Dissecting the Root of Vaccine Misinformation on Pinterest: Examining Anti-Vaccine Organizations’ Conflict Strategies and Risk Communication

*Virginia Commonwealth University, **University of Georgia
Correspondence: Jeanine Guidry, guidryj@vcu.edu

In short: This study focused on the use of visual social media platform Pinterest by five anti-vaccine organizations, and analyzed Pinterest posts (“pins”) through the lens of risk communication theory.

Pinterest: Popular visual-based social media platform, 100 million active users, 82% female

Vaccines and Anti-vaccine movement: Vaccination is an effective public health tool for reducing morbidity and mortality caused by infectious diseases. However, increasing numbers of parents question the safety of vaccines or refuse to vaccinate their children outright. The Internet plays a significant role in the growing voice of the anti-vaccination movement as a growing number of people use the Internet to obtain health information, including information about vaccines.

Agitation Strategies: Bowers et al. (2009) identified the following agitation strategies often employed in conflict communication: 1) Petitioning, 2) Promulgation, 3) Solidification: using in-group publications to reinforce cohesiveness among members; 4) Polarization: the use of flag issues and flag individuals; 5) Nonviolent resistance; 6) Escalation/confrontation; and 7) Gandhi & guerrilla.

Risk Communication: The risk perception model focuses on how risks are perceived; for example, risks that evoke fear, terror or anxiety will be perceived as greater than risks that do not; risks associated with institutions or organizations that are lacking in credibility and trustworthiness are perceived as greater than risks associated with trustworthy entities; and risks that produce fatalities or have irreversible, catastrophic consequences are perceived as greater than risks that do not carry a strong potential for fatalities (Covello, Peters, Wojtecki, & Hyde, 2001). When serious risks are perceived in a crisis situation, people are less able to process (often much needed) information, and when people are deeply concerned about an issue this may interfere with their ability to engage in rational discourse (Caims, de Andrade, & MacDonald, 2013).

Framing: Thematic frames portray and present issues through information about their systemic causes, trends and consequences. In contrast, episodically framed coverage portrays and presents issues through either a specific event serving as an anecdotal exemplification of the issue or a personal story attaching a human face to the issue (Iyengar, 1994).

Method
Overview: Using a quantitative content analysis, this study analyzed anti-vaccination organization posts on social media platform Pinterest.
Sample: 1,119 pins, by GreenMedInfo, Dr. Chris Niedzinski, NaturalNews, Health Impact News, and Dr. Mercola

Research Questions, Results, and Discussion
RQ1 How do anti-vaccine organizations communicate about vaccines on Pinterest - in general, by vaccine type, and by visual type?
RQ2 How do publics respond to anti-vaccine organization communications on Pinterest - in general, by vaccine type, and by visual type?
- Pin visuals: 66.2% (n=740) consisted of primarily image, 6.4% (n=71) consisted of primarily text, and 21.5% (n=240) consisted of a mix of image and text.
- Of all pins, 44.4% (n=496) mentioned specific type of vaccine; flu vaccine, HPV vaccine (see Figure 3), and MMR vaccine (see Figure 2) most often mentioned.
- Mean number of repins, comments, and total engagement significantly higher for MMR vaccine pins as opposed to HPV-focused pins.
- Mean number of repins, likes, and total engagement significantly higher for image/text pins and text-pins than for image only pins.

RQ3 What agitation strategies are used by anti-vaccine organizations to communicate about vaccines on Pinterest and how do these affect the public’s engagement with these pins?
Of the six agitation strategies, only solidification and polarization were present in more than just a few pins. Almost all pins, 95.8% (n=1,115), used a solidification strategy (specifically, using Pinterest as an in-group publication), and 39.6% (n=447) used a polarization strategy (for a complete list see Table 4).

RQ4 What type of risk perception factors do anti-vaccine organizations use to communicate on Pinterest and how do these affect the public’s engagement with these pins?
- Of the pins in the sample, 47.8% (n=534) contained a fear image (see Figure 1), 44.3% (n=495) contained a reference to adverse effects of vaccines (see Figure 3), and 30.8% (n=344) referred to a form of conspiracy (for a complete list of risk perception variables frequencies see Table 5).
- Mean number of repins and total engagement significantly higher for pins that mention adverse vaccine effects as opposed to pins that do not.
- Mean number of repins and total engagement significantly higher for pins that mention government conspiracy as opposed to pins that do not.

RQ5 How do anti-vaccination organizations frame issues of vaccination (episodic vs. thematic framing) in their communication on Pinterest, and how do these affect the public’s engagement with these pins?
Three quarters of the pins, 74.5% (n=832), uses thematic framing (see Figures 1 and 2), 17.1% (n=191) uses episodic framing (see Figure 3), 3.2% (n=36) uses both, and 5.2% (n=58) uses both.
Conclusions

- Anti-vaccine organizations through their messages do not focus on one specific (type of) vaccine, but rather on three very different types of vaccines: the flu vaccine (general population), the MMR vaccine (focused on small children), and the HPV vaccine (focused primarily on teens and young adults).

- While Pinterest is a visual social media platform, text-based pins and image/text mixed pins both elicited more engagement than image-only-based pins. This may indicate that Pinterest users who engage with anti-vaccine pins are seeking more information or explanation than can be delivered through an image alone.

- When considering specific vaccine types, pins that focus on the HPV vaccine are more frequently engaged with than pins that focus on the flu vaccine. This could be an indication that those Pinterest users most interested in the MMR vaccine (likely mothers with children in the age range to get the MMR vaccine) are more on board with anti-vaccine rhetoric and less likely to be receptive to communication on the safety of vaccines.

- Almost all pins use solidification as a strategy and a significant portion uses polarization. Polarization will create an “us-and-them” atmosphere, further deepening the divide between those who trust vaccines and those who are convinced of the perceived damages they do.

- Somewhat surprisingly, the clear majority of the pins use thematic framing, while anti-vaccine social media posts in other recent studies primarily use episodic framing through narratives of people who experienced perceived vaccine damage (Briones, Nan, Madden, & Waks, 2012; Guidry, Carlyle, Messner, & Jin, 2015). This provides an opportunity for health communication professionals to focus more on narratives and episodic framing when discussing vaccines and vaccinations on Pinterest.

- Almost half the pins included a fear image — an image portraying a syringe/needle, or a menacing medical figure. A similar percentage included a mention of (perceived) adverse effects of vaccines.

- Adverse effects pins and pins that mention suspected government conspiracies are more likely to produce engagement than pins that do not. Through their use of fear-based imagery, anti-vaccination organizations seek to increase polarization. As public health professionals, our efforts should stay away from the extremes and focus on creating bridges between individuals and the health care community.

Implications for Practitioners

- Health communications strategies should focus on those social media users that have not solidified their intentions towards vaccines yet and are not vaccinating due to issues of complacency, convenience, and calculation. Engagement with this audience needs to counter the polarization and solidification of the anti-vaccine movement.

- Specifically, health communicators should borrow successful features from the anti-vaccine movements successful engagement strategies. Text-based pins and image/text mixed pins will elicit more engagement from this audience.

- It is also essential for practitioners to develop strategies for specific issues, such as the flu, MMR, and HPV vaccines. For Pinterest, as this study shows, communication practitioners should consider focusing on vaccines other than the MMR vaccine, since the level of engagement with anti-MMR vaccine pins indicates that those pinners may be more strongly convinced of the vaccine’s supposed harmful effects and may not be as easily convinced of its safety.

- Finally, health communicators should consider utilizing episodic framing and involve powerful narratives in their Pinterest communications, especially since the anti-vaccine organizations in this study primarily used thematic framing and narratives have proven to be effective when used in vaccine-focused communications.

References


