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Advertisements promoting HPV vaccine for adolescent males: Does source matter?

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Abstract

Objectives—Many parents recall hearing of HPV vaccine through drug company advertisements. We sought to examine whether parents accurately recall the source (i.e., sponsor) of ads promoting HPV vaccine and the impact of drug company ads.

Methods—A U.S. national sample of 544 parents of adolescent males ages 11–17 participated in an online between-subjects experiment. Parents viewed an advertisement encouraging HPV vaccination for boys with a logo from a randomly assigned source. Parents rated trust, likability, and motivation for vaccination while viewing the ad and later indicated who they believed sponsored it.

Results—Nearly half (43%) of parents who viewed a hypothetical advertisement containing a logo incorrectly identified the ad source. More parents correctly identified the source of drug company ads than ads from other sources (62% vs. 25%, OR 4.93, 95% CI 3.26–7.46). The majority of parents who saw a logo-free ad believed a drug company created it (60%). Among parents who correctly identified the ad source, drug company ads decreased motivation to vaccinate their sons, an association mediated by reduced liking of and trust in the ads.

Conclusions—Parents were more accurate in identifying drug company ads, primarily because they tended to assume any ad was from a drug company. Public health organizations may need to take special measures to ensure their messages are not perceived as sponsored by drug companies.

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Keywords

HPV vaccine; males; drug company; advertisements; trust

Introduction

Human papillomavirus (HPV) vaccine can prevent several cancers and genital warts.[1,2] Guidelines recommend routine vaccination of boys,[3] though uptake is very low.[4] Many parents recall hearing of HPV vaccine through drug company advertisements,[5] which may be problematic as people find corporate sources less credible than non-profit or government sources,[6] and credibility can affect intentions and behavior.[6,7] Thus, it is possible that parents' have negative reactions to drug company ads that hinder vaccine uptake. We hypothesized that: (1) parent accuracy in identifying source would be only moderate because extensive advertising of HPV vaccine by drug companies would make them the presumed source; and (2) advertisements from drug companies would be less liked and trusted and therefore less likely to motivate parents to vaccinate their sons.

Methods

Participants

Parents, who were in a survey panel and had at least one son ages 11–17, received an email invitation to participate in our online survey in fall 2010.[8] The survey company developed the panel from a probability-based sample of U. S. households. Of 1195 parents invited to participate, 752 responded to the invitation, and of those, 72% ($n=544$) were eligible and completed the survey. Demographic characteristics of respondents appear elsewhere.[4] The Institutional Review Board at the University of North Carolina approved the study.

Procedures

We randomly assigned parents to one of ten conditions in a 5 (source of ad) \times 2 (warning text) between-subjects factorial experiment. They viewed a display ad (Appendix 1), encouraging them to vaccinate their sons, with a randomly assigned logo that indicated source: 1) Merck, 2) Gardasil, 3) Centers for Disease Control and Prevention (CDC), 4) American Cancer Society (ACS), or 5) no logo. We chose the CDC and ACS because they are credible alternative sources for information on HPV vaccine with widely disseminated logos. There was no effect of an additional manipulation (the inclusion of safety information warning text), so we do not discuss it further.

Measures

While viewing the ad, parents rated their agreement with these statements on a 4-point scale (*strongly disagree* [coded as 1] to *strongly agree* [4]): “I like this ad”; “I trust this ad”; and “This ad makes me want to vaccinate my son against HPV”. Once the ad was no longer on screen, parents indicated whether the ad's sponsor was a drug company, government agency, charity for cancer, or insurance company. We coded parents' responses as correct if they selected “drug company” for ads with Merck or Gardasil logos; “government agency” for ads with a CDC logo; or “charity for cancer” for ads with an ACS logo. Other response combinations were incorrect.

Data Analysis

Using logistic regression, we examined whether actual ad source predicted ad source misattribution. These analyses did not include participants who viewed an ad without a logo because they could not, by definition, be correct about source.

We used linear regression to examine the effects of perceived ad source (drug company versus not a drug company, coded as 1 and 0) on parents' ratings of likability, trust, and motivation to vaccinate. This analysis excluded respondents who saw ads without logos or inaccurately identified ad source, to eliminate those for whom the logo manipulation failed. We examined trust and likability as potential mediators.[9] Analyses with SPSS version 17.0 (Chicago IL) used two-tailed statistical tests and a critical alpha of 0.05. β s denote standardized regression coefficients.

Results

Accuracy

Nearly half (43%) of parents who viewed a hypothetical advertisement containing a logo incorrectly identified the ad source. More parents correctly identified the source of drug company ads than ads from other sources (62% vs. 25%, OR 4.93, 95% CI 3.26–7.46). The majority of parents who saw the logo-free ad believed it was created by a drug company (60%).

Effect of Source

Among parents who correctly identified ad source ($n=243$), most agreed or strongly agreed that they liked the ad (69%) and trusted it (60%). Fewer (38%) agreed or strongly agreed that the ad made them want to get their sons HPV vaccine. Parents who correctly identified drug company advertisements reported lower levels of liking, trust, and motivation to vaccinate than those who correctly identified ads from another source (all $p<.05$).

Greater liking of ($\beta=0.46$, $p<.001$) and greater trust in the ad ($\beta=0.31$, $p<.001$) both predicted greater motivation to vaccinate (Figure 1), but the association between source and motivation became non-significant when controlling for liking and trust ($\beta=-0.16$, $p=.01$ without controlling; $\beta=-0.02$, $p=.74$ after controlling). This pattern suggests mediation: drug company ads elicited lower liking and trust and, in turn, lower liking and trust reduced motivation to vaccinate sons against HPV.

Discussion

Drug company ads motivated parents less to vaccinate, relative to non-drug company ads, because parents liked and trusted the ads less. However, parents were more accurate in identifying ads from drug companies than other sources, primarily because they tended to assume any ad was from a drug company. Producing ads that are clearly not from drug companies could help public health organizations increase HPV vaccine uptake. Approaches could include providing a statement about the mission of the ad's sponsor or prominently displaying its contact information in the ad. Future studies should address the changing context of HPV vaccination. Parents' interest in HPV vaccine for their sons may rise now that guidelines recommend administering the vaccine routinely to boys.[3] The relationship between perceived source and attitudes toward vaccinating boys against HPV could change as parents see more HPV vaccine-related messages.

Study strengths include an experimental design and a national sample. One limitation is the self-reported vaccination intention outcome; however, intention is a key predictor of vaccine uptake.[10] In addition, parents viewed the hypothetical vaccination ads as part of an experiment, not in a real-world context. Finally, although this study used a national sample, parents were from an online panel and mostly white and well-educated; generalizability should be established.

Ultimately, understanding links between ad sponsorship and parents' attitudes may help public health practitioners craft more effective promotion messages that parents could easily distinguish from ones by drug companies.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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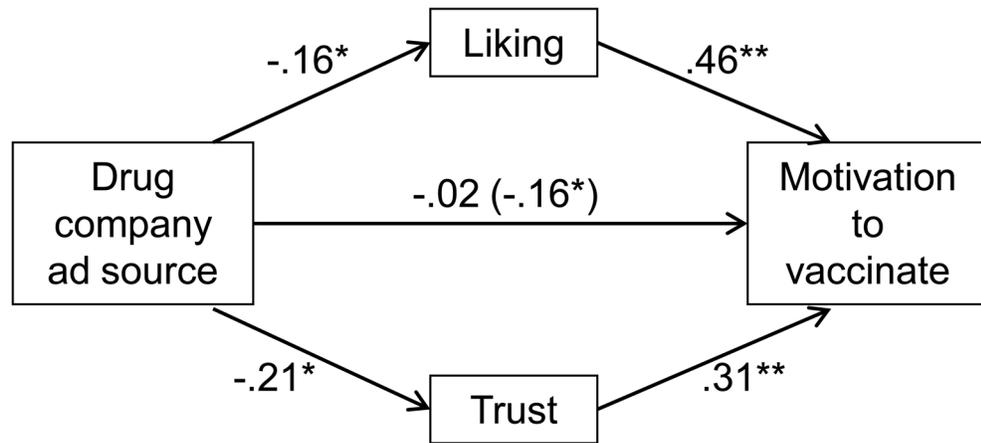


Figure 1. Test of mediation. Among respondents who accurately identified ad source ($n=243$). Numbers are standardized regression coefficients. Number in parenthesis shows the association between source and motivation prior to controlling for liking and trusting the ad. * $p<.05$ ** $p<.001$