends. Additionally, if the survey was transitioned to digital format, directly linking it to the spreadsheet would have

eliminated the need for manual data entry, making the survey implementation even easier for continuing evaluation of the population.

The outcomes of the survey provided direction for education delivery regarding HPV vaccination to the 27 to 45 year old population. Area providers suspected that the population may need education regarding specific risk of timeline regarding vaccination, however, the survey data suggested the population had little awareness about HPV and needed initial broad-spectrum education. The education provided to patients should be comprehensive on all aspects of HPV. However, it should be tailored to the patient by taking time with each patient to identify their risk for HPV. In discussion and presentation of project data, providers identified a helpful tool to identify HPV and other sexual health risks, the sexual exposure chart () produced by the West Virginia Department of Health Adolescent Pregnancy Prevention Initiative (K. Musolff & L. Walder, personal communication, January 6 & March 2, 2020). The identification of risk was the most important factor missing in the HPV education; emphasizing to patients that their past partners were just as much of a risk as their future partners should be made because HPV typing with ASCUS pap smears had only been going on for the last 10-15 years and there was a surprising number of monogamous women who decline pap smear due to their lack of sexual activity. Additionally, it was known that HPV can lie dormant under the first cell layer that isn't seen on pap smears so if HPV typing was not carried out with pap smears and the patient had not been vaccinated there is the risk that exposure to HPV from a partner years prior could continue to place them at risk.

The modifications that could be made for future performance of the survey include initial in-person administration as this did previously help with participant follow through. Additional

modifications could be providing incentive for participation to increase overall participation rates as well as digital formatting of the survey to speed up data input and ease of participation.

The survey implementation was written in such a way that it can be implemented in any clinic or inpatient setting so long as the participants meet the survey criteria. The survey was written to be easily understandable at a 6th grade readability level and it in fact did seem to be easily understandable to the population of participants whose highest education was high school. Participants did present with questions for the doctoral student on rare occasion relating to actual knowledge of HPV, not necessarily readability.

Future Research

Future research on the perception of HPV vaccination in 27 to 45 year old individuals could be exponentially expounded upon in multiple different directions. The perception of the particular population was limited to participants who were generally Caucasian, low income and had a high school education. A future implementation should survey a completely separate population, for most comparable results keeping the population consistent. In addition to surveying populations separately, the data should be compiled to compare across demographic differences. Another potential research question could be, does sexual activity impact HPV vaccination perception? This could be assessed by adding questions regarding sexual activity to the existing survey for participants who have not been previously surveyed. Another potential research question could be asked after tailored education is given based on survey results; how does tailored education improve vaccination rates. By the time this research question is implemented there will likely be at least one year of vaccination data available for the population to compare to.

Nursing

The survey implementation and results impacted nursing practice through providing guided patient education whether in the clinic or inpatient setting. Shortly after dissemination of the project began, age appropriate HPV education became available to the newly expanded population from Merck, the makers of Gardasil 9. The pamphlet education was generic in nature speaking to the targeted population about Human Papilloma Virus and its related cancers. However, this assessment of perception identified that it is truly up to healthcare providers that are giving HPV education to identify and address individualized risk with each patient and to speak to the severity, importance and outcomes of HPV vaccination. As more research is done that may identify any new barriers or barriers not previously identified, this should be the focus of nursing practice in regards to HPV vaccination education. Nursing education should be provided for nurses and advanced practice providers regarding how to have the discussion of sexuality and risk in a way that is not intrusive or offensive to patients. Additionally, it is important to provide education on how to approach HPV vaccination and sexuality in a culturally appropriate manner. There are diverse populations that will receive the discussion differently and have differing views on sexuality. Nursing education should also include a sense of urgency and severity toward HPV vaccination, including instructing nurses and future APNs to emphasize this vaccine just as much as any other vaccine and even remind patients that this is a vaccine that prevents cancer. It could be suggested from the survey data that HPV vaccination was not thoroughly discussed by providers even with the younger patients who could be this population's children.

Health Policy

At the time of implementation, on every level, there was no recognized HPV vaccination education aimed at the population of interest. Informational pamphlets that included the raw data

surrounding HPV risk as well as the implications of HPV had recently been produced that target the population of interest and could be helpful in initial education. The ongoing policy in the outpatient setting should be to assist the patient in identifying their risk and to verbalize the data that would be in informational pamphlets and provide their sound medical opinion on the risks and benefits of HPV vaccination. While the barrier of antivaccination was not identified in this survey it could be helpful for providers to note that the HPV vaccine had fewer identified side effects or negative outcomes than any other vaccine yet is able to prevent cancers. At the time of implementation, HPV vaccination was not mandated by states for public schooling and no vaccination requirements were appropriate for the extended population. Medicaid coverage only covered HPV vaccination for patients up to the age of 18 which was not in accordance with previous ACIP guidelines let alone the recent population expansion. From a federal level, Medicaid coverage should support ACIP guidelines and cover vaccination for patients up to 45 years of age. With the knowledge that HPV education should be tailored to each patient's risk and improved coverage of cost, vaccination rates could drastically improve.

Chapter VI

Value of the Project

The implementation of this survey provided valuable knowledge regarding the perception of HPV in a previously unassessed population. The newly expanded population was minimally exposed to HPV vaccination information, if at all. The knowledge gained from the survey data directly relates to the what, the how and the when surrounding patient education. The knowledge should be used to educate patients on the broad spectrum of HPV related data including risks of HPV, preventative protection and screening, as well as benefits of vaccination while placing particular emphasis on individualized patient risk.

DNP Essentials

The implementation of the project met most of the DNP Essentials including DNP Essential I: Scientific Underpinnings for Practice by merging the psychosocial sciences with the biophysical by identifying perception and assessing for potential barriers to patients taking action that results in positive health change. Essential II was met by evaluating the current care delivery approach to HPV education in the newly expanded population. Evaluation of existing data, survey data collection and evaluation, and application of findings all served to meet Essentials III, IV and VII. Essential V was met through the IRB application process as well as advocacy for the nursing profession in obtaining an implementation site. The overwhelming amount of interdisciplinary communication and efforts that were required to carry out the project fulfilled the Essential VI. Essential VIII was met through defense and dissemination of the project.

Plan for Dissemination

The project was presented to local healthcare organizations including family practice providers, OB/GYN providers, health department officials, and low-income clinic providers. The presentation was made orally with PowerPoint visual aid. The project abstract was submitted for review to be considered in the 2020 Doctors of Nursing Practice Conference. Depending on peer review and response at the conference and from colleagues in the area, the project would be submitted for publication in adult OBGYN and Public Health nursing journals such as "Evidence Based Nursing" or "Journal of Obstetric, Gynecologic, & Neonatal Nursing" as much of the HPV related knowledge is in pediatric journals.

Attainment of Personal and Professional Goals

Personal and professional goals included improvement of DNP Essential measurable competencies. Improving interprofessional communication and leadership skills as well as

improving evaluation of care delivery models in education were two that were regularly addressed throughout the project. The project increased involvement in surrounding clinics and disciplines that held stake in the vaccination of the newly expanded population. The project goal of identifying a knowledge gap regarding HPV vaccination was attained even though a specific area was not identified, there was a significant lack of knowledge that was present in all areas of HPV vaccination. The personal goal of impacting local nursing practice surrounding HPV vaccination was attained by presenting and reviewing the data with surrounding area clinics.

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Appendix A

SWOT Analysis

Objective:
To determine the perception of the 27 to 45 year old population surrounding HPV vaccination.

Internal Factors	
Strengths (+)	Weaknesses (-)
+ Strong physician support + Evidence supporting education increases vaccination + Improved evaluation of care scores with increased rates + Good interprofessional relations	- Poor facility support for research done in clinic - Lack of provider follow through in department communication

External Factors	
Opportunities (+)	Threats (-)
+ Population specific needs identified + Opportunity to create focused vaccine education Leading to… + Increased vaccination rates + Decreased HPV diagnoses	- Possible patient perception not mimicking educational needs - Identifying enough patients willing to participate in survey implementation

Evaluation of Objective:
Strong provider support along with positive outcomes of identifying specific needs for focused education leading to decreased HPV will outweigh the threats and weaknesses in determining the perception of the 27 to 45 year old population surrounding HPV vaccination.

Appendix B

Community Needs Assessment

Marathon County and Surrounding Counties in Central Wisconsin

1. Community Description
    - Rural Wisconsin
    - Population of clinic city approximately 18,000 people
    - Average county population in central WI approximately 60,000 people
    - 36% of the population ages 19 and older have received a complete HPV vaccine series (data only compiled for patients ages 19 to 26)
2. Community Needs
    - Lack of patient specific education available to the expanded population
    - Lack of vaccine statistics for the expanded population
3. What is being done to respond to needs?
    - The population is so newly expanded that the health department isn't able to offer the vaccine at this time and the clinic providers are slowly beginning to offer it without an appropriate way to present applicable written education to patients
4. What resources are available to meet the needs?
    - Generic patient education for HPV vaccination with outdated age range and geared toward teenagers and young adults
    - Wisconsin Cancer Committee with goals to increase cancer related data and HPV vaccination rates

Appendix C

Bradley University

DNP Project Survey

This survey is in not associated with ___ clinic and is not intended to provide education, opinion or information. Please do not include any personal information on this form. Please fill out both sides of this questionnaire and place it in the box. Thank you.

If there were a vaccine that protected you from getting cervical cancer how likely is it that you would get the vaccine?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not likely at all Very Likely

How likely is it that someone who contracts the human papilloma virus (HPV) will die as a result?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not likely at all Very Likely

How accurate is it to say that a person who is infected with HPV is more likely to develop **oral** cancer?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not at all accurate Very Accurate

How accurate is it to say that a person who is infected with HPV is more likely to develop **cervical** cancer?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not at all accurate Very Accurate

How accurate is it to say that a person who is infected with HPV is more likely to develop **another type** of cancer?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not at all accurate Very Accurate

In the next year, how likely do you think it is that you will be infected with HPV?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not likely at all Very Likely

Which comes closer to your view: science enables us to overcome almost any problem or science creates unintended consequences and replaces older problems with new ones?

☐ 1 ☐ 3 ☐ 5

Science Enables Us to Overcome Almost Any Problem | Somewhere in between | Science creates unintended consequences and replaces older problems with new ones

How likely are you to take precautionary steps, such as using a condom, if you learned that your partner had HPV?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not likely at all Very Likely

Have you gone to any source online or offline in the past year to learn more about HPV?

☐ Yes | ☐ No

Is it accurate to say that HPV can be transmitted by anal, oral or vaginal intercourse?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not at all accurate Very Accurate

How accurate is it to say that an individual who has HPV will know it because HPV always produces noticeable symptoms?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not at all accurate Very Accurate

Just your best guess, how many cases of cancer have there been in the United States in the last year that were caused by HPV?

In the past 3 months, have you done anything to protect yourself from getting HPV?

☐ Yes | ☐ No

How confident are you in the federal government's ability to respond effectively to an increase in HPV related cancer in the United States?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Not confident at all Very Confident

What is your general opinion of the Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH)?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Very Unfavorable Very Favorable

Please provide us with demographic information. (Optional)

Race.

☐ Caucasian ☐ African American ☐ Asian ☐ Hispanic ☐ Other

Annual Income.

☐ <$25,000 ☐ $25,000-$50,000 ☐ $50,000-$75,000 ☐ >$75,000

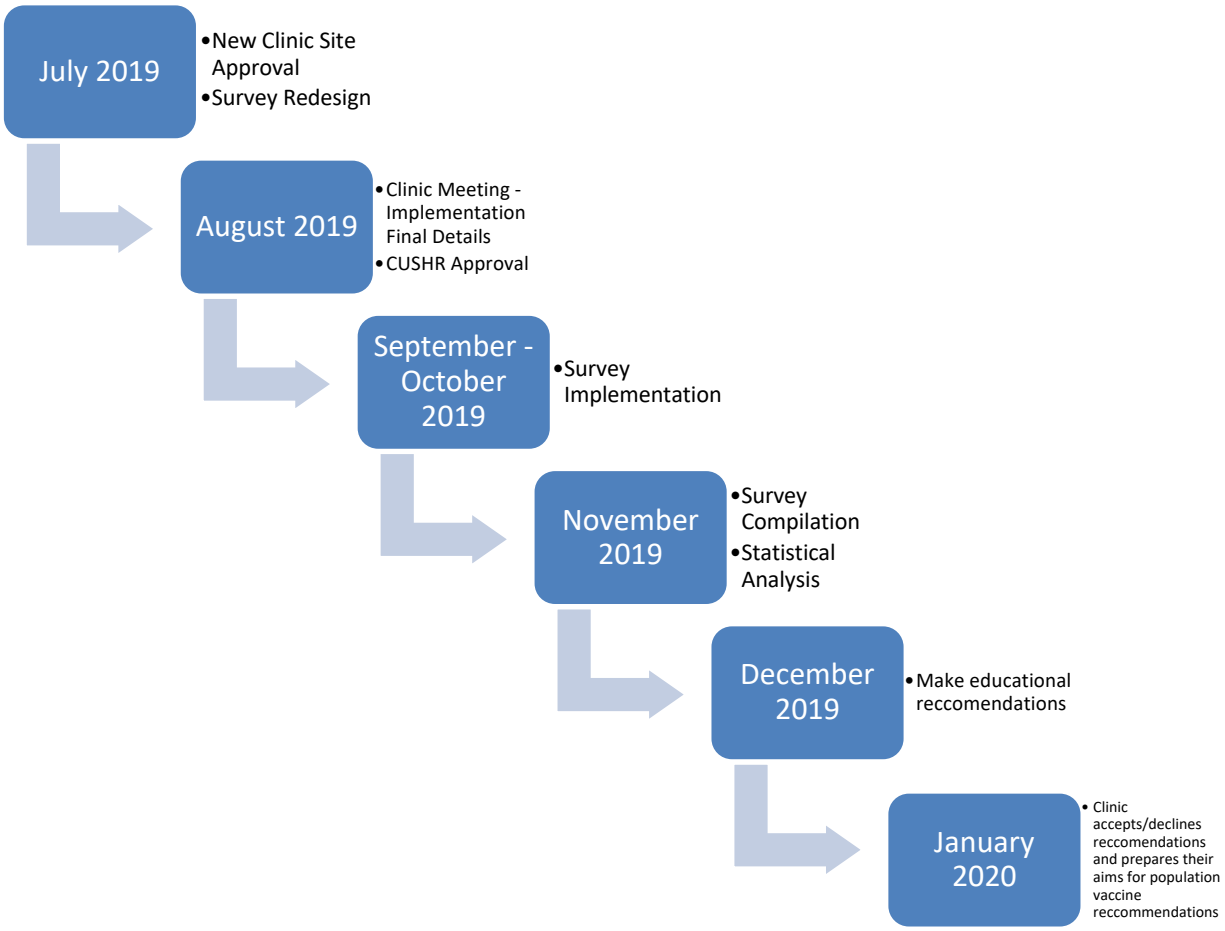
Level of Education Completed.

☐ Less Than High School ☐ High School ☐ Some College ☐ Bachelor's Degree or Higher

Sex.

☐ Male ☐ Female ☐ Other

Appendix D
Project Timeline



Appendix E
Research Subject Informed Consent Form

Shanna Geier, a Bradley University doctoral student is conducting research on the Human Papilloma Virus vaccine. This research project involves participating in a brief survey that should take less than 15 minutes to complete. If you are between the ages of 27 and 45, speak English and have not been vaccinated against HPV you are eligible to participate. Your help in this research would be greatly appreciated!

PARTICIPATION

Your participation in this survey is voluntary. You may refuse to take part in the research or return the survey at any time without penalty. You are free to decline to answer any particular question you do not wish to answer for any reason.

BENEFITS

You will receive no direct benefits from participating in this research study. However, your responses may help us learn more about Human Papilloma Virus vaccination.

RISKS

There is the risk that you may find some of the questions to be sensitive.

CONFIDENTIALITY

The survey does not collect identifying information such as your name, address, or phone number. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

CONTACT

If you have questions at any time about the study or the procedures, you may contact my research supervisor, Dr. Silvest-Guerrero via phone at (309) 677-3886 or via email at ssilvestguerrero@fsmail.bradley.edu.

If you feel you have not been treated according to the descriptions in this form, or that your rights as a participant in research have not been honored during the course of this project, or you have any questions, concerns, or complaints that you wish to address to someone other than the investigator, you may contact the University Committee on the Use of Human Subjects in Research at (309) 677-3877.

Appendix F
Budget

Survey Copies

- $0.20 each with the hope that at least 100 patients will participate in the survey ($20)

Transportation

- $0.58 per mile with 80 miles round trip three evenings per month ($380)

Appendix G
Survey Permission

Ophir, Yotam <yotam.ophir@appc.upenn.edu> Wed, May 29, 3:34 PM

to me

Thanks Shanna,

Generally speaking, you don't have to ask for an approval when adopting a scale from a published manuscript– All you need to do is to cite us in your study and say something like "items were adapted from Ophir & Jamieson (2018) and modified for this study…" and then add our paper to your references list…

As for your own work – yes, I would be very happy to help you modify the items- Please feel free to send me your items/scales and I'll do my best to give useful feedback,

Let me know if I could be of any other help,

Best,
Yotam

Yotam Ophir, Ph.D.
Assistant Professor, Department of Communication
University at Buffalo, State University of New York
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Appendix H
CUHSR Approval

BRADLEY University

DATE: 26 AUG 2019

TO: Shanna Geier, Sarah Silvest Guerrero
FROM: Bradley University Committee on the Use of Human Subjects in Research

STUDY TITLE: Perception of each HVP in adults ages 27 through 45
CUHSR #: 56-19
SUBMISSION TYPE: Initial Review

ACTION: Approved
APPROVAL DATE: 26 AUG 2019
REVIEW TYPE: Exempt

Thank you for the opportunity to review the above referenced proposal. The Bradley University Committee on the Use of Human Subject in Research has determined the proposal to be EXEMPT from IRB FULL REVIEW according to federal regulations

The study has been found to be exempt pursuant to 45 CFR 46.104(d) 2i [Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording). The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; employability, educational advancement, or reputation]. A waiver of documentation of consent is granted. The survey anonymous and your procedures make re-identification unlikely.

Please submit a final status report when the study is completed. A form can be found on our website at https://www.bradley.edu/academic/cio/osp/studies/cuhsr/forms/. Please retain research records for three years from the conclusion of your study. Be aware that some professional standards may require the retention of records for longer than three years. If this study is regulated by the HIPAA privacy rule, retain the research records for at least 6 years.

Be aware that any future changes to the protocol must first be approved by the Committee on the Use of Human Subjects in Research (CUHSR) prior to implementation and that substantial changes may result in the need for further review. These changes include the addition of study personnel. Please submit a Request for Minor Modification of a Current Protocol form found at the CUHSR website at https://www.bradley.edu/academic/cio/osp/studies/cuhsr/forms/ should a need for a change arise. A list of the types of modifications can be found on this form.

While no untoward effects are anticipated, should they arise, please report any untoward effects to CUHSR immediately.

This email will serve as your written notice that the study is approved unless a more formal letter is needed. You can request a formal letter from the CUHSR secretary in the Office of Sponsored Programs.