**HPV Vaccine Latina Immigrants**

**1. Introduction**

Latinas have more than 1.6 times high risks of cervical cancer and mortality than non-Hispanic white in the U.S. One main root cause of this gap is that the reports from cervical cancer screening depicts low rates of papanicolaou (pap) testing among the Latinas.  Therefore, deaths related for cervical cancer could be reduced through a consistent Pap screening and follow-up. Two decades ago, the US Food and Drug Administration (FDA) developed policies to allow for Gardasil as the first HPV vaccine.  In 2010, FDA approved Cervarix as a second vaccine towards preventing the widespread cervical cancer issue evident in different countries. Regardless of the extensive support for the HPV vaccine by 2011, only 45% of the women begun the series with only 30% receiving the full three doses needed for complete vaccination (CDC, 2011). Due to the limited HPV immunization uptake, it is relevant to highlight areas to target policies that will improve HPV vaccine uptake. The study seeks to propose a HPV vaccine policy aimed to improve the health outcomes of the Latina immigrant communities, results will prioritize on more research as so far there is ever increasing apathy on immunology. To achieve this objective, the study adopts Eugene Bardach’s eightfold which entails definition of the problem, source of evidence, development of alternative solution, identification of approach to be used in decision making, estimation of the policy’s impact, development of decision matrix, alternative of the policy, and implementation.

**1.1 Problem Statement**

Out of the ten million of the new cancer that develop every year, 20% is connected to infection agents of various types. 30% of these infections is connected Human Papillomavirus (HPV) which has been related to cervical cancer (Edwards, et al. 2009). According to World Health Organization, HPV affects approximately 640 million people and this amounts to nearly 13% of infected incidents in the world (Malmqvist, et al. 2011). In the United States, studies have demonstrated that the Latinos women have high chances of attaining cervical cancer than the non-Latina white female. The National Cancer Institute reported that the average age adjusted case of HPV infection for the white female was 7.2 per a hundred thousand in between 2001-2009. For the Latina, the rate was reported to be 13 per a hundred thousand. Besides, 1 document stated that the Latinas have high lifetime threat that may lead to death due to the issue of the cervical cancer epidemic than the non-Hispanic white women. Higher prevalence rates of cervical cancer have also been found among Latina immigrants (Ward et al., 2004). In one study Guiliano, Papenfuss, Schneider, Nour, and Hatch, (1999) conducted an extensive cross-sectional study on the Mexican American women who lived in the Southern Arizona to determine risk factors for HPV infection. U.S. and Mexican born Mexican American women who were a minimum of 18 years of age were recruited from a county health clinic (N = 998).When compared to U.S born Mexicans, Mexicans immigrants had higher percentages of being HPV positive even though their overall profile of HPV infection was considered low risk. The study attributed the elevated risk of women born in Mexico to either the behavior of the participants’ male partners or an unmeasured sexual activity behavior pattern of the women.

**2. Literature Review**

**2.1 Annotated Bibliography**

Peters (2012) applies qualitative research design that is regarded or considered for the search on the SciVerse, Google Scholar, PubMed/Medline, and the Embase database literature from WHO website. The results illustrates that vaccination proves a successful policy intervention in preventing HPV associated with anogental and cervical cancers. HPV vaccines are presently through preventing oropharyngeal cancer for effective against HPV strains for common oropharynx. Clearly, HPV vaccine should be integrated to present an oral strategy towards oropharyngeal cancer.

Sanderson et al. (2009) investigated whether Latina mothers infected by the HPV positive individuals differed in response to the knowledge and acceptance of the HPV vaccine. The research conducts an extensive and well done cross-section survey on the women who are aged 18-64 between 2007, April and the year 2008, April. The statistics is collected from 215 HPV negative women and that of the 190 HPV positive women. The results illustrate HPV aware women are more likely to learn and posses knowledge about the vaccine as compared to HPV negative women. Efficacy that acts against cervical intraepithelial neoplasia (CIN) as tested illustrates FDA plays a useful role in civic education.

Lechuga (2016) quantitative research investigated 296 Latina women living in the Midwestern United States. The intention to vaccinate best-suggested with health care provider recommendations and policy development. However, patient factors such as perceived severity of HPV not worrying about the daughter and not becoming sexually active following on vaccination. Provision of severe discussion low risk and severe side effects.

Pinto et al. (2017) experimental research design administer a standard three-dose schedules of licensed HPV prophylactic vaccine. The focus is on the key consideration for one vaccine schedule. The infection is not entirely clear but provides clinical and preclinical evidence neutralizing antibodies for the principle mechanism of body protection. It is further noted that the HPV vaccine separated by 6 months demonstrates useful clinical evidence if administered on both sexes. This illustrates immunogenicity plays an important role towards the building of vaccines.

Jit et al. (2008) examine experimental research in vaccinating the 12-year-old girls in school for the quadrivalent vaccine covering 80 percent efficiency. Implementing catch-up campaign for girls remains a cost-effective way for administrating HPV per dose. Results indicate routine vaccination towards the 12-year-old girls who are in school is shared by catching up the requires for up to the age 18. The different parameters process is influential is variables for vaccine protection.

Ratanasiripong et al. (2013) electronic self-administered survey utilizing several data collection, investigates 3074 college women who were attending the public institution of higher education in the Southern California. The participants' ages are between 18-26. Results show that both von-vaccines and vaccines present positive results and attitudes mandating HPV vaccines. The knowledge and attitudes presented for vaccines are directly linked to the data predictors' outcomes. It is clear that HPV vaccine and the subjective norms comply with the different outcomes and expectations alleged through different behavioral control as well as outcome predictors. As well, it is clear that vaccine strategies promote medicine uptake rate amongst college women.

Gupta et al. (2016) investigates the stranded DNA viruses, which is a key causal agent for the cervical, anus, vagina, vulva, and penis cancers. Research examines existing vaccine applied to reverse HPV infections. It is clear that these viruses can be cured, but existing medication is expensive to afford. The rMV vectored HPV vaccine provides a parallel and classical approach towards producing Pichia pastoris combined with a prime-boosts approach towards preventing immune interferences due to MV. Evidently, the hormonal immune responses induce in vaccine provides a combination priming and boosting approaches HPV16L1 and 18L1.

Luque et al. (2014) prove that Latinas have a higher rate of cervical cancer compared to non-Latinas. It is clear that attitude, beliefs, exploring knowledge, and survey design revolving around HPV shows possible thematic and content analysis of qualitative data. It is also clear that covariance method useful in comparing groups of overall cultural consensus show the differences in immunology. This further illustrates that Latina women have greater knowledge of HPV vaccine as compared to non-Latina women. Results are therefore centered on attitudes, knowledge and beliefs existing at different specific sub-groups.

**2.2 Alternatives**

In an aggregate response to the article summaries provided, one easily notes that the lack of information is the major problem crippling the dispensation of HPV vaccine to Latina women. It is only clear that factors such as education level, migration or culture are the leading causes of high rates of HPV amongst Latina women. In response, these interventions seek to maximize the role of communication.

**2.2.1 Creating Awareness**

As medical standards, initial knowledge on cancer awareness requires HPV vaccination to stop the possible fueling of cancer. The high prevalence rates among the Latina are attributed to acculturation. Acculturation is a process whereby an individual adopts cultural traits of another culture. Acculturation includes social and psychological exchanges such as language, beliefs, attitudes, and socio-demographic information, such as place of birth or number of years in their country of origin (Berry, 2003).Several researchers have examined whether acculturation influences healthcare behaviour specific to women using a Health Belief Model. A majority of the research suggests that Latino acculturation has a positive effect on healthcare and perceptions of health (Lara et al., 2005). Increased levels of acculturation have been found to increase healthcare service utilization (Chesney et al., 1982). Harmon (1996) found that less acculturated Latino women are less likely compared to the highly acculturated women to have the widespread cervical cancer screening and that least acculturated women had less cervical cancer knowledge and more fear of cervical cancer death.

Similar results were found in two studies that examined the frequency of Pap smears among Latina women. Both studies found that less acculturated Latina women showed a less likelihood to have had a Pap smear (Byrd, Peterson, Chavez, Heckert, 2004). Some studies have found no significant differences between Latino acculturation and healthcare practices such as Pap smear (Suarez, 1994). Given the virus is responsible for creating a toxic environment increasing the inflammation leading to cancer, it is important to increase cancer awareness and not HPV awareness. Majority Latina might not seek information concerning a sexually related disease but might seek robust knowledge in increasing awareness levels. Ontological knowledgebase creates an ideal link to the concept and complementary multimedia content useful towards delivering patient centered-interactive agents. Evidence from Luque et al. (2011) questions on the perceptions and patient attitudes towards HPV vaccines. Getting a vaccine requires high-level knowledge, possibly high-quality training on the HPV vaccine ability to access the medicine for both structural and cultural reasons. This also better insurance levels increasing commitment towards early cancer detection and treatment, gradually reducing the risks of sharing the problem.

**2.2.2 Developing positive Intentions**

Much has been written and communicated concerning the relationship of HPV and cancer development, however, the high degree of stigmatization associated with sexually related illnesses discourages Latina women from visiting a better healthcare for further tests and checkups. Research illustrates HPV positive results for instance anxiety, shame, concern, embarrassment and other cultural or socially driven stigmas cripples the overall mission of seeking medical attention. Latina women will further fear of telling their spouses when the HPV results appear positive given the patriarch syndrome affecting this culture. Hence, the awareness campaign should create positive intentions by focusing on women equally as men. This is bridged by communicating on the unfaithfulness aspects influencing HPV consequences. Exploring the existence of a stereotype requires women to go the HPV tests as a means of achieving lasting information on their spouses' medical situation. The analysis of rights and public good dominating the discussion evaluates alternative aspects that might require persuasion of alternative treatment methods.

Besides, in creating positive intentions strategy, it is important to examine the socioeconomic forces affecting awareness levels. The higher prevalence rates of cervical cancer have been attributed to low socioeconomic status among the Latina immigrants. Ward et al. (2004) demonstrate that socioeconomic forces such as limited education, poverty and limited access to health insurance appear to be far more influential than biological factors. Socioeconomic status can affect resources such as health education, prevention and treatment. Ward et al. (2004) believe that these factors can influence women's access to appropriate early detection screening, treatment, and palliative care. Data collected from 1995 to 1999, revealed that American Indian/Alaska native and Latina women in high poverty areas had almost twice the rate of cervical cancer mortality than their counterparts in low poverty areas (Ward et al., 2004). This analysis suggested that lower socioeconomic status contributes to the higher rates of cervical cancer death found in minorities. This research suggests that cost of the vaccine, as well as other expenses to accessing the vaccine,  can be a barrier towards preventative healthcare behaviour.

**2.2.3 Responding to Barriers**

Natural and unnatural barriers blocking the flow of information crippling knowledge on HPV are the key problems leading to cancer-related incidences. Focusing the narrative on the positive side of the ledger argues that sexual activities promote procreation, however, sexual intercourses should be protected by increasing awareness levels. The discourse of scaring people to use condoms does not work given people want to experience the natural effect of sex. Policy documents indicate that government officials at the federal level17 examined the issue of the HPV vaccine within a GBA frame (Greaves 2009). GBA is a policy development approach that the federal government has been using since the mid-1990s. The goal of implementing GBA is to bring about gender equality in government programming and, hence, to the country as a whole (Hankivsky 2012). As the name indicates, GBA places a primacy on “gender as an essential variable in policy analysis” (Hankivsky 2012:172). Thus, gender is the pivotal axis through which policy is analyzed and programs are developed, regardless of their aims or orientation. Within health research and program design, GBA is a tool that amplifies the difference between men and women and puts in place "a semblance of order," where, on the ground, the difference is often difficult to demarcate (Douglas 2002 [1966]:5). Such a move works to "impose a system on an inherently untidy experience" (Douglas 2002 [1966]:5). Therefore, conceptually, GBA in health research and program design pits men against women, view them as undifferentiated "wholes" and places a primacy on the effects of gender on health. Hankivsky (2012) argues that much debate has taken place over the alternative and application of GBA in health research and program design, but not much discussion has been focused on the underlying theoretical tenets of the framework. Hankivsky critiques GBA in health research and program design for its conceptual treatment of gender. In practice, the reference to gender within prevailing health-oriented GBA frameworks generally refers to women and not men.

In addition to a lack of focus on both women and men, cost-effectiveness analyses do not invoke any form of “diversity analysis” (Hankivsky 2007b:156) as it plays out within a gender grouping. For example, how does a woman’s age, marital status, religion, geographic location or income level affect her ability to take advantage of a specific program? As a case in point, lation immigrant women who do not have access to regular Pap screenings are more susceptible to developing cervical cancer and make up a large portion of the approximately 400 cervical cancer deaths in the United States each year. The issues these marginalized women face are not addressed in current HPV-related policy in U.S. Thus, the concept of "female" that is plugged into HPV vaccine-oriented GBA frameworks insinuates that all women will encounter health-related challenges and barriers, regardless of class, race, age, educational, religious or geographical standing. GBA relies upon the "assumption – either made implicitly or explicitly – that gender is the most frequently occurring, structural and important inequality for consideration" (Hankivsky 2012:174).

**2.2.4 Research HPV Medication**

A major problem of HPV treatment is the choices of medication being in place. Most medication is traumatizing. However, existing molecular techniques in the antibody assessment and existing immunehisto chemistry are proving insufficient methods against HPV treatments. Ratanasiripong (2013) illustrates that vaccination promotion strategies have resulted in vaccine uptake rate which is essentially an offensive measure and not a defensive measure. Besides, the study targets a specific group of college women, but they suffer subject norms. Offensive measures at the research level have focused on quality control, type of fixation, methods of preventing as well genome targets and negative assay controls. Either way, these methods have suffered shortcomings preventing the growth of the virus. The study by Hartigan et al. (2012) analyzes HPV responses on disease lung might have led to a reduction of pulmonary vascular cross-section area with patients with COPD as exhibited on a lower increase shunt administered with nitro dilators as compared with normal lungs. However, HPV response depends essentially on the tone of the vessels. The HPV, therefore, fails given there is nowhere to redirect the blood.

**3. Decision Matrix**

The research will be comparing the best suggested methods of bridging the vaccine acquisition problem. The suggested alternatives include creating awareness, developing positive intentions, responding to barriers and researching on HPV medication. Each of these programs are currently being reconsidered by the FDA, as such, focus should be on the exact feasible model. Decision matrix will be guiding the collection of results. Decision require reviewing existing considerations, determining the variety of alternatives and variables, considering the organization issues influencing the decision-making matrix then developing competing alternatives. The decision matrix helps in determining the appropriate criteria for comparison, selecting possible alternatives comparing and generating scores based on the criteria.  For this research to workout appropriate, it is important to organize it in stages.

* Step 1: Developing vertical alternatives laws, to be filled by each alternative.
* Step 2: Determining the nature of existing attributes hence come up with a way of managing them.
* Step 3: Assigning relative weights that will be pursued in each instance.
* Step 4: Assigning scores between 0-100, useful towards satisfying different attributes based on attribute operating on the basis.
* Step 5: Creating highest score for the possibility of each alternative.

**Table 1: Matrix Table**

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|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Comments |
| **Interventions/100** | Medication | Options  | Communication  | Infrastructure  | Collaboration  | Decision Scores |  |
| Alternatives |  |  |  |  |  |  |  |
| Creating Awareness | 45 | 62 | 82 | 69 | 58 | 316 |  |
| Developing positive intensions | 39 | 52 | 74 | 73 | 47 | 285 |  |
| Responding to barriers | 51 | 49 | 63 | 65 | 67 | 295 |  |
| Research on HPV | 73 | 64 | 45 | 69 | 71 | 322 |  |

**3.1 Evaluation of Most Important Criteria**

**3.1.1 Importance of Awareness**

From the decision table, medication scores 316/500. This means creating the right awareness remains a key options as justified from the annotated bibliography. Awareness means that Latina will understand HPV is responsible for the high cancer incidences. Awareness on medication however suffers a low of 45/100. Meaning past awareness efforts on vaccination have been crippled by stereotypes, stigma and culture. Nonetheless, affected women do have alternatives of pursuing alternative medication. The problem is that they report illnesses when the cancer is advanced at possibly stage 3 or stage 4. However, communication scored 82; meaning awareness efforts are ever on the increasing as well patients are good at communicating how they feel, and even researching on the web. However, collaboration suffered a low of 58/100 meaning that their lacks useful approach towards achieving results. Lastly, FDA and other medical institutions do have awareness infrastructure but it is not fully utilized. This is a dilemma given that lack of effective awareness means the situation might not grow faster as other existing alternatives.

**3.1.2 Intentions on Positivity**

Positive intention lacks lowest as compared to other alternatives coming in at a low of 285/500. So far, Latina community suffers from feelings of neglecting, and women are worst affected. When it comes to their sexuality, the area is a no-go-zone. Medication ranks lowest at 39, meaning as much vaccination is available, desire of looking for early vaccination is very low. However, communication ranks highest, given that the decisions for medication are ever on the increase. Choices for medication mean that there could be existing and reliable alternatives, but they are not communicated. Options come at a surprising low of 52, meaning that there are no alternatives for vaccination, such as prevention. Given Latina women live in violent communities where most of their sexual partners are either drug dealers or not informed. Infrastructure for positive intentions comes at 73, meaning that medical institutions do have the right infrastructure for communication, but collaboration between the patients is very low and crippled.

**3.1.3 Importance of Barriers**

Researchers noted on the annotated bibliography believe that there are barriers towards vaccinations. Vaccination is crippled by the common existing stereotype which includes low education levels, as well cultural hindrances. The overall feedback for this item came at second last which was 295/500. As such, options ranks low at 49/100, while medication comes at second low 51/100. However, response barriers have attracted significant research and commitment that why collaboration ranks at 67, alternatively, communication comes at 63 while infrastructure at 65. This means that communication on the existing barriers does not exist as required. As well, the infrastructure for the other four interventions cripples at 65. In general, this alternative trails because of hybridization of communication and medication.

**3.1.4 Importance on Research**

This seems the best alternative so far having a score of 322/500. Research on medication seems the best way of improving vaccinations alternatives for HPV. Besides, stakeholder collaboration comes at 71/100. This means that stakeholder efforts in pursuits of better HPV treatment procedures such as Nanotechnology are ever on the increase. As well, vaccine providers believe apathy towards taking medication is only because it's related to sexuality, and sexual diseases are regarded as immorality in the Latina cultures. Infrastructure comes at 69 while options come at 64. Resilience on pharmacology research especially derived from cancer research by FDA and associated organs means commitment towards better vaccination is ever on the increase. However, communication between pharmacists and users does not indicate that there could be possible alternatives for treatment.

**3.2 Choice on Research**

Evidently, the healthcare systems implementation of the HPV vaccination could arise from the low perception that exists and the need for the vaccination that affects acceptability as a vaccine. These cited research illustrated that poor information concerning HPV and the role it plays towards etiology is the leading cause for the widespread of cervical cancer. The general desire amongst adult and adolescents to avoid information on the possible alternatives means that the only strategy is through research and development of more combatant but defensive measure. Crippling choices for HPV vaccination means that accepting the medicine will be on a great problem. New and better methods of treatment mean the introduction of a vaccine doubling as casual by-product probably a soft drink but still deriving vaccine preferences. Provision of appropriate research facilities focusing on medicinal strategies means that a lasting approach will require better alternatives, only useful towards responding to the particular problem. Since option emanates from the existing moral or cultural obligation, responding to the second alternative while using the fourth alternatives means the vaccination program should be going clandestine.

Besides, the existing reaction from the parts of the society will only be resolved by the fourth alternatives and not the first or the third. Marketing vaccination as a strategy means that HPV is really a deadly and embracing virus. Those acquiring such are often treated as rejects with a high immoral attitude. However, future research should not focus on one treatment alone but all treatment the body is suffering. Nano-technology against prevailing chemical induced healing seems the best reliable strategy as introduced by the fourth alternative. The focus should be on high-quality Nano-robots that are organic and can be dissolved by the human body. The nano-robots can be administered by the individual through a smartphone. The nano-robots are branded as immune boosting biotechnical organs that singular out any bacteria or virus that the human being could be suffering from.

The Anti-vaccine option presented by Nano-robot will also attract significant support from Christian conservatives who centre their doctrine on morality discussion. The nano-technology will also be remaking an adjuvant useful in suppressing tumours. The purpose of nano-robot is delivering the exact medication to the tumours not a random approach as currently being used by chemotherapy or radiotherapy. Evidence has illustrated that chemo users do not survive the ordeal, given the medication kills the healthy body cells as it kills the cancerous cells. However, the focus is on one particular area, the nano-robot are acting as an advanced surgical strike, where they deliver the tumour dying enzyme only to the tumour itself in what is considered as nanotoxicology. Besides, the nano-robot can extract the DNA information of the virus, hence request a DNA upgrade of the enzyme. If the technology is not weaponries, it can deliver great impact to the medical community, and not only to HPV related cases.

**Conclusion**

HPV vaccination on Latina immigrants remains a major challenge given the nature of education, stigmatization, and stereotypes revolving requesting of immunology for sexually transmitted diseases. As evidenced by research literature review, there could be alternatives that would be useful towards boosting acquisition of vaccine. The discussion has been deliberated on cancer awareness procedures. Several therapeutic interventions such as HPV vaccine strategies including clinical development using peptides, proteins, viral vectors, and plasmid DNA generate effective immune response against existing cancer. Lack of functional HPV specific T cells immunity associated with the virus carrier. Majority of women are free towards cancer tests but they are not free towards sexually transmitted diseases or HPV vaccination. Given the growing apathy against immunology driven strategy, the decision matrix led to prioritizing research on vaccination, where Nano technology has been identified as the best alternatives towards treating the problem.

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