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Young Hispanic Men and Human Papillomavirus Vaccination Choices

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Abstract

This exploratory descriptive study examined perceived vulnerabilities to HPV and the correlation to factors influencing vaccine beliefs and vaccine decision-making in young Hispanics males attending a large public urban university. Only 24% of participants believed the HPV vaccine could prevent future problems, and 53% said they would not be vaccinated. The best predictors of HPV vaccination in young Hispanic men were agreement with doctor recommendations and belief in the vaccine's efficacy. Machismo cultural norms influence young Hispanic men's HPV-related decision making, their perceptions of the vaccine, and how they attitudinally act upon what little HPV information they have access to. This study provides culturally relevant information for the development of targeted health education strategies aimed at increasing HPV vaccination in young Hispanic men.

Keywords

HPV Vaccine; Young Hispanic Men; Masculinity; Health Education; Cancer; Hispanic; Latino

In December 2009, the Centers for Disease Control and Prevention (CDC) approved the use of Gardasil for the prevention of genital warts in boys as young as age 9 (Giuliano et al., 2011). Clinical research has shown that the vaccine is 90% effective in preventing external lesions caused by HPV strains 6, 11, 16 and 18 (Alexander, Dempsey, Gillison, & Palefsky,

2010). The vaccine provides this definitive protection from the devastation of HPV and genital warts, and helps to prevent cancers of the cervix, penis, rectum, prostate, head, neck, and throat.

Yet, the incidence of HPV and HPV-related cancers in young men in the United States is on the rise. The prevalence of HPV infection is currently estimated to be between 65% and 93% in low and high risk groups respectively (Laurence, 2008; Smith, Gilbert, Melendy, Rana, & Pimenta, 2011). The human and fiscal costs of not vaccinating men exceed billions of dollars annually (Kim, Andres-Beck, & Goldie, 2007). However, when boys and men 9 to 26 years are vaccinated against HPV, there is a significant reduction in health care costs and a significant increase in quality of life (Elbasha & Dasbach, 2010).

Recent research suggests that while many young men have a working knowledge of HIV/AIDS and some other STIs, they fail to understand the full importance of safer sexual practices and thus maximize their risk of HPV transmission from casual contact (Bazargan, Kelly, Stein, Husaini, & Bazargan, 2000; Fierros-Gonzalez & Brown, 2002; McPartland, Weaver, Lee, & Koutsky, 2005). Because HPV infection is often asymptomatic, many young men mistakenly assume they have never been exposed to HPV and are unwilling to engage in health promotion behavior, like HPV vaccination (Giuliano et al., 2011). Because of inconsistent condom use, the transmission of HPV has increased in young adults from racial/ethnic minorities despite health education programs targeted to these groups (Ault, 2006). HPV vaccination is particularly important for young Hispanic men because rates of HPV and HPV-related cancers are increasing in the Hispanic population compared to rates in other minorities (Giuliano et al., 2011). HPV is transmitted through skin-to-skin contact and sexual contact (intercourse, oral sex). It is not just important for Hispanics, but all people. Therefore, knowing what sexual attitudes and behaviors are for different cultures is useful in promoting health and risk reduction for HPV (and for STDs and HIV) (Eisenman & Dantzker, 2006). Unfortunately, few studies have focused on young Hispanic males attending a college or university and the connection between their perceived vulnerability to HPV infection and their beliefs, knowledge, and attitudes toward HPV vaccination. There is therefore a need to examine this connection in non-clinical, high-risk samples of young Hispanic men in order to develop more effective health promotion strategies.

While knowledge of HPV transmission and HPV vaccination are important to prevent HPV related cancers, social determinants such as cultural can be an important influence on decision making. In Hispanic culture, class, nationality, sexual orientation and religion intersect to form the norm of Hispanic masculinity, referred to as machismo. Machismo is characterized by physical prowess, aggression, toughness, the appearance of being in control, and the appearance of ability to take risks (Glass & Owen, 2010; Villarruel, Jemmott, Jemmott, & Ronis, 2004). This gender role norm mandates that Hispanic men deny vulnerability, not ask for emotional support and not express distress. This standard is encouraged and maintained by familial processes, communities, schools, religious institutions, and media socialization. Research has shown that machismo frames four key health beliefs among Hispanic men: (1) the identity of manhood dictates health care seeking, (2) health is the ability to be a man by fulfilling cultural obligations, (3) illness means not being able to be a man, and (4) men seek health care when their manhood is threatened or

impaired (M. Sobralske, 2006). Thus, machismo norms should be taken into consideration during nursing intervention development. Racial/ethnic minority men are often pressured to prove their masculinity through their sexuality and sexual performance (Duck, 2009).

This could also influence young Hispanic males' health promotion decision processes. For example, research has shown that norms about socially appropriate male behaviors and sense of control influence Hispanic males' decision to use a condom and may influence their intent to be vaccinated (Eisenman & Dantzker, 2006; Kobetz et al., 2010). Furthermore, a recent study found that Hispanic men initially interpreted an HPV diagnosis as an indication of their partner's infidelity but later acknowledged their initial reaction was based upon cultural ideals of manliness (Fernandez et al., 2009). For some Hispanic males, an approach that integrated an approach with the knowledge that for some Hispanic men Machismo is correlated with socioeconomic status so low socioeconomic status may be a barrier to HPV vaccination as explicated in findings from Victor De La Cencela (1986).

As the HPV vaccine was introduced in 2007 many health providers, health policy makers and researchers discussed who would or would not accept the HPV vaccine. (Thomas, 2008). There were no surveys that examine HPV vaccination acceptability at that time, so the Parental HPV survey or PHPVS was developed and then piloted in both English and Spanish to evaluate parental knowledge, beliefs, and correlates of HPV vaccination (Thomas, Strickland, Diclemente, & Higgins, 2013). The PHPVS contained 28 Likert scaled items and maintained high internal consistency across all subscales (perceived severity and perceived vulnerability of HPV; perceived benefits and perceived barriers to vaccination), with a high total Cronbach's alpha ($r = 0.96$) that was not increased by item deletion (Thomas, et al, 2013). As HPV research has continued to evolve the PHPVS has been used in populations experiencing health disparities and is being adapted for use in foreign countries as diverse as Bangladesh and the Dominican Republic.

It is important to examine male HPV vaccine acceptability using a specialized tool to identify the influenced by multiple factors including sexual activity, perceived susceptibility to HPV transmission, and male perceptions of vaccination benefits (Fernandez et al., 2009; Gurman & Borzekowski, 2004; M. C. Sobralske, 2006). Moreover, risk-taking behaviors associated with HPV infection, including not using condoms and having multiple sexual partners, have been shown to occur at significantly high levels in Hispanic college-aged populations (Fierros-Gonzalez & Brown, 2002; Jemmott, Jemmott, Braverman, & Fong, 2005). Therefore, this study examined perceived vulnerabilities to HPV and the correlating factors that influence vaccine decision-making in young Hispanic males.

Sample/Setting

A total of 116 young Hispanic males, ages 18 through 24, were recruited from the psychology research pool of a predominantly undergraduate population attending a large state urban university in the southeast United States during April 2010 through Institutional Review Board Approved flyers and online notices, and also approved by the Institutional Review Board of the University the students attended. The men earned extra course credit for their participation if they completed the survey anonymously. Our rationale for the

anonymous approach is based in research literature on stigma. Many other infections that can be transmitted through sexual activity can carry stigma and for this population we thought an anonymous survey would help us with recruitment and self-report (Stephens & Thomas, 2011).

Methods

This descriptive correlation study used an anonymous survey with a convenience sample of young Hispanic men attending an urban public university in the southeastern United States.

Measurement

Anonymous surveys given to each participant included demographic questions (age, residence, class standing, income, and race/ethnicity), sexual activities (numbers of partners, types of sexual activity including oral sex, anal sex, and masturbation) and HPV specific items adapted from the previously validated Parental Human Papillomavirus Survey (PHPVS) (Thomas et al., 2013). For this study, the instrument was modified for college-aged young adults and only had 27 items. The modifications included the removal of 5 previous items referring to parents' choices on vaccination and the addition of 4 new items focused on knowledge about HPV transmission so the survey items were more relevant to the subjects.

Procedures

Participants who had read the flyers and online notices and wanted to participate, met at a self-selected time in a classroom where a research assistant introduced the study and then gave instructions to the men to complete the survey. Participants were reminded to not put any personal identifiers on the survey (i.e., student number, name, initials, and notations). A cover letter approved by the university's institutional review board was enclosed with the survey, and completion of the survey served as informed consent. Completed surveys were placed in a locked collection box located at the front of the classroom. Participants who requested further information after completing the survey were provided with pamphlets containing facts on HPV, STIs, and partner communication.

Analysis

All statistical analyses were performed using SPSS v.20. Statistical significance was assessed using an alpha level of 0.05 (unless otherwise noted). Summary statistics and frequency distributions were evaluated for completeness and normality assumptions. Missing data was minimal with only 1 or 2 responses missing for years in the US, where subjects reside, knowing someone who has been treated for a sexually transmitted disease, sexual partners, and 3 of the HPC items. For the final models, only 3/116 (2.6 %) of the subjects' responses were missing and not included. The only exception was income – only 71 (61.2 %) subjects responded to this question. However, there were no significant differences between subjects who responded to the income question versus those who didn't between subjects intending to vaccinate versus those not intending to vaccinate ($\chi^2_{(1)}=1.033$, $p=.309$, no missingness bias relative to intent to vaccinate). Comparisons between subjects intending to vaccinate versus those not intending to vaccinate were tested using Student's t-

test, Mann Whitney tests (for the majority of the variables with skewed distributions), and Chi-square tests (for the categorical variables). Multivariate logistic regression was used to develop a model for predicting intent to vaccinate from subject demographics and their individual items responses from the HPV instrument. Since the dataset only had 116 subjects, all 27 HPV items plus potential demographic variables could not all be included in the model due to low power and multicollinearity issues. Thus, variables that were different at a p -value $< .10$ between subjects intending to vaccinate versus those not intending to vaccinate were considered for inclusion in the multivariate logistic regression model. To further optimize and fit the best, most parsimonious final model, forward stepwise variable selection methods were used based on the likelihood ratio statistic ($p=.05$ for entry, $p=.10$ for removal).

Results

The mean age of the Hispanic college male participants was 19.53 years ($SD = 1.60$) (Table 1). Participants self-identified their race/ethnicity as Hispanic; within group ethnic identifications included Caribbean (45.7%), South American (26.7%), American (13.8%), Central American (9.5%), and the rest (4.3%) identified themselves as Mexican ($n=1$), Spanish ($n=2$), Palestinian ($n=1$) and one participant declined to respond to the race/ethnicity item. Participants had lived in the United States an average of 17 years ($SD = 4.51$); the average reported annual income (for the 71/116 subjects who responded) was \$62,472 ($SD = \$47,067$) ranging from \$0 to \$200,000 for household income. The majority were single (84.5%), well-educated with some college or a Bachelor's degree (86.2%), and resided in their parents' homes (78.3%). Finally, 45.6 % of these men reported knowing someone who had been treated for a sexually transmitted infection. Subjects had between 0 and 30 sexual partners with a median number of 2 partners and most had sex with only women (71.9%). Residence, where subjects indicated they lived, either at home with parents, residing in an apartment or on an on campus dormitory; had no significant difference on the decision to be vaccinated against HPV infection. The percentage of subjects living off campus at home with their parents was significantly lower for subjects intending to vaccinate (68.5%) compared to those not intending to vaccinate (86.9%, $\chi^2_{(2)} = 7.847$, $p=.020$).

Responses to questions that posed personal perception of perceived vulnerability, such as "A vaccine against HPV infection could prevent future problems for me" were low, only 24.1% (28/116) responded agree. These same subjects 52.6% (61/116) responded disagree to the survey item, I will be vaccinated with the HPV vaccine. Subjects were also asked to identify barriers or why they would not get vaccinated with the HPV vaccine by filling in a blank or choosing, one of several options including access and expense. Only 24.1% (28/116) of these subjects responded agree or somewhat agree that cost was a barrier to HPV vaccination.

Survey items that measured perceived vulnerability to HPV infection and perceived severity to HPV vaccination, 16 of the 27 HPV items were also significantly ($p<.10$) associated with intent to vaccinate (Table 1). These 16 items focusing on perceived vulnerability to HPV

infection and perceived severity of HPV infection were considered for inclusion in the multivariate logistic regression model for predicting intent to vaccinate.

The final model retained 6 of the 27 HPV survey items ($\chi^2_{(6)}=71.358$, $p<.001$, $n=113$, Nagelkerke $R^2=.63$) and correctly classified 82.3% of the subjects (Table 1): (1) A vaccine against HPV could prevent future problems for me (“prevent”), (2) Most people I know think vaccinating children with the HPV vaccine before they are teenagers is a good idea (“vaccinate children”), (3) If the new HPV vaccine is not required I will not get vaccinated (“required”), (4) I understand that this vaccine is very expensive so I will not get vaccinated (“expensive”), (5) Generally I do what my doctor recommends, so I will get vaccinated (“doctor”), and (6) When I make a decision to get vaccinated my mind is made up (“decision”). Responding positively (agree) to the “doctor” item increased subjects’ odds of intending to vaccinate 5.14 times. Positive response to the “prevent” and “vaccinate children” items also increased the odds more than two-fold. However, positive responses for the “required,” “expensive,” and “decision” items all reduced the odds of intending to vaccinate by more than half.

Discussion

Cancers of the mouth, head, and neck are secondary to infection from HPV subtypes 16 and 18, and the vulnerability of young men to HPV-related cancers should be an important part of the discussion on health promotion and disease prevention in primary care (Printz, 2009). The present study confirms that there is still a need to increase education and awareness of HPV infection and vaccination. Only 30% of the young Hispanic men within this study agreed that men are at risk for acquiring HPV, and only 12% were concerned that they might contract an infection. Healthcare providers and educators must immediately address this misperception and provide young Hispanic men with more information about HPV. This is particularly pertinent to college health populations, like this one, where young Hispanic men have ready access and exposure to health services and health materials. Clearly there are untapped teaching opportunities, as 59% of the young Hispanic men surveyed here indicated they saw a physician, nurse practitioner, or physician assistant at least once a year. While these results are from one university population, they imply that education is needed despite the HPV vaccines approval in 2010 for young men. Nurses have an opportunity to intervene with tailored health promotion messages focused on culture and gender (Thomas & Snell, 2013).

Research has shown that gender roles are a strong predictor of general differences in health-related risky behaviors and preventive behaviors (Doyal, 2001; Glass & Owen, 2010; Maharaj & Talbot, 2000). In developing future interventions for young Hispanic men, gender role frameworks should be considered as gender roles are influenced by cultural experiences with class, nationality, sexual orientation, and religion (M. Sobralske, 2006). Since Machismo norms are so entrenched among Hispanic males that they persist through generations despite acculturation, and this may explain the results from this exploratory study. If young Hispanic men are influenced by Machismo norms then this could explain low HPV vaccine rates and low levels of HPV knowledge and low perceived vulnerability to HPV infection.

Socioeconomic status and machismo may be directly influencing HPV vaccine uptake in our sample. A young Hispanic man's socioeconomic status effects access to care and vaccination. While many of the young men in this initial study were students the cost of the three series HPV vaccine was noted as a barrier for some. The cost of the HPV vaccine varies with insurance coverage and those young men without access to healthcare are at a distinct disadvantage. Also there is variability in HPV vaccine cost from university to university, because of this cost variability it also important to provide young men with accurate information about cost and where to access the HPV vaccine, either during provider visits or through health education resources on college campuses, and media. Policy makers, providers, and health educators can play a significant role in shaping health policy to decrease this disparity for young Hispanic men.

Limitations

There were some limitations to this study. All the young men who chose to participate in the study self-identified as heterosexual and White-Hispanic. It is possible that the findings might have differed if the sample included a more diverse group of Hispanic men, such as Afro-Hispanics, bisexual, or gay men. Despite providing 18 specific countries young men could choose for self identification, the young men who chose to participate chose only South American, Cuban, Puerto Rican or Mexican as their ethnicity. Therefore the sample can only generalize to male Hispanic college students who were predominately Cuban and South American.

Conclusion

Although this is not a definitive study on young Hispanic men's beliefs, knowledge, and attitudes towards HPV vaccination, the findings reveal significant misconceptions or knowledge gaps in young Hispanic men's perceptions and attitudes towards HPV infection and vaccination. This exploratory study provides discussion points and preliminary work for larger qualitative and mixed method studies. Future intervention studies to decrease the escalating rates of HPV infection in college-aged Hispanic men through targeted information in both English and Spanish are crucial as social networks among young men span across subgroups of those attending college and those who do not. Indeed, it is the informal process of educating "man to man" that can be impacted when materials are provided in both English and Spanish. HPV vaccination is the sure way to protect all men against HPV-related cancer, and it is therefore essential despite many young Hispanic men's perception of themselves as invincible to risks. Interventions to increase vaccination must be mindful of the diverse self-identification processes, cultural norms, and needs of Hispanic men across communities of varying racial compositions, economic status, access to care, or geographic ethnicities.

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Table 1Significant Predictors for Young Hispanic Men who choose to be Vaccinated with the HPV Vaccine^a

Variable ^b	B	Standard Error B	Wald (df = 1)	p-value	Odds Ratio Exp (B)	95% Confidence Interval	
						Lower	Upper
Prevent	.79	.27	8.31	.004	2.20	1.29	3.76
Vacc Children	.77	.31	6.05	.01	2.15	1.17	3.96
Required	-.65	.27	5.76	.02	.53	.31	.89
Expensive	-.65	.32	4.03	.045	.52	.28	.99
Doctor	1.64	.45	13.29	< .001	5.14	2.13	12.38
Decision	-1.37	.35	15.46	< .001	.25	.13	.50
(Constant)	-2.15	1.46	2.16	.14	.12		

^a Omnibus Test of Model Coefficients $\chi^2(6, N = 116) = 71.358, p < .001$
 $-2LL = 84.575$; Nagelkerke R -square = .63; Classification Percentage = 82.3%

^b Refers to participant agreement on the following items:

Prevent: A vaccine against HPV could prevent future problems for me.

Vacc Children: Most people I know think vaccinating children with the HPV before they are teenagers is a good idea.

Require: If the new HPV vaccine is not required I will not get vaccinated.

Expensive: I understand that this vaccine is very expensive so I will not get vaccinated.

Doctor: Generally I do what my doctor recommends, so I will get vaccinated.

Decision: When I make a decision to get vaccinated my mind is made up.