Evaluation of Pediatric Human Papillomavirus Vaccination Provider Counseling Written Materials: A Health Literacy Perspective

Rosy Chhabra, PsyD; Deena J. Chisolm, PhD; Barbara Bayldon, MD; Maheen Quadri, MD, MS; Iman Sharif, MD, MPH, MS; Jessica J. Velazquez, BA; Karen Encalada, BA; Angelic Rivera, MPH, MBA, MCHES; Millie Harris, PhD; Elana Levites-Agababa, MD; H. Shonna Yin, MD, MS

From the Department of Pediatrics, Albert Einstein College of Medicine/Montefiore (Dr Chhabra and Ms Rivera), Bronx, NY; The Ohio State University Department of Pediatrics, Nationwide Children's Hospital (Drs Chisolm and Harris), Columbus, Ohio; Northwestern University Feinberg School of Medicine, Department of Pediatrics, and Ann & Robert H. Lurie Children's Hospital of Chicago (Drs Bayldon and Quadri), Chicago, Ill; Department of Pediatrics, Sunset Park Family Health Center, NYU Langone (Dr Sharif), Brooklyn, NY; Department of Pediatrics, NYU School of Medicine–Bellevue Hospital (Ms Velazquez, Ms Encalada, and Dr Yin), New York, NY; Department of Pediatrics, CAMcare Health Corporation (Dr Levites-Agababa), Camden, NJ; and Department of Population Health, NYU School of Medicine (Dr Yin), New York, NY
The authors have no conflicts of interest to disclose.
Address correspondence to Rosy Chhabra, PsyD, Department of Pediatrics, Albert Einstein College of Medicine, 1225 Morris Park Ave 6B28, Bronx, NY 10461 (e-mail: rosy.chhabra@einstein.yu.edu).

Abstract

Background and Objectives: Despite recommendations supporting human papillomavirus (HPV) vaccination, pediatric vaccination rates remain suboptimal in the United States; lack of tools to support provider counseling is one barrier. We sought to evaluate HPV-related counseling materials for readability, suitability, and content, and assess parent perceptions of materials, using a health literacy perspective.

Methods: A systematic search was conducted for written materials developed for HPV vaccination counseling by examining state Department of Health Web sites and associated links to local and national organizations. Materials were assessed for the following: 1) readability (Flesch Reading Ease, Flesch-Kincaid, Gunning Fog, Simple Measure of Gobbledygook, Fry), 2) suitability (understandability and actionability) (Suitability Assessment of Materials; Patient Education Materials Assessment Tool for Printable Materials), and 3) coverage of 8 key content areas (recommended by Centers for Disease Control and Prevention). Semistructured interviews were conducted with English-speaking parents or caregivers of children 9 to 17 years of age from 3 pediatric clinics (New York, Ohio, Illinois) serving predominantly low-income families to assess perceptions and usefulness of 4 handouts selected for review.

Results: Thirty-eight documents were assessed. Mean ± standard deviation (SD) reading grade level was 9.4 ± 2; 10.5% (n = 4) had a reading level of 6th grade or below; 68.4% (n = 26) were considered not suitable. Mean understandability was 41.7% and mean actionability was 20.7%. Only 5.3% (n = 2) addressed all 8 content areas mean ± SD (number of areas = 6.7 ± 1.2). Brochure comprehensiveness and inclusion of a personal story were cited as factors that would be helpful in influencing parents to vaccinate against HPV.

Conclusions: Few written materials for HPV vaccination counseling were optimal from a health literacy best practices perspective. Content comprehensiveness was important for informed decision making.

Keywords: health communication; health literacy; human papillomavirus; vaccination

Academic Pediatrics 2018;18:S28–S36

What's New

Few written materials for HPV vaccination counseling in the United States are optimal from a health literacy best practices perspective, and few contain all recommended key content for informed decision making, representing a barrier for effective provider–patient/parent communication on this topic.

An estimated 14 million people are newly infected with human papillomavirus (HPV) every year in the United States. Approximately 360,000 develop genital warts and 27,000 new HPV-associated cancers.[1,2] Recognizing the important role that HPV vaccination can play in preventing HPV-related morbidity, the American Academy of Pediatrics (AAP) and the Advisory Committee on Immunization Practices strongly recommend HPV vaccination during preadolescence.[3] Even though these vaccines are considered safe and effective, implementation of HPV vaccine recommendations remains suboptimal. US data show that about 60% of adolescent girls and 50% of adolescent boys received 1 or more doses of the HPV vaccine[4]; only about one third of girls received all 3 recommended doses,[5] and the percentage of boys receiving the full series was even lower.[5] These rates are significantly lower than the Healthy People 2020 goal of having 80% of 13- to 15-year-old girls fully vaccinated against HPV.[6]

Approximately 1 in 3 US parents has limited health literacy, which can contribute to difficulty understanding and acting on HPV vaccination information.[7] Low health literacy has been linked to poor access to care, decreased use of preventive services, worse disease management, and poorer health outcomes.[8] Low health literacy affects provider–patient/parent communication[9,10] and impairs shared decision making.[10,11] Research also shows that available health education materials are often written at a grade level that is too high for the general population.[12]

Most parents report not having enough information about HPV vaccination and difficulty understanding the importance of the vaccine.[11,13,14] A health literacy–informed approach to improving communication about the benefits and risks of the HPV vaccine is needed, especially for minority families with low socioeconomic backgrounds, who have disproportionately higher rates of HPV-related morbidity.[15] A body of literature exists regarding common parent/patient concerns about HPV vaccines[16]; print materials can support a standardized approach to vaccination counseling and help ensure that barriers are addressed.

To date, no studies have systematically assessed the readability, suitability, and comprehensiveness of available provider counseling materials for HPV vaccination. To fill this gap, the Academic Pediatric Association (APA) Health Literacy Special Interest Group used a health literacy perspective[17–20] to design and conduct an environmental scan to identify written materials that incorporate health literacy best practice strategies and could be recommended for use as part of provider–parent communication. Additionally, parent feedback was solicited for selected materials to assess the degree to which materials supported parent decision making.

METHODS

We conducted a 2-phase study to examine written materials used to support provider counseling regarding HPV vaccination. Phase 1 involved an environmental scan to identify materials used for HPV counseling in the United States, and to evaluate materials for reading grade level, suitability (eg, understandability, actionability), and content. Phase 2 involved one-on-one semistructured interviews with parents or caregivers to assess the acceptability or adequacy of selected HPV written materials identified in the scan. Parents were enrolled from 3 primary care clinics (Montefiore Children's Hospital, Bronx, NY; Nationwide Children's Hospital, Columbus, Ohio; and Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, Ill), which serve predominantly low-income, minority families. Inclusion criteria included having a child between the ages of 9 and 17 and having the ability to speak and read English. Institutional review board approval was obtained from each site.

IDENTIFICATION OF THE SAMPLE OF HPV WRITTEN MATERIALS

A systematic online search was conducted of Department of Health websites across each of the 50 states to identify local and national HPV vaccine counseling tools. Search terms used within the websites' internal search features included: [human papillomavirus, HPV] and [vaccine, vaccination, immunization]. These websites were further searched using hyperlinks that included the above terms in addition to the following: [adolescent health, school health] and [sexually transmitted diseases, STD]. Associated links were searched for supplemental, endorsed material, including materials from local and national organizations such as the US Centers for Disease Control and Prevention (CDC), the AAP, and the Immunization Action Coalition (IAC). This environmental scan was conducted between April and August 2015.

Counseling tools included in the final sample were based on the following inclusion criteria: 1) written material endorsed by a state Department of Health or associated links, 2) written in English, 3) focused on HPV vaccine counseling for parents, 4) targeted vaccination of preadolescents and adolescents, and 5) published in 2010 or later.

ASSESSMENT OF HPV WRITTEN MATERIALS

Each identified written material underwent an in-depth assessment, including ascertainment of readability (reading grade level), suitability (understandability, actionability), and content analysis to determine if key content areas were addressed.

READABILITY

Five readability formulas were used: Flesch Reading Ease (FRE), Flesch-Kincaid (F-K), Gunning Fog (FOG), Simple Measure of Gobbledygook (SMOG), and Fry.[21–26] A composite reading grade level score was calculated for each document, using the average reading level across the 5 formulas; this was done to account for strengths and weaknesses of each formula as well as to enhance the reliability of our estimate. Because it is recommended that patient education materials be written at a 6th grade level or lower,[27–30] each document was also categorized on the basis of this criterion.

Readability Plus software (Micro Power & Light Co, Dallas, Tex) was used to generate grade levels using each of the 5 readability formulas. Before using the software, each document was converted to a text file and prepared systematically; section headers, labels, and table headings that did not form sentences were removed, as is standard practice for readability assessments.[18,31] The text that remained included only text that the parent was expected to read and comprehend to act on key information; organization, slogan, funding, and references were therefore removed.

SUITABILITY

Suitability was assessed using 2 approaches: the Suitability Assessment of Materials (SAM)[27] and the Agency for Healthcare Research and Quality Patient Education Materials Assessment Tool for Printable Materials (PEMAT-P).[32]

The SAM is a common tool that analyzes documents in the following 6 domains: content, literacy demand, graphics, layout and typography, cultural appropriateness, and learning simulation.[18,33] For this study, 5 SAM domains were assessed; one domain, cultural appropriateness, was not assessed