



Parental education and text messaging reminders as effective community based tools to increase HPV vaccination rates among Mexican American children

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ABSTRACT

Objective. Latino populations, particularly Mexican-Americans who comprise 65% of the Latinos in the U.S., are disproportionately affected by HPV-related diseases. The HPV vaccination completion rates remain low, well below the Healthy People 2020 goal. In this study we assessed the effect of parental education and a text messaging reminder service on HPV vaccine completion rates among eligible children of Mexican American parents.

Study design. Nonequivalent group study of Mexican parents of HPV vaccine eligible children attended the Health Window program at the Mexican Consulate in New York City, a non-clinical, trusted community setting, during 2012–2013. 69 parents received HPV education onsite, 45 of whom also received a series of text message vaccination reminders. We measured HPV vaccination completion of the youngest eligible children of Mexican parents as the main outcome.

Results. 98% of those in the education plus text messaging group reported getting the first dose of the vaccine for their child and 87% among those in the educational group only ($p = 0.11$). 88% of those receiving the 1st dose in the text messaging group reported completing the three doses versus 40% in the educational group only ($p = 0.004$).

Conclusions. Parental text messaging plus education, implemented in a community based setting, was strongly associated with vaccine completion rates among vaccine-eligible Mexican American children. Although pilot in nature, the study achieved an 88% series completion rate in the children of those who received the text messages, significantly higher than current vaccination levels.

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Introduction

Every year approximately 35,000 cases of Human Papilloma Virus (HPV) associated cancers occur in the U.S., with greater incidence among ethnic and racial minority populations (Jemal et al., 2013; Human papillomavirus-associated cancers-United States, 2002–2008, 2012). Latino populations, particularly Mexican-Americans, who comprise 65% of the Latinos in the U.S. (33.5 million) (Pew Research Hispanic Center, 2013), are disproportionately affected by HPV infection and HPV-related diseases (Human papillomavirus-associated cancers — United States, 2002–2008, 2012; Agency for Healthcare Research and Quality, 2011; Kahn et al., 2007; Kepka et al., 2010). The HPV vaccine has the potential to prevent the large majority of HPV associated cancer cases (Koutsky et al., 2002). The vaccine is currently approved for males

and females 9–26 years of age (U.S. Food and Drug Administration, 2009), with the greatest benefits presumably achieved when administered at an early age, prior to the start of sexual activity.

Despite the significant advantages of preventing HPV infection, uptake of the vaccine has been suboptimal. According to the 2012 National Immunization Survey-Teen (NIS-Teen), the initiation rate for HPV vaccine series (first dose) was 54% for females, with only 33% completing three doses (among all adolescents) (Center for Disease Control P, 2013). The rate for Latina girls was slightly higher for first dose uptake (56%) compared to non-Hispanic Whites (51%), but lower for completion of the three doses (29% vs. 36%) (Jemal et al., 2013). Moreover, HPV vaccination among males is even lower. Among Latino boys 13–17 years of age, only 14.8% received the first dose, while only 2.7% completed the three doses in 2011 (Centers for Disease Control and Prevention, 2012). These rates are well below the Healthy People 2020 objective of an 80% completion rate (U.S. Department of Health and Human Services, 2013).

The most universal HPV vaccine barriers cited by Latino parents are lack of awareness about HPV and the HPV vaccine, and lack of provider

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recommendation for the vaccine (Guerry et al., 2011; Podolsky et al., 2009; Yeganeh et al., 2010). In addition, approximately 80% of Latino children in the U.S. had health insurance in 2010 and almost 87% reported having a regular source of medical care potentially reducing the barrier to access care. Furthermore, the HPV vaccine for children can be obtained through the Vaccines for Children Program at no cost. (Centers for Disease Control and Prevention: Vaccines for Children Program (VFC), 2013) Other parental barriers to obtain the vaccine for their children have been described in the literature, including parental distrust of the vaccine and issues related to promiscuity although less prominent than those described above (Lechuga et al., 2014).

Latino children are the fastest growing child population in the U.S., numbering 23.6 million in 2010 (Pew Research Hispanic Center, 2011; Fry and Passel, 2009). Over 300,000 Mexicans live in New York City and almost half are under the age of 18 years (United States Census Bureau, 2013). In 2007, the Consulate General of Mexico in New York established a “Health Window” program to serve Mexicans attending the Consulate. The “Health Window,” or “Ventanilla de Salud” in Spanish, is a bi-national collaborative program. Academic and government institutions work to increase access to health care, raise awareness around health related issues, provide health screenings, and promote healthy lifestyle choices among low-income and migrant Latino communities in the United States. The unique structure of this model is the physical presence of the program on consular premises, which is designed to provide a diversity of services and resources in a culturally and linguistically sensitive manner, in a trusted environment, with trusted health personnel.

The Community Preventive Services Task Force (CSPTF) recommends “increasing community demand,” defined as “efforts to provide or disseminate information, advice, or both to clients to increase and improve their efforts to seek appropriate vaccination” (Community Preventive Services Task Force) to increase vaccination rates. The HPV vaccine presents a particularly difficult additional barrier because three doses are required to accomplish full immunization compared to one dose for most other vaccines for older children and adults (i.e. flu vaccine). These additional 2 steps (second and third doses) have undermined vaccination completion, reducing vaccination rates.

Kharbanda et al. investigated the use of text messaging as a reminder to complete the three doses of the HPV vaccine and found an increase of 15% of on-time receipt of the next HPV vaccine dose among parents receiving a text message reminder for their child's vaccination, though all participants included in that study had already initiated the vaccine series (Kharbanda et al., 2011). Text messaging is widely used among the general population in the U.S., including Latinos. According to the Pew Research Center, over 85% of Americans own a cell phone and almost 75% send and/or receive text messages; these rates are similar for Hispanics and non-Hispanics (Pew Research Center, 2012).

In this pilot study, we assessed an intervention set in a non-clinical, trusted community setting serving large Mexican American populations, designed to increase HPV vaccine completion rates. The intervention contained a culturally-tailored HPV education intervention for Mexican parents of vaccine eligible children, followed, for a subset of parents by text-messaging vaccination reminders. Vaccine series completion rates were compared for the children of the two groups.

Methods

We conducted an exploratory study using a nonequivalent group design of Mexican parents of HPV vaccine eligible children, attending the Health Window Program at the Mexican Consulate in New York City, to assess the effect of parental HPV vaccine education with and without text messaging reminders on vaccination completion (3 doses) rates. This study was conducted under approval from the institutional review board at Memorial Sloan-Kettering Cancer Center.

Setting

The Health Window program at the Mexican Consulate in New York City is open weekdays and offers services described above to all those attending the Consulate. The Health Window does not administer the HPV vaccine or offers direct health care. The General Consulate of Mexico in New York serves an average of 400 visitors every day and an average of 90,000 people a year from the New York Metropolitan area.

Study population

Between December 2012 and May 2013 all those who attended the Health Window at the Consulate General of Mexico in New York City were approached consecutively to assess their eligibility to the study using a standardized intake form and to obtain consent to participate. This population was a self-selected group that decided to attend the Health Windows at the consulate for other than HPV vaccine information purposes. The following were used as inclusion criteria: An 18 years or older parent that: 1) was born in Mexico, or born in the U.S. but self-describes as Mexican American, 2) Spanish is his or her primary language, 3) has at minimum one child between the ages of 9 through 17 years who has not received the HPV vaccine, 4) self-identifies as the child's main caregiver, 5) currently owns a cell phone and uses text messaging services. Parents that had multiple HPV vaccine eligible children but one or more had already received the vaccine (any number of doses) were excluded from the study. It is important to note that to the best of our knowledge, there were no changes to the HPV guidelines, policies or payment during the course of the study in the New York City metropolitan area.

Intervention

Parental education. Trained lay health workers at the Health Window provided a one on one educational session to all study participants. The session included information on HPV, the HPV vaccine, and HPV-related cancers, and answered any questions the parent might have. A publicly available brochure obtained at the Centers for Disease Control and Prevention website about HPV vaccine was given to the parents (available at: <http://www.cdc.gov/std/hpv/common/>), and assistance linking their child with health care services was offered if needed. Parents were encouraged at the end of the session, to make an appointment with their child's provider or go to an immunization clinic to receive the vaccine. On average the educational session lasted 20 min.

Text messaging. After 24 consecutive participants were recruited to the non text messaging arm of the study, the following 45 participants were assigned to receive messages once a week reminding them of their child's vaccination eligibility, starting approximately one week after participating in the educational session. These reminders occurred until uptake of the first dose of the vaccine was reported, or for 6 weeks after recruitment. The message sent included the following: “As a reminder, your child is eligible for the HPV vaccine, don't wait, protect your child!”. If a participant reported administering the first vaccine dose to his/her child (assessed by telephone), text messages resumed weekly starting one month prior to the second dose due date or until the second dose was reported or for a maximum of 8 weeks. The message sent during this stage was “As a reminder, your child is eligible for the second dose of the HPV vaccine.” and “Don't forget, your child is not fully protected until he or she gets the three doses.”. Finally, a third batch of weekly text message reminders started 1 month prior to the due date of the third dose, depending on the time of second dose and only if a second dose was reported, and continued for 8 weeks or until the third dose was reported. The message sent at this stage was “As a reminder, your child is eligible for the third and final dose of the HPV

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