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**“This Shot Can Save Your Life!” (Or Can It?):
Framing of the HPV Vaccine in Teen, Parenting, and Women’s Magazines**

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Abstract

About 20 million people currently are infected with genital human papillomavirus (HPV), making it the most common sexually transmitted infection in the United States. In 2006, the FDA approved a vaccine that protects against four strains of the virus, and it is recommended for use among girls and women between the ages of 9 and 26. This ethnographic content analysis investigated how selected teen, parenting, and women’s magazines framed information concerning the HPV vaccine between 2006 and 2010. Four main frames were identified: (1) the HPV vaccine is a medical (cancer-fighting) miracle; (2) not getting the vaccine has deadly consequences; (3) the vaccine is mainstream; and (4) the vaccine has a guarded but hopeful future.

Keywords: ethnographic content analysis, fear appeals, frames, HPV, magazines

Introduction

About 20 million people currently are infected with genital human papillomavirus (HPV), making it the most common sexually transmitted infection (STI) in the United States.¹ An additional 6.2 million people become newly infected each year.² The virus has more than 30 strains that can be transmitted through sexual contact, and about half of sexually active men and women become infected with HPV at some point in their lives.³ Several of these strains are designated as high risk (types 16, 18, and many others) because they have been found to cause cervical cancer.⁴ Other strains, such as types 6 and 11, are associated with genital warts.

Estimates suggest that about 1.4 million women worldwide have cervical cancer, and about 7 million more have unidentified and untreated precancerous lesions.⁵ Cervical cancer is the leading cause of cancer deaths among women in developing countries; both in the U.S. and the rest of the world, cervical cancer disproportionately affects poor women who have little access to regular health screenings and the Papanicolaou (Pap) test, which can detect precancerous cells in the cervix.⁶

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In 2006, the Federal Drug Administration (FDA) approved a highly effective vaccine (Gardasil) that would protect against four strains of the virus (types 6, 11, 16, and 18). The vaccine is recommended for girls and women between the ages 9 and 26 but primarily for 11- and 12-year-old girls.⁷ The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices recommended targeting adolescent girls because clinical research has shown that this is the optimum time for vaccination, as it is prior to sexual debut and there is a stronger immune response among adolescents.⁸ This vaccine, manufactured in the United States by Merck & Co., is administered in a series of three shots over a course of six months, and costs approximately \$390 for the full series plus doctor's fees.⁹ As of June 2012, approximately 46 million doses of the HPV vaccine, most of which Gardasil, have been distributed in the United States, according to the CDC.¹⁰

The vaccine was met with a great deal of both positive and negative public attention. Within two years of Gardasil's approval, many states were contemplating making the vaccine mandatory for school-aged girls. To date, 24 states and the District of Columbia have introduced proposals to require HPV vaccination for school entry, and two have been successful in passing this legislation. Virginia and the District of Columbia have made the vaccine mandatory for all girls entering 6th grade, although there are parental opt-out policies. The mandate issue became particularly controversial in 2007, when Texas Governor Rick Perry issued an executive order to require the vaccine, an action that was later overturned by the legislature. In addition, 41 states have considered legislation aimed at funding or providing education about the HPV vaccine. Nineteen states have passed this legislation.¹¹

This study investigated how selected teen, parenting, and women's magazines framed information concerning the HPV vaccine between 2006 and 2010. The goal was to explore how the vaccine was presented and how, if at all, the frames shifted over time. The introduction of the vaccine was followed by an outpouring of media content about HPV and the vaccine. Because the success of vaccination programs can depend on how and what information is distributed to the public, it is of interest to see how media chose to frame reports of the virus and the vaccine.

The literature reviewed in this paper includes a number of studies on the coverage of the HPV vaccine in newspapers, online news, and news magazines. However, no previous studies, to this author's knowledge, have focused on the coverage of the HPV vaccine in teen, women's, and parenting magazines. It has been found that magazines are places to which girls, women, and parents look for information regarding their health decisions, especially about sexual health.¹² Because magazines are a common source for information considered sensitive or embarrassing,¹³ which girls or women might not want to discuss with parents, friends, family, or health care providers,¹⁴ it becomes even more important to study how this information is being framed. In that sense, this research aims to fill an important gap in the literature. The following section focuses on framing as the theoretical foundation for this study.

Theoretical Framework

Media researchers contend that frames provide a way in which news can be interpreted and understood. In simple terms, news framing refers to selecting and emphasizing certain aspects of issues.¹⁵ Gamson and Modigliani define a media frame as “a central organizing idea or story line that provides meaning to an unfolding strip of events. . . . The frame suggests what the controversy is about, the essence of the issue.”¹⁶ Media frames organize the world for both reporters and audiences.¹⁷ For instance, journalists often frame the topic of breast cancer in terms of coping with its effects, personal experiences, and risk factors.¹⁸

Reese notes that frames are organizing principles that are socially shared and persistent over time, and they combine symbolically to create a meaning within the social world.¹⁹ Wallington, Blake, Taylor-Clark, and Viswanath argue that Reese’s definition is particularly useful for examining the priorities and angles (antecedents to framing) on which health reporters and editors rely. These researchers note that “these antecedents to news framing may include priority setting by reporters and editors, and the angles or lenses through which journalists choose to tell a story.”²⁰ As such, the health news may be written using “a priori ideas about the goals of their reporting (priorities) and how stories should be told in order to garner the most impact (angles).”

Devices such as keywords, metaphors, catchphrases, discussion of the root of a problem or issue, concepts, discussion of the consequences of a problem or issue, and moral appeals all combine to build frames.²¹ Often, these devices are brought into an article through the use of sources: who is interviewed, who is quoted directly, how often an individual is quoted, and how different sides are represented. Entman suggests that frames are used to define problems, diagnose their causes, make moral evaluations of the agent causing the problems, and suggest remedies.²² Entman also notes that “by providing, repeating, and thereby reinforcing words and visual images that reference some ideas but not others, frames work to make some ideas more salient in the text, others less so—and others entirely invisible.”²³ As several researchers have pointed out, what is left out of a frame is often as important as what is included.²⁴

Journalists not only use routine criteria for the selecting stories, including impact, conflict, timeliness, and proximity,²⁵ but they also make choices about how to cover stories and which sources to approach for information and quotes. The literature suggests the media rely mostly on elite sources, such as officials, politicians, and experts.²⁶ However, as argued by Fowler, Gollust, Dempsey, Lantz, and Ubel, source selection evolves with the stages of a framing cycle.²⁷ In the early stages of an issue’s coverage, journalists have fewer possible sources to choose from and rely on those who are available. In latter stages, as an issue becomes more prominent, journalists are likely to have more choices.

The omissions of potential problem definitions, explanations, evaluations, and recommendations may be as critical as the inclusions in guiding the audience.²⁸ The omission of certain arguments or points of view makes them less salient for readers, and the omission of certain types of sources leaves out their voices. All of these omissions are relevant to this study, as they have been to previous research on this topic, outlined in the following section.

Literature Review

Controversy

As with many medical discoveries, the HPV vaccine has drawn the attention and elicited disagreements among parents, public health agencies, advocacy groups, politicians, and journalists. For example, in their examination of 101 news articles across the United States, Fowler, Gollust, Dempsey, Lantz, and Ubel saw the framing of the HPV vaccine change over time as the legislative discussion over school mandates proliferated.²⁹ Over the course of a two-year study, from January 2006 through December 2007, the researchers found a shift in the political framing of the HPV vaccine from theoretical discussions to opposition to government mandates. The debate has focused on two primary questions. First, is this vaccination of young girls intended to shield them against a sexually transmitted infection, or is it a cancer vaccine? Second, should the HPV vaccine be mandatory for all girls of school age?

One argument against vaccination, both as a potential school mandate or on an individual basis, suggests that adolescents do not have a firm understanding of long-term consequences. Therefore, they might view this vaccine as “long-term” protection, thus allowing them to forego other forms of sexual protection or regular Pap tests. Others argue that the vaccine was never tested on adolescents, and therefore its effectiveness in that age group is uncertain.³⁰ Supporters of the vaccine argue that it has been tested and found 100 percent effective against four strains of HPV in clinical trials; furthermore, the argument goes, on a global level, the use of this vaccine could make an enormous difference in decreasing the number of deaths from cervical cancer.³¹

Andsager and Powers noted that women’s health issues should be studied in the context of social, economic, and political influences, which can be understood through framing analyses.³² A number of such analyses have examined the media coverage of the HPV vaccine in various contexts. Habel, Hiddon, and Stryker conducted a content analysis of the HPV vaccine in online news stories that appeared over a four-month period in 2006.³³ The vaccine was most often presented as a “cancer vaccine” and a “historic breakthrough.”³⁴ The articles coded as part of this study showed an incomplete picture of the vaccine and of HPV, which would leave readers either confused or with gaps in knowledge. Kelly, Leader, Mittermaier, Hornik, and Cappella found in a study of 321 news stories from major newspapers, wire content, and television networks that 23 percent of stories did not mention

the sexually transmitted nature of HPV and 80 percent left out information about the need for continued cervical cancer screening after vaccination.³⁵ Quintero Johnson, Sioneau, and Scott explored the coverage of the vaccine in major newspapers for the 19 months following its release.³⁶ This study found most articles lacked comprehensive information about both HPV and the vaccine; it also showed that cancer prevention was the most frequently used frame.

Cancer Prevention vs. STI Prevention

In two qualitative studies conducted on attitudes toward the HPV vaccine, adult women and female college students reported having more favorable attitudes toward the vaccine when it had been framed as a cancer-prevention vaccine rather than an STI-prevention vaccine.³⁷ Leader, Weiner, Kelly, Hornik, and Cappella have also found that the cancer prevention frame was more effective than an STI frame at influencing women's intentions to vaccinate themselves.³⁸ The authors concluded that there is still a social stigma attached to sexually transmitted infections, and women believed the HPV vaccination to be personally unnecessary as an STI prevention measure.

A CDC report recommending that public health practitioners avoid framing the HPV vaccine as an STI prevention measure mirrored these findings.³⁹ In its One Less campaign, Merck itself chose to use a risk message frame that emphasized losses from inaction (HPV and cervical cancer) while simultaneously outlining empowerment (gains) that would result from taking preventative action against a deadly infection.⁴⁰

The cancer-prevention frame, which has trickled from health communication campaigns into media content, appears to aim for some fear-inducing effects. Several studies show the vaccine has been framed through frightening messages in North American newspapers and magazines.⁴¹ Because accurate cervical cancer risk information has been missing from news reports, many women overestimate the risk of developing cervical cancer due to an HPV infection.⁴² Heightened fear results from frequent reporting about the consequences and inescapability of an HPV infection, with the coverage lacking accurate explanations of the connection of HPV to cervical cancer or the impact of the HPV vaccine. For example, in one newspaper study, which analyzed two years of articles from 2006 to 2007, several fear-inducing frames emerged, including: (1) cervical cancer is invisible, slow-growing, and fatal; (2) vaccine effectiveness is unknown and scientists have no idea how long the effects will last; (3) the vaccine could cause increased sexual promiscuity in young women; and (4) the pharmaceutical industry is lobbying for government adoption and school mandates.⁴³ A magazine study, which analyzed four North American news magazines over the same time period, found similar frames, the most common one being that cervical cancer was deadly and undetectable and the HPV vaccine was poorly understood by scientists.⁴⁴

Promiscuity Concerns

The same magazine study mentioned above also found that some stories suggested that young women who receive the vaccine might view it not only as a “free ticket” to risky promiscuous behaviors, but also as a reason to ignore regular health screenings, such as Pap tests.⁴⁵ In a review of British newspapers, Forster, Wardle, Stephenson, and Waller also discussed the relationship between risky sexual behaviors and the HPV vaccine.⁴⁶ They found broadly positive information about the HPV vaccine in articles appearing between 2003 and 2008, alongside a concern that young adults might engage in risky sexual behaviors after inoculation.

Sources

Calloway, Jorgensen, Saraiya, and Tsui found that news stories not only lacked detailed information about HPV, but that the manufacturers of the vaccine were overused as sources.⁴⁷ Given the controversial nature of the vaccine, this overreliance troubled the researchers.⁴⁸ Furthermore, John, Pitts, and Tufts found that parents were almost completely excluded as sources from news stories about the state-mandated HPV vaccine in Virginia. The authors note that omitting family viewpoints is concerning because vaccines’ media framing plays a strong, “if not singularly definitive” role in parental decisions about having children vaccinated.⁴⁹ The researchers note that attempts to show “two sides to a story” can oversimplify a complicated discourse, especially about a health issue, or may introduce a “false balance” by juxtaposing a questionable claim against a credible assertion.

Based on the review of literature and the theoretical framework relevant to the goals of this study, the following three research questions are proposed:

RQ1: How did teen, women’s, and parenting magazines frame the HPV vaccine?

RQ2: How did the way teen, women’s, and parenting magazines framed the HPV vaccine change over the time period studied?

RQ3: What sources were used in articles about the HPV vaccine in teen, women’s, and parenting magazines?

Methodology

Sample

Articles from 12 teen, women’s, and parenting magazines (Table 1) served as the population. *CosmoGIRL!*, *Teen Vogue*, *Seventeen*, *Good Housekeeping*, *Cosmopolitan*, *Glamour*, *O, The Oprah Magazine*, *Essence*, *Redbook*, *Self*, *Parents*, and *Parenting* were chosen in part because of their reach, as identified by Standard Rate and Data Service (SRDS) circulation figures. The magazines had the highest circulations in their respective categories and also ran

health-related content.⁵⁰ The articles were found in a variety of electronic databases, including Lexis-Nexis, Wilson Select Plus, and ProQuest Central.⁵¹ Several databases were used because the magazines chosen for this study were not all indexed in the same place.

<i>Table 1</i> <i>Magazines by Circulation (2011)*</i>	
Magazine	Circulation
<i>Good Housekeeping</i>	4,427,964
<i>Cosmopolitan</i>	2,932,292
<i>O, The Oprah Magazine</i>	2,379,818
<i>Glamour</i>	2,322,713
<i>Redbook</i>	2,218,508
<i>Seventeen</i>	2,029,791
<i>Parenting</i>	2,076,347
<i>Parents</i>	2,074,087
<i>Self</i>	1,488,849
<i>CosmoGIRL!</i>	1,418,568
<i>Essence</i>	1,066,482
<i>Teen Vogue</i>	1,021,071

* Source: SRDS⁵²

Every story published between June 2006 and June 2010, containing the keywords “HPV” or “cervical cancer” and “vaccine” or “shot” or “Gardasil,” was included in the final census. This time period was chosen to include articles published after the FDA approved Gardasil (June 2006), focusing on HPV vaccine recommendations by federal advisory boards and the state mandate controversies in 2007 and 2008, the approval of GlaxoSmithKline’s Cervarix (a competing HPV vaccine) in 2009, and the FDA approval of Gardasil for boys and men in late 2009. Given the long lead time of the monthly magazines in this study, mid-June 2010 was chosen as an end date.

Table 2
Number of Articles with HPV Content

Magazine	2006	2007	2008	2009	2010	Total
<i>Seventeen</i>	1	0	0	1	1	3
<i>CosmoGirl!</i>	1	3	0	0	0	4
<i>Teen Vogue</i>	1	1	1	1	0	4
<i>Good Housekeeping</i>	0	1	0	0	0	1
<i>Cosmopolitan</i>	1	1	5	1	2	10
<i>O, The Oprah Magazine</i>	0	0	0	0	0	0
<i>Essence</i>	2	0	1	1	0	4
<i>Glamour</i>	2	0	2	1	1	6
<i>Redbook</i>	1	3	2	0	0	6
<i>Self</i>	0	1	6	2	1	10
<i>Parenting</i>	1	0	0	1	1	3
<i>Parents</i>	0	0	1	0	0	1
Total	10	10	18	8	6	52

Analysis

Fifty-two articles were selected and briefly reviewed to determine whether they included the key terms. All articles appeared in either a front-of-the-book column or as a feature story, and had a minimum word count of 100. Each selected article was either about the HPV vaccine or the HPV vaccine and a related topic, such as cervical cancer and/or HPV.

Each article was examined in its entirety by using a qualitative, holistic approach based on ethnographic content analysis (ECA), a methodology designed to “document and understand the communication of meaning, as well as to verify theoretical relationships.”⁵³ The main goal of ECA is to be systematic, but not rigid, allowing the researcher to interact with the data, and “to place documents in context, just as members do.”⁵⁴ The ECA differs from a traditional content analysis in that categories are not predefined, but the ECA does draw on and collect both numerical and narrative data. While the researcher can collect data on certain elements pertaining to his or her research project, the ECA allows for narrative description to interpret results in a more dynamic way. Altheide notes that “ECA is embedded in constant discovery and constant comparison of relevant situations, settings, styles, images,

meanings and nuances.”⁵⁵ Because numerical data can be supported with narrative description, theoretical relationships can be verified, and new concepts that emerge during the research process can be discovered. Altheide notes that in this way, data analysis is both statistical and textual.⁵⁶

The ECA has similarities to grounded theory, and to Glaser and Strauss’s constant comparative method⁵⁷; however, there are some differences. Altheide writes:

Grounded theory is trying to generate testable hypotheses as a foundation for “theory,” and this may require excluding certain materials. ECA is not oriented to theory development but is more comfortable with clear descriptions and definitions compatible with the materials. Central to both, however, is the importance of constant comparison, contrasts, and theoretical sampling.⁵⁸

ECA dictates that a researcher should (1) select the documents for analysis; (2) develop a protocol and collect the data; (3) code and organize the data; (4) analyze the data; and (5) write the report.⁵⁹

Using an example set forth by Altheide, the protocol that was constructed to collect the data was designed to provide numeric and narrative (descriptive) data on the following topics: magazine title, story type (feature, news, letter to editor, etc.), date published, and the status of the primary sources. The protocol was not created to “hem in” the data; on the contrary, it was kept deliberately open, to allow for themes and categories to emerge. The articles were read without predefined or rigid categories for defining what might be relevant.⁶⁰ The general procedure, in concert with that suggested by Altheide, was to read several articles, note observations on the protocol sheet, then note the general themes and categories that were seen as potentially emerging, including information that was omitted. The author would then review and compare the results, make any refinements, and move on to the next group of articles and repeat the process until the entire sample was coded. As Altheide notes, “the progression from data collection to interpretation was intended to be reflexive, rather than serial.”⁶¹

In keeping with the rigor required of qualitative methodology, great care and time was taken to thoroughly examine each text. The examples shown in the findings are culled from all the articles and have been selected as being typical of the data.

Results

After the articles were analyzed, four main frames emerged: 1) the HPV vaccine is a medical miracle; 2) not getting the vaccine has deadly consequences; 3) the vaccine is mainstream; and 4) the vaccine has a guarded but hopeful future. Many of the articles were

extremely short, barely meeting the 100-word minimum, and they were often blurbs in a health roundup feature found in the front-of-the-book.

This analysis will discuss each frame in general. This will be followed by an outline of changes in the frames over time and discussion of how sources were used.

Vaccine as medical (cancer-fighting) miracle

This was by far the most common frame, especially in the women's magazines. Doctor sources depicted the HPV vaccine as "the biggest cancer breakthrough in decades"⁶² or "in women's health since the Pap test,"⁶³ noting that "there has never been a vaccine specifically for cancer."⁶⁴ *Essence* called the vaccine a "breakthrough" that would "help women live longer," dubbing it "The Anticancer Vaccine."⁶⁵ Virtually every article that discussed the vaccine reported statistics about the strains of the virus the shot prevents, the age group for which it has been approved, and other facts easily expressed via numbers. While these facts were often (though not always) accurate, the stories tended to be confusing, often following headlines overstating the vaccine's effectiveness, such as "The Ultimate STD Prevention."⁶⁶ Teen magazines also utilized this frame. *CosmoGIRL!* proclaimed that "we want you and your future daughters to live without the threat of cervical cancer."⁶⁷

In one lengthy feature article that appeared in *Glamour* magazine, the topic of the HPV vaccine was discussed in context with other women's sexual health issues and the political debates that have arisen over some of them. The author wrote: "The world's first anticancer vaccine represents an incredible scientific breakthrough."⁶⁸ Conservative group opposition to the vaccine was noted, but the author took great care to make clear that to doctors—his expert sources—this opposition was not only misguided but also incomprehensible:

The movement against the vaccine has left John Santelli, MD, chairman of Columbia University's Department of Family Health, mystified. "We have a vaccine that could prevent cancer," he says. "People should be lining up and saying this is a great medical achievement, and yet people are actually opposing it. That's *nuts*." [emphasis added in original article]

Deadly Consequences

A headline from *Cosmopolitan* shouted, "This Shot Can Save Your Life!"⁶⁹ More than just framing the HPV vaccine as one that prevents cancer, the overall theme of many of the articles was that cervical cancer is deadly, and that without getting this vaccine, many girls and women—those reading the particular magazine in question—could (or would) die.

For instance, the use of the "brave"⁷⁰ first-person story was prevalent, with a female source recounting how contracting HPV had caused her home life to "become hell"⁷¹ and her

“self-esteem to plunge”⁷² upon her realization that this sexually transmitted infection had a “killer consequence.”⁷³ *Cosmopolitan* declared HPV the “most dangerous STD threat to women,” but made the point that there was “good news: a new vaccine [that] can keep you safe.”⁷⁴ Articles repeatedly mentioned that HPV and the resulting cervical cancer (the two were inextricably linked in most articles) are often examples of an “invisible disease.” The disease is invisible because HPV has few, if any, symptoms. But the articles countered that though these statistics and statements may be “shocking,” “alarming,” and “scary”⁷⁵—and true—there is no reason to “wig out,”⁷⁶ thanks to the new vaccine. Said one woman in a letter-to-the-editor after an HPV-related scare that caused precancerous cells to be removed from her cervix: “I got the Gardasil vaccine, which prevents four dangerous types of HPV, two of which are linked to cervical cancer. But at least I’m finally healthy.”⁷⁷

In a front-of-book article titled “The Facts about the HPV Vaccine,” *Self* magazine offered “myths” about the vaccine, followed by quotes from medical professionals countering the statements. For instance, one “myth” was that “cervical cancer is easy to detect and treat.” The counterargument began by saying that while “most precancerous HPV infections can be detected through regular Pap smears,” screening cannot catch them all. This was followed by a quote from a doctor who stated: “The only treatments for invasive cervical cancer are radical hysterectomy or radiation therapy, which scars the vagina and can render you sterile.”⁷⁸ While these counterstatements are factually accurate, they are also overly simplistic and could be seen as designed to frighten the reader. Invasive cervical cancer is extremely rare in women under 20, with the average age of diagnosis being 48 (beyond the typical childbearing years).⁷⁹ Furthermore, 60 to 80 percent of the cases of newly diagnosed invasive cervical cancer have been found in women who have not had a Pap smear in more than five years or have never had a Pap smear, according to the American Cancer Society.⁸⁰ At worst, the information in these magazine articles about invasive cervical cancer could lead the readers to conclude that not getting the HPV vaccine would directly lead to harm based on an overestimated health threat.

Mainstreaming the Vaccine

The HPV vaccine was regularly presented as a matter-of-fact, mainstream part of a girl’s health routine. In one article about vaccines, *Self* magazine noted that “pricks aren’t just for kids”, citing the HPV vaccine side by side with the flu and hepatitis vaccines.⁸¹ *Parenting* listed the HPV vaccine along with the flu vaccine and the chicken pox vaccine in a short, front-of-book column titled “New Shots for Your Child.”⁸² In another column, the HPV vaccine was mentioned as part of a list of free health-care offerings that a Virginia-area Planned Parenthood provides to homeless shelters, along with pelvic exams, birth control, and emergency contraception.⁸³

One *Redbook* feature article that bemoaned the trouble with high costs of health insurance mentions the HPV vaccine alongside annual checkups and other preventative

health measures that would have to be foregone because one woman was forced to cancel her policy. The article noted that “the most ordinary routines become ominous when your kids are uninsured.”⁸⁴ *Self* published a set of “sex diaries” written by “average women” in 2008, and one woman mentioned getting the vaccine in passing, as casually as she talked about going grocery shopping and flirting with the cute intern from work.⁸⁵ In a feature article about new health developments, *Cosmopolitan* discussed using tattoo needles instead of regular injections as a better way to offer vaccines, “such as the one for HPV,” though the author could have chosen any vaccine to illustrate the point.⁸⁶ This theme of making the vaccine commonplace was used almost exclusively in conjunction with non-expert sources—single women with no children as well as those identified as mothers.

Guarded but Hopeful Future

This frame showed the vaccine as being a positive development, with much potential for future good, but presented a more even-handed and sometimes cautionary perspective for readers. For instance, in a feature article about cervical cancer and its link to HPV, *Redbook* noted that the reader “may benefit from the vaccine” but that “regular Pap tests are still your best protection” against cervical cancer, which is “rarely deadly in this country.”⁸⁷ While the article still suggested that readers talk to their doctors about the HPV vaccine, it was not portrayed as a cure-all but as something to be used in conjunction with other prevention strategies. One doctor was quoted as saying: “If we understand cervical cancer risk factors and get the vaccinations and screenings we need, we can eliminate deaths from this disease in the U.S. in our lifetime.”⁸⁸

Instead of using blanket statements, these articles offered suggestions such as “ask your doctor if the vaccine is right for you”⁸⁹ or “most doctors think getting this vaccine is very important for young girls.”⁹⁰ Some noted that getting the vaccine did not mean the end of Pap tests and yearly visits to the gynecologist. Questions about the long-term effectiveness of the vaccine were raised in a number of articles, adding to their guarded tone. For instance, one *Teen Vogue* column, which discussed the controversy over the vaccine, noted evidence suggesting that Gardasil’s protection against a potential HPV infection will last for only five years, although it was hoped to last for longer. The author continued: “It’s important to remember that Gardasil is not a magic shield.”⁹¹ A few years later, *Teen Vogue* ran another column noting that Gardasil was “not a cure” but “a means of protection,”⁹² illustrating the point with the account of a 21-year-old woman who had contracted HPV even though she had gotten the vaccine:

“[I] didn’t know until it was too late. I had the vaccine earlier this year, but I recently got a call from my gynecologist saying I tested positive for HPV. I made the stupid mistake of having unprotected sex because I thought I wouldn’t get it,” she confesses.

Changes in Frames Over Time

In 2006, the HPV vaccine was newly approved by the FDA and still something of an unknown quantity. By journalistic standards, this made it news. Despite the fact that a typical monthly magazine lead time is anywhere from four to six months, it could still be expected that coverage of the HPV vaccine would appear in issues as early as June 2006, as talk about the vaccine's approval had been going on for more than a year before that. Once the vaccine was available, each of these magazines had audience members who would be interested in this topic, and, it could be easily argued, needed to be informed about the vaccine. Therefore, the frames that emerged early are important to consider from both a health communication and a journalistic standpoint.

Four of the women's magazines followed a similar trend. Beginning in 2006, the primary frame found in *Self*, *Glamour*, *Essence*, and *Cosmopolitan* was that the HPV vaccine was a huge medical breakthrough. The articles used absolute terms when advising readers about whether to get the vaccine ("The answer is yes!").⁹³ *Self* and *Cosmopolitan* also often relied on the deadly consequences frame in combination with the medical miracle frame, using fear appeals and stories about cancer scares and humiliating wart outbreaks to try to convince readers to get the vaccine. Possible downsides of the vaccine did not receive any attention, and the controversy over it was rarely mentioned.

These frames continued through the beginning of 2010 (except in *Essence* magazine, as no articles appeared in 2010), when the frame changed to one of a more guarded, hopeful frame. The language in the magazine articles changed from "go get the vaccine" to "ask your doctor if the vaccine is right for you." Additionally, mentions of the long-term effectiveness of the vaccine began appearing for the first time. While the tone in the articles was still positive, it was much more subdued. Redbook was the only magazine that consistently framed the vaccine with guarded optimism across the entire time period studied.

O, the Oprah Magazine had no articles on the HPV vaccine during the study period. As qualitative ethnographic research seeks to be aware of the omissions as well as what is present, this finding is important to note. According to its media kit, the magazine has more "moms" among its readers than *Redbook*, *Self*, and *Glamour* (4.2 million readers between the ages of 18 and 34) and a "Feeling Good" health section in the front-of-the-book that appears monthly.⁹⁴ Its target audience falls within the range of those who would be affected by HPV and cervical cancer, and therefore potentially interested in the HPV vaccine. Additionally, African-Americans and Latinos, both populations that make up a high percentage of the *O* audience, have higher rates of cervical cancer diagnosis and death than white women in the general population.⁹⁵ In comparison, *Essence*, a women's magazine specifically targeting African Americans, did cover the vaccine. The magazine noted the higher rates of infection in African-American women, and tended to over-promote the vaccine as a three-shot miracle.

The dedicated parenting magazines offered what was, perhaps, the most surprising finding of this study, in that they contained very little coverage of the HPV vaccine. One could interpret this omission of coverage in the parenting magazines to the equivalent the editors creating a frame of invisibility; the HPV vaccine was a non-issue. *Parents* had only one article over the course of the entire four years, and it framed the vaccine with guarded optimism, including some discussion of the controversy. One somewhat surprising note in the article, given the rest of the findings, was that the vaccine was largely discussed as an STI vaccine, not a cancer vaccine. In fact, a fair portion of the article was devoted to a discussion of how important it is to have a talk with your daughter about safe sex, even if she gets the vaccine.

The way *Parenting* framed the HPV vaccine was completely opposite the coverage in women's magazines. It began being cautiously positive, presenting the vaccine as "just another shot," like the flu vaccine; by 2010, the tone was more insistent, with articles telling parents to get the shot for their children now, overstating the HPV-cancer link, and oversimplifying the issue.

Two of the teen magazines, *CosmoGIRL!* and *Seventeen*, began coverage of the vaccine in 2006 by relying on fear appeals and the deadly consequences frame. They offered readers scary story after scary story about how HPV and cervical cancer would ruin a young girl's life, suggesting that the reader must go out and get the HPV vaccine now. The vaccine was also depicted as a cure-all and a medical miracle, though this frame was less prominent than in the women's magazines. *CosmoGIRL!* never mentioned the vaccine again after 2007, so this frame is the one that persists. *Seventeen* moved toward a more cautiously optimistic frame in late 2009 and 2010. The articles encouraged readers to talk to their doctors to find out if the vaccine was right for them, and began noting questions about the vaccine's long-term effectiveness.

Of all the magazines in this sample and across all three categories, *Teen Vogue* appeared to offer the most complete and evenhanded coverage of the topic. Its articles were among the few mentioning the mandate controversy over the vaccine. Although they were positive about the potential for the vaccine, they encouraged girls to think and/or ask their doctors for more information before making up their minds. The articles were extremely informative, relied on a variety of sources—both experts and non-experts—and never portrayed the HPV vaccine as a cure-all. This guarded but hopeful approach continued over the entire time frame studied.

Overall, the frames of "deadly" consequences and mainstreaming of the vaccine were steady over time, and across all three genres of magazines. These frames appeared throughout the years studied and no particular pattern in most magazines was detected. Each was used fairly continuously over the entire time period.

Use of Sources

Experts, most commonly medical doctors, accounted for the majority of sources in the articles about the HPV vaccine, outnumbering non-expert sources (girls, women, parents) nearly 5 to 1 in women's magazines. However, that was a bit deceptive. In 2006, every source used was an expert, perhaps because by the time the FDA had approved the vaccine (June 2006), many magazines may have been close to closing their November or December issues. For 2007, 2009, and 2010, the ratio of expert to non-expert source was close to 2 to 1. A second spike in the expert to non-expert ratio was seen in 2008, coinciding with the height of the political controversy over school mandates. Parenting magazines did not use any non-expert sources, and teen magazines offered the most sourcing balance in their coverage; for every two experts cited there was one non-expert source used. See Table 3, below.

<p style="text-align: center;"><i>Table 3</i> <i>Number of Expert and Non-Expert Sources Used, by Magazine Type</i></p>						
	Experts			Non-Experts		
Year	Teen Magazines	Women's Magazines	Parenting Magazines	Teen Magazines	Women's Magazines	Parent's Magazines
2006	2	14	0	1	0	0
2007	2	1	0	1	2	0
2008	1	11	2	0	2	0
2009	0	4	0	0	2	0
2010	2	3	2	1	1	0
Total	7	41	4	3	7	0

Discussion

The goal of this research was to explore how teen, women's, and parenting magazines framed the HPV vaccine and how these frames changed over time. Overall, the findings suggest that there was surprisingly little coverage of the HPV vaccine in all the magazines over this four-year period. Considering the HPV vaccine was big news during this time period, first when then FDA approved its use and then again in 2007 and 2008 when several states started contemplating a mandate, it is surprising the magazines did not cover the vaccine with more depth. Only one magazine, *Teen Vogue*, mentioned the mandate issue and touched on the controversy over the vaccine. It was the only magazine to do so without refuting any opposition with the "you must be nuts" counterargument used in a quote by a doctor mentioned earlier.

The HPV vaccine is a controversial development relevant to women's health. Unfortunately, the magazines in this study fail to put forth the comprehensive coverage needed and recommended by health communication scholars. For example, in an analysis of the way breast cancer and breast implants are framed in women's magazines, Andsager and Powers suggest it is critical for media targeting women to offer a comprehensive coverage of health issues because the coverage by mainstream television and newspapers tends to be less than satisfactory.⁹⁶ When the issues are controversial, they note it is important for media like women's magazines to delve deeply, seeking out expert and unofficial sources, male and female sources, pros and cons of new developments and interviews from opposing camps. Simply relying on one source per story or telling only one side of an issue is not adequate, they argue, because niche media have more opportunity to influence personal behavior. Unfortunately, this did not happen in the coverage of the HPV vaccine, which was framed primarily through a simplistic medical breakthrough lens, linked to a "scary" and humiliating disease, or discussed briefly with hopeful caution. None of these frames offered any sufficient depth.

Arguably, the magazines analyzed in this study do not have a primary focus on health issues; thus, many of the articles published were short, often fewer than 150 words. Therefore, depth of information and nuance in detail was not the mission or emphasis of these publication or their articles. However, these very short articles might be the only information that a woman, teen, or parent encounters about the HPV vaccine, given many magazines' status as niche publications in which women seek information on sexual health issues that they might be too embarrassed to discuss with their doctors.⁹⁷ In that sense, potentially misleading information could have influenced readers to act or not act in regard to the vaccine without having sufficient information.

While it is also likely that many women and parents might be turning to Internet sources for such sensitive information, lifting the responsibility for magazine editors to run in-depth information, the Internet is not an entirely adequate excuse. It cannot be assumed that all readers have the interest in accessing information about the HPV vaccine online, nor can it be assumed that all readers have access to a computer. Additionally, while there is up-to-date, detailed medical information to be found on the Internet, it does not lessen the impact a magazine article might have, nor does it always and fully negate the effects of reading confusing or contradictory information.

The results of this study suggest that women who read these magazines might come away with a skewed perception about the vaccine and its potential to prevent HPV. The problem with such coverage is not that magazines do not cover every nuance of a health issue, but that oversimplification can sometimes lead to negative consequences for misinformed readers, as suggested by Habel, Hiddon, and Stryker and other researchers.⁹⁸ For instance, the magazines in this study rarely included information on the vaccine's long-term effectiveness, its potential side effects, or its inability to prevent against cervical cancer itself. This is in line

with what other researchers have found in earlier media content analyses. Other missing information included details about its cost, safety, and duration of protection. Stories also lacked detailed background information on the links between HPV and cervical cancer, and the availability of catch-up vaccine for females between the ages of 13 and 26. This could mean, for instance, that an inoculated woman might choose not to get Pap smears or fail to take adequate precautions when having sex with a new partner because she believes the HPV vaccine is, indeed, a “cure-all.” Some magazines omitted any coverage of the issue, thus implicitly suggesting to their readers that the HPV vaccine is not even worth mentioning, for better or worse.

The fact that parenting magazines had the fewest articles was quite surprising, considering that the recommended age for administering the HPV vaccine is between 9 and 12, prior to the onset of any sexual activity, though the CDC guidelines include ages up to 26 in the acceptable window. The decision for vaccinating these 9- to 12-year-old girls rests with their parents, and for many this may not be an easy decision. Yet, parenting magazines all but ignored the issue, and when it was discussed, the frame used was not the typical cancer-vaccine frame, often used to promote its acceptance, but an STI-vaccine, “teaching your girls sexual responsibility” frame, which researchers and the CDC have found to be less effective in encouraging vaccination intentions.⁹⁹ One reason for this might be that parenting magazines typically skew toward parents of younger children, especially babies and toddlers, although there are sections in both magazines included in this study that discuss middle school-aged children, and specifically mention both 9-year-olds and tweens. However, this age group is not the main focus of the magazines’ content. Another reason might be that the editors are making the choice to steer clear of the controversial vaccine, for fear of angering readers, advertisers, or other constituents. Possibly losing subscribers or advertising dollars in an already unstable marketplace offers an easy justification for editors to avoid a hot-button issue.

On the other side of the spectrum were the articles that framed the HPV vaccine as a medical breakthrough, overwhelming the reader with statistics and fear appeals, even suggesting that without the vaccine the reader might die, just to encourage her to get vaccinated. The American Cancer Society estimates that cervical cancer is responsible for less than 2 percent of the total female cancer deaths in the United States, an estimated 4,090 deaths in 2013. Comparatively, lung cancer accounts for more than 26 percent of female cancer deaths (an estimated 72,220 in 2013) and breast cancer accounts for more than 14 percent of female cancer deaths (an estimated 39,200 in 2013).¹⁰⁰ The use of dramatic statements in conjunction with the HPV vaccine could be perceived as out-of-proportion attempts to frighten the reader into seeking the vaccine. This use of fear appeals was widespread across the women’s and many of the teen magazines.

As time went on, the frames did change in many of the magazines, with the primary change being in the women’s magazines—from the breakthrough frame to a more modestly hopeful frame. As with many medical discoveries, much of this change might be attributed to

saturation of the news market as well as the simple passage of time leading to more complete (and more matter-of-fact) information. In later years, more was known about the vaccine, and like with any “new discovery,” the magazine world had moved on to the next big thing, leaving the HPV vaccine to be reported in a less sensational way.

Although a sensational and extremely positive approach has dominated the coverage of the HPV vaccine, only about a quarter of the girls and young women in the eligible age group have received it. While it is impossible to measure any causal effects of the magazine frames on subsequent vaccination rates, this statistic does raise questions for future research. For instance, if the women reading these magazines are choosing not to be vaccinated, why is that the case?

The results also indicated that experts, most commonly medical doctors, accounted for the majority of sources in the articles about the HPV vaccine, outnumbering real people (girls, women, parents) nearly 5 to 1 in women’s magazines. This is in line with what John, Pitts, and Tufts found in their study about the debate over the state-mandated HPV vaccine in Virginia.¹⁰¹ There are two ways to interpret this result. On the one hand, as other researchers have argued, the omission of these voices leaves out a critical perspective in the debate over HPV vaccination. Experts are certainly important and lend credibility to health stories. However, when all a reader hears is the voices of experts, who may or may not have an agenda of their own, the reader may miss out on critical, first-person information that can assist in decision-making.

On the other hand, when non-expert sources were used, they were almost always part of a fear appeal frame, as in a scary “it-happened-to-me” type of story. This was particularly true of the women’s magazines. Therefore, the use of these first-person stories in some cases arguably creates a “false balance”,¹⁰² and does not assist in decision making because it causes confusion and/or fear about HPV and cervical cancer.

Fowler, Gollust, Dempsey, Lantz, and Ubel argued that as the stages of a framing cycle evolve journalists would have increased choice in sources,¹⁰³ and therefore, it might have stood to reason that the articles in this analysis would have shown greater diversity in sourcing through the four years. This was not the case in terms of expert versus non-expert sources, nor was it the case across the time period. Articles utilized approximately one expert source per article, if there was a source, and these sources were generally New-York-based medical doctors or pharmaceutical representatives. It is unclear why the writers did not utilize a broader selection of expert sources, especially given the long lead time of some of these monthly magazines. However, many of the articles were quite short, so using more than one source per article may have been deemed unnecessary by the magazine editors.

This study fills a gap in the literature regarding the coverage and framing of the HPV vaccine in the media, but its findings must be tempered by some limitations and unanswered questions for future research. One limitation was the lack of access to the articles in their

original issues displaying their “natural environments.” This would have undoubtedly enhanced the understanding of the frames by allowing for the review of images, charts, colors, sidebars, and other presented objects in the layout.¹⁰⁴

Furthermore, as a possible direction for future research, it remains unclear how and where parents might find information about the HPV vaccine in niche publications. Therefore, an additional study limitation was not including other magazines with high numbers of parent readers. Analyzing magazines such as *Family Circle* and *Ladies' Home Journal*, each of which has a large population of mothers of tweens as part of their readership, would be a logical next step. It would also be interesting to investigate how readers interpret these articles and whether magazine coverage has had any impact on women's decisions to be vaccinated or not. There is no doubt, based on this analysis, that the service these magazines should feel ethically obligated to provide by offering in-depth information for readers is not being adequately fulfilled.

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