Public Health Campaigns and the COVID-19 Vaccine: An Analysis of the Role Marketing and Public Relations Play in Combating Vaccine Hesitancy and the Spread of Misinformation on Social Media

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By

Emily Mahoney

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Chapter 1

Introduction

Statement of the Problem

The COVID-19 pandemic has proven how powerful social media and online platforms can be in spreading both true information and misinformation. According to the World Health Organization, “The Coronavirus disease is the first pandemic in history in which technology and social media are being used on a massive scale to keep people safe, informed, productive and connected,” (“Managing the COVID-19 Infodemic”). While the virus has been prevalent in our society for over a year now, from March 2020 to June 2021, there have been many misconceptions and rumors being spread about the vaccines on various online platforms. During the time this study was done, from January 2021 to June 2021, the third vaccine has been approved and there has been a universal confusion around the difference in the vaccines, how different countries’ labs are involved in generating U.S. vaccines, when vaccine rollout will begin, who will be eligible get them, which one should they get, etc. This mixed-messaging not only has increased anti-vaccine movement efforts but also the uncertainty and unwillingness for Americans to get a COVID-19 vaccine.

Social media makes it fairly easy for any organization or any individual to post information regarding their opinion or perception of the vaccine. Whether this statement is factual, opinionated, and no matter the credibility of the source, the message can be seen by hundreds and even thousands of people within a couple of hours. Social media platforms such as Twitter, Facebook, WhatsApp, Instagram, and WeChat have become major sources individuals will look to for information about the COVID-19 vaccine (Naeem and Bhatti). These platforms embody online interactions where individuals can respond to one another by a repost, share, or
comment. This creates a problem when vaccine information is shared on these platforms by influencers, friends, family, the WHO, state governors, etc. because individuals can feel overwhelmed in not knowing which sources of information to trust or believe. Even if the information comes from a reliable source, there are other factors like political party identification, geographic location, age, education level, occupation, etc. that influence someone to deem to them what information is valid and what is not.

The lack of a consistent marketing, a clear social media campaign, and overall public health communication effort for the COVID-19 vaccine has negatively impacted the public’s willingness and acceptance of the vaccine. Krutika Kuppalli, an infectious disease doctor at the Medical University of South Carolina, in the Bloomberg report questioned, “We spent $10 billion months ago to develop vaccines; why were we not spending money to introduce the public to the vaccines?” (LaVito). To have a successful and efficient vaccine rollout, marketing and public health campaigns must start early and have a clear and consistent message.

**Background of the Problem**

In 2019, the World Health Organization (WHO) named vaccine hesitancy as one of the top ten threats to global health. The WHO identified the key reasons individuals choose not to get the vaccine are complacency, inconvenience in accessing vaccines, and lack of confidence (“Ten Health Issues”). As this was released in 2019 before the COVID-19 pandemic, you could imagine if vaccine hesitancy was a concern then, now it is an even larger one.

Furthermore, in analyzing vaccine hesitancy with COVID-19, the Bloomberg report determined a mixed-messaging and disjointed approach as two reasons the U.S. vaccine rollout was hindered (LaVito). Mixed messaging can lead to skepticism, even for those who are
pro-vaccination. This has been an issue even beyond vaccines, for also with mask mandates, social distancing guidelines, and the process for reopening schools, businesses, etc. The issue here is the more questions and concerns that arise around the vaccine in society and the media, the harder it will be for public health officials and communicators to reach the audience with the truth. The expanded universe of mixed-messaging around COVID-related issues beyond the vaccines is exacerbating vaccine hesitancy.

**Purpose of the Study**

The COVID-19 infodemic has brought uncertainty and hesitancy with the lack of a consistent message promoting the vaccine. This study is intended to determine the role social media has as a messaging platform for information regarding the COVID-19 vaccine and the persuasiveness misinformation on these platforms has on people’s perceptions. Researching how the impact of COVID-19 vaccine misinformation and falsehoods can affect perceptions of our society will show how important marketing, PR, and other professional communicators roles are during a time like this. All in all, communication professionals play an essential role in the distribution of valid and reliable vaccine information to the public, in addition to combating false and misleading information.

By analyzing how COVID-19 vaccine messages on social media have impacted individual’s perceptions, thoughts, and opinions on getting the vaccine, it will further prove the significance of having a pro-vaccine public health campaign. The reason these third-party messages have been so powerful and influential is that there have been no clear marketing or public health campaigns about the vaccine as of December 2020. Even though the U.S. Department of Health and Human Services started a vaccine education campaign in December,
there is a lack of knowledge about the vaccine and trust with the government administering the vaccine to where now individuals are confused and overwhelmed by this infodemic on social media. The research done throughout this study will analyze the importance marketing and communication efforts play in vaccine acceptance and how COVID-19 vaccine uptake will be impacted.

**Setting for the Study**

This study will be completed as a data collection and research-driven analysis from studies on the subject matter and related subject matter for a senior project at California Polytechnic State University, San Luis Obispo. Data collection will come from personal interviews and research-driven efforts. Interviews will be done with marketing, public relation, and other communication professionals who are all professors at Cal Poly. All interview participants will be asked the same questions to give insight from each different communication perspective on how and why COVID vaccine communication needs to have a clear and consistent campaign. All data collected will answer the three research questions presented in the study and answered using recent studies and information from credible sources.

**Research Questions**

The study used the following research questions that were based on literature and articles focused on the impact marketing and social media play in conveying the spread of information regarding the COVID-19 vaccine.

1. How are trust and confidence established in vaccine marketing campaigns?
2. How do you increase the willingness for individuals to get the vaccine on social media platforms?

3. What are some strategies for communication professionals to address misinformation?

**Definition of Terms**

The following terms are defined to assist the reader and provide context to the study:

**Disinformation**: Knowingly spreading deliberately misleading or biased information; manipulated narrative or facts; propaganda (Misinformation vs. Disinformation).

**Disinhibition**: Loss or reduction of an inhibition, as by the action of interfering stimuli or events ("Dictionary by Merriam-Webster").

**Herd Immunity**: A reduction in the risk of infection with a specific communicable disease (such as measles or influenza) that occurs when a significant proportion of the population has become immune to infection (as because of previous exposure or vaccination) so that susceptible individuals are much less likely to come in contact with infected individuals ("Dictionary by Merriam-Webster").

**Infodemic**: An overabundance of information, both online and offline. It includes deliberate attempts to disseminate wrong information to undermine the public health response and advance alternative agendas of groups or individuals ("Managing the COVID-19 Infodemic").

**Marketing**: The process or technique of promoting, sellings, and distributing a product or service ("Dictionary by Merriam-Webster").
**Misinformation:** False information that is spread, regardless of intent to mislead (Misinformation vs. Disinformation).

**Public Relations:** The business of inducing the public to have understanding for and goodwill toward a person, firm, or institution (“Dictionary by Merriam-Webster”).

**Social Media:** Forms of electronic communication, such as websites for social networking and microblogging, through which users create online communities to share information, ideas, personal messages, and other content such as videos (“Dictionary by Merriam-Webster”).

**Hesitancy:** The quality or state of being hesitant such as indecision or reluctance (“Dictionary by Merriam-Webster”).

**Organization of the Study**

In this study, Chapter 1 includes a problem statement, the background of the problem, purpose of the study, and the definition of terms. Chapter 2 is a literature review examining prior marketing communication efforts regarding vaccine information, different communication theories, and the role current communication efforts play in fighting misinformation and promoting pro-vaccine messaging. The literature review will be separated into five different subsections of information. Chapter 3 will focus on the methodology of the study including data collection, presentation, interview design as well as limitations of the study. Chapter 4 includes the insights from interviews conducted and will be presented and organized based on the original research questions. Interview participant’s bios will also be listed in Chapter 4. Chapter 5 will summarize the study and include strategies for future marketing efforts and ways for other
communication professionals to address vaccine hesitancy in addition to the importance of public health campaigns.
Chapter 2

Literature Review

The literature review portion of the study will focus on analyzing existing research studies, peer-reviewed journals, and articles that examine the role marketing, PR, and other communication professions play in combating vaccine hesitancy and the spread of misinformation on social media. The review will be broken into five key topics.

How Marketing and PR Played a Role in Influenza Vaccine Distribution

Both the influenza and COVID-19 vaccine communicators have been fighting vaccine hesitancy as a result of the 2020 infodemic. The influence of the media on the public’s perception during this time has increased the need for clear, consistent, and reliable communications to address false vaccine information. As explored earlier, this issue of misinformation increasing vaccine hesitancy is more prevalent now than ever before with social media and other online communication platforms. Marketing tactics used in 2020 for the influenza vaccine advertised positions that the flu shot was something consumers can be openly proud of getting; furthermore, launching flu-shot campaigns earlier than previous years to educate on the importance of reducing community spread of the flu and educating about the potential burden on the healthcare system during the COVID-19 pandemic was extremely effective (Craft). As the COVID-19 vaccine has been developed and distributed at the peak of flu season, there is an important parallelism in the vaccine campaigns that is worth analyzing.

According to research done by Peter Doshi, assistant professor of pharmaceutical health services research at the University of Maryland School of Pharmacy, “Promotion of influenza vaccines is one of the most visible and aggressive public health policies today.” As the influenza
vaccine has been accessible in the United States since 1945, “The enormous growth has not been fueled by popular demand but instead by a public health campaign that delivers a straightforward, who-in-their-right-mind-could-possibly-disagree message,” (Doshi). Both marketing and PR communications played an important role in driving a clear, consistent public health campaign promoting the influenza vaccine. This proves the essential role and impact these communication professionals have in decreasing COVID-19 vaccine hesitancy. Key factors in pro-vaccine health campaigns can include determining the core content, developing the message, working with medical professionals as key opinion leaders, using a situational analysis to test the campaign, creating written and visual deliverables for both stakeholders and the public, as well as for deciding which mediums will be used to distribute the information.

Another key factor that determined acceptance of the influenza vaccine and has greatly impacted perceptions and opinions of the COVID-19 vaccine is trust. Trust in vaccines comes from the systemic level as includes “trust in the healthcare system, the experts defining vaccination strategies, and more generally in government bodies affects vaccine acceptance,” (Verger and Dubé). As seen in France with the influenza vaccine, for example, “The French population’s negative perception of the government’s management of the 2009 A/H1N1 pandemic undermined confidence in the overall vaccination system and led to lower vaccination coverage against seasonal influenza for several years,” (Verger and Dubé). Individuals have to trust both their sources of information and the government. Trust needs to be acquired at all the local, county, state, and nationwide systematic levels for a pro-vaccine message to be successful.

It can be concluded that the increased uptake and acceptance of the influenza vaccine had risen due to increased knowledge about the vaccine, how it was tested, the possible side effects, and medical professionals answering other societal concerns. This can be a precedent to
understanding how COVID-19 vaccine hesitancy developed and how future campaigns and communication about the vaccine must be strategically crafted to address concerns.

**Communication Theories**

There are two psychological communication theories that have been extremely prevalent on social media and can be used to analyze how individuals craft their beliefs and perceptions about the COVID-vaccine. The two subsections of this portion will define and interpret how the different theories contributed to increasing COVID-19 vaccine hesitancy in the United States. Marketing and PR communications both play important roles in crafting these communication strategies as well.

**Confirmation Bias**

When individuals can follow accounts and users of their choosing on social media platforms, it likely makes them more susceptible to biases and relying on not credible sources for their information. As it is important to check biases, S. Shyam Sundar (James P. Jimirro), professor of media effects at Penn State, said, “Confirmation bias, or the tendency to interpret new evidence as confirmation of one’s existing beliefs, can interfere with the ability to evaluate information objectively.” In Sundar’s *Detecting Vaccine Misinformation* video, he also addresses ways for individuals to eliminate confirmation bias and fact-check where they are getting their information. Confirmation bias is the most prevalent theory in explaining how this infodemic can make it difficult for individuals to admit they are viewing only information that is reinforcing their current beliefs while others do not even realize they are falling victim to it.
Opinion Leader Theory

Opinion leaders are oftentimes the super spreaders of information. The opinion leader theory states, “Opinion leaders absorb the messages from the mass media, recast and reinterpret the messages, and through personal connections, pass them along to an audience that is often distracted, unaware, or uninterested in political matters,” (“Opinion Leader”). Especially when quantifying the reach many individuals have on social media platforms, it can be difficult to exactly determine who is a key opinion leader, and whether they are formal or informal. A formal leader is a member of an organization who has given authority under their position to influence other members of the organization to achieve organizational goals and informal leaders possess strong self-motivation, possess a positive attitude, motivate others and put effort to drive organizational goals. Informal leaders are the best candidates for future formal leaders (Hiray). On social media, anyone can act as an opinion leader and this can create issues when regarding credible information about the COVID-19 vaccine. This can be either a beneficial or detrimental component in influencing public perception because it depends on how susceptible someone is being persuaded one way or the other, who they follow on social media, and what information they are exposed to.

With the adoption of social media, it is likely most people are not directly influenced by mass media, and instead opinion leaders taking these messages and make them personable or relative to their audience. The infodemic and political divide of the country accompanying the COVID-19 pandemic has also caused a lot of mistrust and confusion on where individuals should look to get their news. There has been a movement to steer away from the large news
platforms and more focus on smaller-scale sources. This is why opinion leaders on social media have been very prevalent sources of COVID-19 vaccine information.

All in all, social media allows anyone to speak and share information on any topic whether or not they are a credible source, and this is one of the driving reasons for COVID-19 vaccine hesitancy. It is almost like an information overload in that so much circulates on these platforms day to day it can be confusing for individuals to know what and who to believe. This also poses a large threat to the WHO and other reputable medical sources being able to spread information.

**Current Marketing and PR Efforts Against COVID-19 Vaccine Hesitancy**

Current campaigns promoting the COVID-19 vaccine have advanced tremendously since the first rollout of dose in late 2020, however, there were two errors made early on in this communication. The first was that the push should have started sooner, and second was that the rush to get people vaccinated likely compromised the quality and quantity of vaccine communications. There seemed to be general confusion and hesitancy right off the bat because people were not informed about the new vaccines. For example, having two vaccines distributed for the same virus can be confusing in general, and then not specifically clarifying the differences between the two would undoubtedly increase hesitancy. This is where marketing becomes important is crafting those early clarifying messages and PR can work to address misinformation.

The Wall Street Journal recently covered the Ad Council and COVID Collaborative efforts to promote the COVID-19 vaccine with their “It’s Up To You” campaign. Based on their research, the Ad Council found that “vaccine hesitancy is nuanced, and that its initiative would
need to include campaigns customized for different groups of people with different concerns,” (Bruell). In terms of marketing, this lack of information issue stems from the original lack of not only a clear public health campaign but messaging being tailored to address different groups of people.

Furthermore, in terms of PR, there is a lot of reputation and trust to be developed with both the pharmaceutical companies themselves and organizations like the WHO that are providing information. The “It’s Up To You” campaign is interesting because in an effort to build good PR for the campaign the Ad Council had partnered with many nonprofit groups and brands. Partnerships with powerful organizations and companies like Amazon, Disney, Apple, Google, or Outcome Health, each contribute to the content and media needed for nationwide viewing of this campaign. Leading brands, media companies, and social platforms can act as key opinion leaders in any campaign.

A great example of an online, interactive way to convey information comes from a Business Insider article that answer’s leading questions about the different COVID-19 vaccines. As shown in Figure 1, a screenshot of the user’s view on the site proves how information can be presented in a simple yet effective way. This example highlights a simple and effective visual marketing communications. It is also important in that it lets the user select their “Comparison Point” so they ultimately have control of which information they want to receive, eliminating any idea of biases or gatekeeping.
The table provided on Business Insider breaks down the different COVID-19 vaccines being offered as of March 2021 and the drop-down menu allows users to select their comparison point and learn more about each different vaccine (Schuster-Bruce).

The biggest takeaway from this research is that vaccines are only as effective as the marketing and PR efforts are successful in conveying authentic, clear, and credible information. Each example of how these communication fields are utilizing social media and online platforms to spread information goes to show how influential these mediums are. Successful marketing and PR related to the COVID-19 vaccine comes down to using the correct verbiage and angle to persuade individuals, utilizing the most efficient platforms, making sure the messaging is diverse and inclusive, and finally finding key partners and opinion leaders to support the campaign.
COVID-19 Infomedic Spreading Misinformation

Social media can be beneficial in providing a two-way communication channel for medical professionals and companies to directly address questions and concerns that arise about the COVID-19 vaccine. However, with the impact of user-generated content and the threat of how fast false information can spread, social media has become more of a PR responsibility in addressing false information and acting as a gatekeeper of information for society rather than a platform to promote the vaccine.

Managing the COVID-19 infodemic has been not only a new PR duty but many business communication professionals have altered their roles to fight the infodemic. Infodemics can include rumors, stigmas, personal opinions, and conspiracy theories, all of which have been extremely prevalent on social media. Facebook, Twitter, and online newspapers have been identified as the best platforms for monitoring misinformation and dispelling rumors, stigma, and conspiracy theories among the general people (Islam). In the same study, COVID-19–Related Infodemic and Its Impact on Public Health: A Global Social Media Analysis, it was found that rumors account for 89% of all misinformation reports. Given the purpose of this study, only rumors will be explored further in-depth as the main form of misinformation.

Rumors can be extremely believable as they are often a simple statement or discussion. As rumors are often unverified and unreliable, most social media users do not think to fact check a simple rumor. This can be dangerous because rumors can mask themselves as “credible infection prevention and control strategies and have potentially serious implications if prioritized over evidence-based guidelines,” (Islam). Rumors can both be categorized as misinformation and disinformation depending on nature and intention behind the statement. Some common rumors on social media platforms about the COVID-19 vaccine included: “Vaccine creation was rushed,
so the vaccines may not be safe,” “The mRNA vaccines will alter your DNA,” “The COVID-19 vaccines contain a microchip that can track you,” or that “The vaccine will cause female infertility,” (Benenson). Whether vaccine rumors are driven by political beliefs, anti-vaccination movements, personal opinions, etc. they all stem from the lack of credible and reliable information provided about the COVID-19 vaccine. Even though all of those claims have been proven a myth as of April 2021, December 2020 to March 2021 was a crucial time when fact-checking this information was the most influential time for PR efforts to solve this misinformation problem.

Without a clear public health campaign marketing the COVID-19 vaccine as a positive and beneficial medical advancement, there was too much time for rumors and misinformation to arise and be deemed as real and truthful by society. As individuals began to see rumors on social media it often was the first or most recent news, they heard about the vaccine so they likely trusted it. This entire situation goes to show how PR efforts have been working since the first release of the vaccine in late 2020 to combat false information. However if marketing efforts and a push for a clear COVID-19 public health campaign happened earlier in 2020 it is likely there would not be time for the infodemic to become so influential in shaping public perceptions and opinions. Marketing a COVID-19 health campaign should have been more preventive in answering common falsehoods of vaccines rather than PR having in with a reactive management approach.

**Future Communication Regarding the COVID-19 Vaccine**

As social media platforms and online communication channels have become a more prevalent way of spreading information, it is likely these mediums will continue to be utilized as
the primary way to share information regarding future vaccines. Despite the issues that have come with social media being a key contributor to the spread of misinformation, the PR damage control and strategy on social media can be just as impactful in promoting the vaccine. As many individuals look to these platforms to get their daily news, there has been a recent PR strategy in crafting more personable messages by using influencers.

The Oklahoma City Health Department ran a test of whether social media influencers could reach Oklahoma residents with paid messages, steering them toward behaviors that benefit public health, to find if campaigns that drive on personal stories, emotional appeals, and buzzword authenticity could help eliminate vaccine hesitancy (Tiffany). This method of getting the pro-vaccine message spread shows how counties and cities can approach their vaccine efforts and inform their community. Although there is not enough data from the February 2021 Oklahoma City Influencer experiment to conclude results, it highlights the power messages have on social media. This proves that on a nationwide, state, or county level approach, one way to fight mistrust of the government and health officials could be to utilize individuals that are trusted by society to promote the vaccine. As influencers convey a personable and humanized message, it is still important for their information to be backed by evidence and logic. COVID-19 pro-vaccine messages must be evidence-based for two reasons: it proves credibility and validity of information while also proving other rumors and conspiracy theories wrong.

The WHO’s Increasing Vaccine Model can be used to understand the initial start of vaccine hesitancy and in turn can be used to create strategies to promote the COVID-19 vaccine and address misinformation earlier. This model can give a better idea at what stage influencer marketing should start and when their message will be the most powerful in convincing the public to get the vaccine.
Figure 2. The WHO’s Increasing Vaccine Model shows the different stages of feeling and decision-making an individual goes through before getting vaccinated. This model highlights how motivation is shaped both by what people think and feel about vaccination, and also by social processes that play out in their environment (Kahn, et al.).

Based on this model, future efforts to improve vaccine efforts should include developing a COVID-19 vaccine promotion campaign and building an evidence base for effective strategies for COVID-19 vaccine promotion and acceptance (Kahn, et al.). What we have seen throughout this analysis is that it comes down to motivation and if there is no local, state, or nationwide push for the COVID-19 vaccine it is likely motivations are low. Having a clear call to action for these different entities is a great initiative to start building out campaigns and working to promote the COVID-19 vaccine. Here are the call to action statements made by the WHO to combat COVID-19 vaccine hesitancy (Managing the COVID-19 Infodemic):

- “We call on Member States to develop and implement action plans to manage the infodemic by promoting the timely dissemination of accurate information, based on science and evidence, to all communities, and in particular high-risk groups;
and preventing the spread, and combating, mis- and disinformation while respecting freedom of expression.”

- “We urge Member States to engage and listen to their communities as they develop their national action plans, and to empower communities to develop solutions and resilience against mis- and disinformation.”

- “We further call on all other stakeholders - including the media and social media platforms through which mis- and disinformation are disseminated, researchers and technologists who can design and build effective strategies and tools to respond to the infodemic, civil society leaders and influencers - to collaborate with the UN system, with Member States and with each other, and to further strengthen their actions to disseminate accurate information and prevent the spread of mis- and disinformation.”

As stated before, this shows that the push should have started sooner. This entails breaking down the difference between the three of the vaccines (like shown from the Business Insider article), results from the clinical trials, when will different vaccines be accessible and to who, etc. The Increasing Vaccine Model alludes to how a marketing campaign should have been developed and launched before the release of each vaccine that way external sources of information are not as impactful in influencing what people think and feel. All in all, the pro COVID-19 vaccine influence marketing and PR messages have is extremely powerful and needs to be utilized. The uncertainty of this pandemic, rush to distribute the new vaccines, and influence of messages on media platforms will better prepare professional communicators and public health professionals in creating future pro-vaccine campaigns.
Chapter 3

Methodology

This chapter explains the methods of data collection expanding upon the data sources, interview participants, interview design, and limitations of the study.

Data Sources

For this study, Cal Poly professors from the relative communications, marketing, or PR fields were interviewed. All participants answered the same series of questions regarding the role these industries play in combating vaccine hesitancy and the spread of misinformation. Additional data will come from research.

Participants

Interview participants will provide insight for the study in their given field of experience. All participants have their own unique perspective, opinions, and experience in these communication professions during the COVID-19 pandemic. Participant introductions and relative experience will be explored into detail later in Chapter 4.

Interview Design

The following questions were given to each participant, with edits and additions based on each source’s professional experience and field. The questions were focused on the study’s three research questions to further understand the role marketing and PR play in combating vaccine hesitancy and the spread of misinformation. The answers will further explain how important these communication fields are in working together to develop a public health campaign for the
COVID-19 vaccine, and identify future initiatives to decrease vaccine hesitancy with limiting the spread of misinformation.

**Questions**

1. How would you, an expert in your field, determine the importance marketing, PR professionals and other communication professionals play in combating vaccine hesitancy?
2. What are key elements in planning pro-vaccine communications and campaigns?
3. How would you build confidence and increase the willingness for individuals to get the vaccine on social media platforms?
4. How has the lack of a clear public health campaign for the COVID-19 vaccine and rise of misinformation on social media platforms influenced public perception of the vaccine?
5. In regard to the WHO’s Increasing Vaccine Model, which step do you believe is the most important for marketing and PR vaccine promotion to begin?
6. How much of an impact do you think misinformation and the COVID-19 infodemic has impacted the public’s perceptions on the vaccine?
7. To what extent is it the responsibility of marketing and PR professionals to craft and promote the COVID-19 public health campaigns?
8. What social media platforms and online communication channels have you seen the most prominent in spreading misinformation?
9. What do you believe is the most efficient and effective way to address misinformation on social media platforms and promote pro-vaccine messaging?
10. How can confirmation bias and opinion leader theory have an impact on vaccine perceptions on social media?

11. How can the COVID-19 infodemic be a learning experience for future public health communications?

**Data Collection**

The data collection methodology for this study will be done in four separate Zoom interviews, one time designated for each participant. All interviews were done in May 2021. Given the current nature of the COVID-19 pandemic, all interviews will have to be done virtually. The interviews will ask both general questions and personal opinions about the role of marketing and PR in combating vaccine hesitancy and the spread of misinformation on social media.

**Data Presentation**

The data from the interviews will be analyzed together to see if there are any trends or consistency in the participants' beliefs. In Chapter 4, the interview questions will be outlined each with the intent or purpose of asking the question and relative responses from the participants. Since the interviews will be done virtually over Zoom the entirety of the interview will be recorded to ensure accuracy and authenticity of the statements documented for each participant. Responses will be paraphrased answers given the flexible and flowing nature of the interviews.
Limitations

There are limitations in this research study based on the time available. The project abides by the California Polytechnic State University, San Luis Obispo quarter system, which is ten weeks long for each quarter. This study is also being completed during the time of being a full-time college student. Furthermore, given the study is being completed during the early 2021 phase of the COVID-19 vaccine rollout there is limited research and prior information on the topic.

Delimitations

There are limitations to this study based on the interviews collected throughout the research process. With the time constraint and in-person interview limitations, it was not possible to coordinate interviews with other professors at Cal Poly in other colleges or departments outside of Business, Journalism, and Communication Studies. Interview participants were also selected based on my perception of their experience in the field and knowledge on the topic.
Chapter 4

Data Analysis

This chapter will provide insights to the interview participants' answers to the questionnaire. Each participant was asked the same question, however given the length of this study, time constraint in completing it, and each participants' field of expertise, only answers from two participants will be documented for each question. The data will be presented as paraphrased responses under the relative question from the questionnaire. Furthermore, part of the analysis, research data from online articles and peer-reviewed journals will also be included to answer the research questions listed in Chapter 1.

When reviewing the data, it is important to keep in mind this study presented the opinions of knowledgeable and experienced individuals in the related fields, and incorporated a review of literature on the topic, so it cannot be determined as a universal agreement in how professional communicators should act or do their job regarding pro-vaccine communications. The opinions and recommendations provided in the interviews cannot be applied to all individuals and professionals in their relative communications field.

Description of Participating Experts in Related Fields

Communication Studies

Dr. Lauren Kolodziejski is an associate professor in the communication studies department at Cal Poly. Her research focuses on rhetoric’s of expertise, and this is how she got into studying vaccine attitudes and vaccine expression. Her study started by examining the ongoing public debate about a possible link between vaccinations and autism. This has led her to further examine vaccine hesitancy more broadly to understand where people get their vaccine
information, what they think about when making these decisions, how their decisions are influenced, and who they talk to about vaccines.

**Marketing**

Dr. T.J. Weber is an assistant professor of Marketing at Cal Poly. He has experience working in politics and researching. His interest in vaccination attitudes and perceptions came out when he was working on a special edition piece in the Journal of Advertising when he was in graduate school at Washington State University. Weber began noticing a relationship between user generated content online in influencing public opinions and perceptions. He found anonymous comments online were more influential than over hard, scientific facts, so he wanted to further explore this in terms of vaccination and how to overcome this issue of misinformation on social media influencing vaccine hesitation.

**Misinformation**

Kim Bisheff has been professor in the journalism department at Cal Poly since 2004. Prior to teaching, she worked at the L.A. Times and at Outside magazine. After the 2016 election she became interested in researching misinformation and understanding its impact on social media. The more she learned about the impact of misinformation she felt a sense of urgency to teach media literacy concepts both at Cal Poly and in the San Luis Obispo community.

**Public Relations**

Dr. Yan Shan has been a professor in the journalism department at Cal Poly since 2016. She teaches courses in the areas of public relations, social media communications, integrated
marketing communications, and advertising. She has an extensive list of published peer-reviewed articles and one book in which her studies examine the impact emerging communication technologies have on attitude and behavior. She recently became interested in how misinformation on social media influences vaccine opinions as social media is an emerging messaging platform.

**Presentation of Interview Data**

1. *How would you, an expert in your field, determine the importance marketing, PR, and other communication professionals play in combating vaccine hesitancy?*

   - Question 1 was asked to gain insight into how the participants, in their respective field, define each profession's role in strategically planning communications to decrease vaccine hesitation. This question was designed to get a general idea of how each participant feels the importance their industry has in supporting public health communications and addressing misinformation spreading on social media.

   - Kim Bisheff (KB): From a marketing perspective, these professionals play a huge role in combating vaccine hesitancy because they are not only promoting the vaccine, but they are also there to answer questions. People in public health communication’s role is limited because they are oftentimes seen as government communications telling you what to do by vaccine hesitant communities. Therefore, when marketers not associated with institutionalized communications are seen as credible and knowledgeable by the public their messaging can be very influential.

   - Dr. Yan Shan (YS): PR has a pretty profound impact in how communication impacts public perception in terms of vaccines. You have to look at the role of public perception
in terms of this entire pandemic, and even before COVID, in how PR practices influence vaccine perceptions. Early media coverage of the vaccine did not cover the full picture, it only focused on stories that evoked fear and other negative emotion, so this is where PR professionals need to step in and combat that hesitancy. PR professionals play an important role in communicating with compassion, empathy, and acknowledging the public’s concerns. In this sense, PR must work to recognize what is driving people’s perceptions and hesitations in order to have their messaging appeal to emotions. By reinforcing the truth with honest and genuine appeals, this will motivate people to get the vaccine.

2. What are key elements in planning vaccine communications and campaigns?

- Question 2 was designed to learn about the different tactics and strategies the participants would recommend in crafting a pro-vaccine campaign. Strategic planning and messaging is an important step in any campaign and this question gives an idea of how it would be done in this specific scenario.

- Dr. Lauren Kolodziejski (LK): The more you can localize the message and campaign the better. A key tactic would be to tap into the different shared community values or shared community identities and promote the vaccine as a means of getting back to that community you once were. Highlighting personal benefits is another key element in vaccine campaigns because for a lot of people this is a personal decision. This can be a challenge since most current campaigns are aimed at herd immunity and keeping the public healthy. If people don’t feel a direct risk or motivation to act they may not. This is
where the significance of social media channels come in to communicate that message because it feels more personalized and humanized.

- YS: Researching your community or target market and identifying their concerns, perceptions, and beliefs is a key element in planning pro-vaccine communications. From a PR perspective it can be more beneficial to listen than to talk. A lot of times taking the time to hear what people have to say will often steer the messaging in the right direction. This is a great way to plan the campaign agenda in both a proactive and reactive manner. Social media has become a prominent information channel so also identifying which platforms can provide the largest reach for your target audience is a crucial planning step.

3. How would you build confidence and increase the willingness for individuals to get the vaccine on social media platforms?

- Question 3 alludes to the emotional appeal used in marketing and PR campaigns to learn what emotions or motivations could be used to promote the COVID-19 vaccine. This question was asked in relation to Research Question 1 about how trust and confidence are established in vaccine marketing campaigns.

- KB: Total transparency in communications can be a very big factor in building confidence in vaccines and motivating people to get the COVID vaccine. Given the fact that this is a new virus, a new situation that both public health officials and professional communicators are dealing with, and all of the unknown science could not give immediate answers to, it is important to admit we don’t have the answers yet. It’s a terrible information environment we are in but building confidence in the trusted sources and experts until definitive answers are made would be one of the first steps. Even if
clear, consistent messages can’t be provided there is the fundamental trust and relationship that can be built on social media platforms by answering questions and addressing misinformation so that when the information is accessible the confidence in its validity and reliability is already there. It can be more impactful to admit we don’t know something rather than to ignore it.

● LK: Building confidence and increasing wellness is all based on trust. Trust in who is delivering the message on social media. Taking that pre-established trust by using people who have sway in a community to help answer questions and reassure people and then transfer that trust to the vaccine. This is extremely important in communities of color where there is a lot of legitimate and valid hesitancy. Unfortunately, in this instance and given the influence social media has on communications, having one public health campaign may not address specific risks and hesitations. It’s more about creating trust in a larger system, not just the vaccine.

4. How has the lack of a clear public health campaign for the COVID-19 vaccine and rise of misinformation on social media platforms influenced public perception of the vaccine?

● Question 4 addresses the current online nature of information regarding the COVID-19 vaccine and was created to determine how influential messages, specifically those about falsehoods and rumors about the vaccine, can be on social media.

● Dr. T.J. Weber (TJ): The lack of a clear public health campaign comes from the struggle of finding credible sources to speak about the vaccine. You could even go a bit further with this and research the guidance throughout the entire pandemic. The information provided by the previous administration did not make sense because not only was it not
scientifically accurate, but it did not communicate what scientists were finding. It can be hard in a new environment like this because the only constant is change so it can be hard to get to a uniform messaging. Everything was blown up by time and the media and this makes it hard to convince a lot of people who have been exposed to the misinformation. That being said, misinformation has had a great impact on the public’s COVID vaccine perceptions simply because it’s the information constantly repeated and accessible.

- YS: Misinformation often becomes amplified on social media and messages can be very influential in shaping public perceptions of the vaccine. At the beginning of the pandemic and starting of the vaccine rollout, there was a lack of public information and a lot of the guidelines that were provided were confusing and even contradicting. This battle of mixed-messaging and the lack of a clear public health campaign created this antispase where rumors and misinformation became prominent. Distrust and confusion are two reasons hesitancy has risen and with the community aspect of social media we look for those shared experiences and answers from people we trust, whether the information they share is true or not.

5. In regard to the WHO’s Increasing Vaccine Model, which step do you believe is the most important for marketing and PR vaccine promotion to begin?

- Question 5 was asked about Figure 2, from Chapter 2, to determine at which point in the WHO’s vaccine model communications are proactive and reactive. This question was designed to give insight to see what stage(s) a call-to-action campaign would be the most effective. This question was designed to have no right or wrong answer but rather gather the opinions of participants and see if there is any general trend or consensus.
• KB: The earlier the better because the more people are allowed to build on their concerns, they can fill in information gaps with misinformation and likely they are to become unmanageable in their fears or beliefs. The “What people think and feel” and “Social processes” steps at the very beginning is where the proactive vaccine communications should be starting. This is the hardest step to break those hesitancy barriers because this is where people have the majority of the questions about the vaccine and where details need to be broken down. Data and statistics can be very powerful tools in these stages to start vaccine promotion.

• YS: The Increasing Vaccine Model can be great for communicators to understand the thought process people go through. There are so many parts that play into getting a vaccine and communicators must address different concerns at the different stages, however the “Motivation” step could be the best place to target vaccine hesitancy. Past the initial stages, there are a lot of people who may see the vaccine as a good thing but not feel the call to action to get it themselves. PR can come into play here to communicate to your audience about incentives, both internal and external. PR can also be great to work with the local community and resources to work out different incentives and solve any practical issues.

6. How much of an impact do you think misinformation and the COVID-19 infodemic has impacted the public’s perceptions on the vaccine?

• Question 6 was designed to learn the interview participant’s opinion, thoughts, and personal experience seeing COVID-19 vaccine misinformation on social media. Given
their experience in their relative career field this builds upon the idea of how influential misinformation can be in influencing public perception on social media.

- KB: Misinformation on social media is hugely effective in influencing public perceptions of the COVID-19 vaccine. It was recently found that 68% get their news from social media. This also raises concern that on the one universal source of communication, that ironically has no gatekeeper, what type and kinds of information is being shared and we are being exposed to. Algorithms on these platforms are designed to reinforce our existing beliefs can lead to little diversity of opinion and further make misinformation more powerful.

- LK: As humans most of our decisions are based on emotion and the misinformation stories oftentimes appeal to strong emotions like fear and anger. The media tends to cover stories like this more frequently because it is what the public is interested in reading, however we start to emphasize emotion over information. The entire COVID experience has been emotional, especially since a lot of the questions driving the misinformation are simply things science won’t be able to answer for us. We won’t know the long-term effects of the vaccine at the current moment and when there is no information based response at this point people look to misinformation for some sort of answer. This is why misinformation on social media is so influential in shaping public perceptions and opinions of the vaccine.
7. **To what extent is it the responsibility of marketing and PR professionals to craft and promote COVID-19 public health campaigns?**

- Question 7 was asked to get an overall estimate of how each interview participant believes public health communications should be handled by marketing and PR professionals. The purpose is to get an idea of who should be delivering the pro-vaccine messaging and addressing misinformation.

- TW: Marketing is everywhere and professionals in this field regardless of doing research at the academic level, working at the commercial level, etc. have a huge responsibility to craft and promote COVID-19 public health campaigns. Marketing is a field with some of the most effective communicators of information so they must capitalize on this ability in a time like this when spreading reliable messages is so important. However, it can be tricky because public health officials are in charge of these campaigns, not marketers. That being said, marketers should be working with public health officials to promote the vaccine and use scientific data to combat misinformation.

- YS: PR professionals play a critical role in promoting the vaccine because they tell the story. Storytelling can be very impactful in humanizing messages and making them more impactful because the public sees them as relatable. It is not necessarily their responsibility to craft the message, but they are responsible for delivering the message and providing the knowledge for individuals to make vaccine decisions. It is also important that PR and marketing professionals work together in a time like this because together their efforts can be that much more impactful and widespread.
8. What social media platforms and online communication channels have you seen the most prominent in spreading misinformation?

- Question 8 is similar to Question 6 in that it is aimed to interview participant’s opinion, thoughts, and personal experience regarding on which social media platforms have they seen the most COVID-19 misinformation and which specific platforms they think are the most prominent or responsible for spreading misinformation.

- KB: Facebook and YouTube are two news heavy platforms where I have seen misinformation extremely prevalent regarding the COVID-19 vaccine. These platform’s algorithms are choosing our news for us, and we need to get rid of this inherent trust of information that comes to us because it is likely reinforcing our current beliefs whether true or not. Any initial uncertainty of information is quickly filled in with the scared and angry reactions which drive the hesitancy. In a time like this with a lot of unknowns, we try to rationalize what we can and tend to latch onto any information we have access to.

- TW: Facebook can be a very influential platform because as humans we trust people that are similar to you, and you make credibility assumptions based on that similarity. In a study I was a part where we asked the question, “How does user generated content on marketing content affect people’s views when it’s trying to persuade them?” In the study we found that those commenters are two to three more powerful persuasively as CDC public service announcements in regard to vaccine information. This goes to show since the ecosystem of these social media platforms, like Facebook, connects you based on that similarity and for some reason anonymous people are always seen as more credible which can be extremely dangerous regarding spreading misinformation.
9. What do you believe is the most efficient and effective way to address misinformation on social media platforms and promote pro-vaccine messaging?

- Question 9 was asked to help answer Research Question 3 about strategies communication professionals can use to address misinformation and craft pro-vaccine messaging. The question was intended to dial in the general nature of the research question and give insight to specific key strategies.

- KB: Repetition of the truth and scientific data is a very impactful way to both address misinformation and promote the vaccine. On social media platforms consistent repetition is especially efficient and effective because the more familiar information becomes to us the more, we begin to trust and believe it. There also is a tactic called the “Truth Sandwich” that can be used on social media where messaging starts with the truth, explains the false claim, and closes with a statement by addressing the misinformation and proving it is not true.

- LK: An effective way to address misinformation is to not ignore the risk and hesitancy people may have because that will put them off by dismissing concerns. Most people want to return to their lives before COVID and finding the transcendence to move past this moment and having vaccines as our best bet in doing that is a way to promote pro-vaccine messaging. An emotional appeal here could be great to positively get people excited about the future and hope to return back to work and schools. Effective emotional appeals need to be plausible and within the realm of reality. This could be a great path forward in terms of how to motivate people to get the vaccine and overpower hesitancies created from misinformation.
10. How can confirmation bias and opinion leader theory have an impact on vaccine perceptions through social media?

- Question 10 is based on the Communication Theories section of the literature review to see if there are any patterns or trends in which the interview participants view these theories enacted on social media regarding how vaccine hesitancies are developed.
- LK: Social media communications in relation to opinion leader theory has more positives than negatives. Opinion leaders are oftentimes the ones in the community who in way are the boots on the ground doing the word-of-mouth marketing. You want to find those key leaders who already have the pre-reestablished trust in which their promotion will have this cascading effect to influence others around them. Again, reiterating that the message has to come from someone people trust and essentially create that tipping point, motivating people to get the vaccine. On the other hand, confirmation bias can be a real problem on social media because algorithms can create this echo chamber of information we exist in reinforcing our beliefs. Even though valid and true information can be out there, it can only be effective if people see it. Oftentimes only the compelling stories are amplified on social media, and this can skew our perception of the actuality of the situation.
- TW: The primary theory of marketing explains the two routes we process information, first the central route, very logical and rational, and second peripheral, based on attractiveness and similarity. In regard to confirmation bias, when people process information it most of the time is peripheral. Cultural, societal, and political values can all be reinforced by those in our in-group instead of outside sources like the CDC and doctors. This also is relative to scientific literacy in that the education level of an
individual can influence the susceptibility to confirmation bias and believing misinformation.

11. How can the COVID-19 infodemic be a learning experience for future public health communications?

- Question 11 concluded the interview in a futuristic approach in learning the recommendation interview participants had for moving forward with COVID-19 vaccine messaging. There is no right or wrong answer here, more of a way to wrap up the conversation summarizing what has happened and what the key takeaways are from this experience for professional communicators.

- LK: This can be a learning experience for future public health communications to understand how increasingly difficult it is for communicators to reach their audience without interference from other sources. Especially on social media platforms and digital media coverage in general, this infodemic has really shown how complicated communication is. People may know the information they are receiving is from a really limited viewpoint, however many may not know how to act on it so focusing more on media literacy in the future engaging in these spaces. Influences of interpersonal networks, on social media or in-person, is always going to be a prominent source of information so the lesson to be learned here is how to collaborate with the places people will turn more readily for information.

- TW: The economic value of returning to a normal world should be a key factor in driving public health communications in motivating people to get the vaccine. Decisions should be made to benefit the public, and this can be done by making sure the communication
comes with incentives. On social media platforms, this can be a very powerful tool to
fight misinformation and a strategic way to craft future public health communications.
Furthermore, for professional communicators, this has been an important lesson in
understanding how people get so stuck in their identity and can't see through it and take
into account any information that is identity inconsistent. If identities cannot be
decoupled from beliefs, then there needs to be some sort of external motivation or
incentive to get the vaccine.

**Research Question Data**

1. *How are trust and confidence established in vaccine marketing campaigns?*

   - Forming partnerships with community organizations can be a way to gain the trust of
targeted individuals as, “These organizations are close to their audiences; know how to
tailor information to those audiences effectively; and, most important, have trusted
leaders who can be effective spokespersons,” (Brunson, et al.).

   - In regard to confidence, there are five principles for effective risk communication that
can be used to outline strategies in this instance: Do not wait, Be credible, Be clear,
Express empathy and show respect, Acknowledge uncertainty and manage expectations
(Brunson, et al.).

   - “Work within worldviews, identities, and moral values—each of us has a unique set of
identities, worldviews and moral values. These influence our choices and behaviors, and
even what we believe to be true. Rather than investing time into messages to try to
convince people otherwise, it’s worthwhile to understand what others see as right and
wrong and to connect with what’s most important to them. Find the common ground
between what we hope to achieve and what matters to them,” (A Practitioner's Guide to the Principles of COVID-19 Vaccine Communications).

2. How do you increase the willingness for individuals to get the vaccine on social media platforms?

- Communication must be tailored for specific audiences as, “It’s not one size fits all,” according to Tina McCorkindale in the IPR [Institute for Public Relations] Webinar: How Communicators Can Navigate the COVID-19 Vaccine. Communicators must have a motivating and unifying approach in stating, “We are all in this together helping others and there’s language you have to use to show it [the COVID-19 vaccine] protects themselves but it also protects others,” (McCorkindale). It was also noted that, “Great work must be done in both behavioral sciences and behavior economics that can help steer people to the proper messaging and how to best test messages to see what is effective,” (McCorkindale).

- “Telling stories and not statistics...in telling stories of those who were impacted by the vaccine and how people have been affected by COVID,” (McCorkindale). She pointed out this was one of the reasons why the anti-vaccine movement has been very successful because they are able to tell these very emotionally connected stories that have an impact on the public’s perception.

- “Tap into hope, pride and parental love to motivate people to act and affirm their positive sense of self,” (A Practitioner's Guide to the Principles of COVID-19 Vaccine Communications).
3. **What are some strategies for communication professionals to address misinformation?**

- **Avoid dismissing concern:** “Ensuring that people feel heard— not dismissing their concerns— is important because if people don't feel heard, they are unlikely to listen. Instead, effective communications require listening to people’s concerns, rephrasing and restating those concerns, and presenting relevant information with empathy,” (Brunson, et al.).

- **Acknowledge uncertainty:** “During a pandemic, what is and is not known changes constantly, and policy and programs change accordingly. Even now, as the vaccine rollout continues, some people interpret the changes in dose availability and allocation and priority groups as signs of incompetence or mistakes on the part of the government of scientists,” (Brunson, et al.).

- **Tina McCorkindale in her webinar recommended communicators to encourage inoculating people against misinformation which is called the Inoculation Theory. This theory she defined as a communicatory you, “Expose some of the fallacies and arguments prior to people hearing about them to inoculate people against misinformation...so preparing people for what they may hear in terms or misinformation without giving acpedics as to what that misinformation may be.”**
Chapter 5

Discussion and Recommendations

Summary

This study’s purpose was to highlight the important role marketing, PR, and other communications professionals play in combating vaccine hesitancy and the spread of misinformation on social media. The current infodemic has created an unknown and ever changing communication environment online in which professional communicators need to navigate correctly in order to spread public health official’s messages and decrease the impact of misinformation on public vaccine perceptions. In regard to the COVID-19 vaccine, user-generated content has been extremely prevalent in spreading rumors or falsehoods about the vaccine. The nature of these online communication platforms can be both beneficial and harmful in a time like this, so it is important to analyze the roles these communication professionals have in helping promote vaccines and dispute misinformation.

Discussion

After analyzing the data collected from the interview responses of Cal Poly professors with credible experience in their relative field, and the literature reviewed, the three original research questions are now able to be answered.

1. How are trust and confidence established in vaccine marketing campaigns?

Different tactics and strategies to build confidence and trust in vaccine marketing campaigns are the most efficient at the local, community levels. It is important for marketing, PR, and other communications professionals to address the urgent questions, concerns and
hesitations of each community because it makes the message resonate better with the audience. Tailoring and targeting the message to reach a specific audience demographic builds trusts too.

Trust mainly comes from who is delivering the message. This can be a challenge for marketing professionals because individuals working in public health are reliable sources of information, but oftentimes are associated with the government. The rise and influence of social media messaging has also turned society to look towards localized news sources for information. This goes to show that communication goes beyond marketing and PR professionals. Although these professionals can play a significant role in crafting and distributing messages, everyone has a role to play in converting vaccine hesitancy to acceptance.

These strategies can be hard to abide by when the only consistent thing during the pandemic has been change. However, as misinformation rises and opinions are formulated, communication professionals should have been proactive in recognizing concerns from prior vaccine distribution and start that consistent messaging early on.

At the end of the day deciding to get vaccinated is a personal decision so in order to build confidence in that decision, there needs to be a certain motivation and reassurance in making that decision. As with building trust, communicators must be honest, transparent, and genuine because this helps people change their attitude and perceptions.

2. How do you increase the willingness for individuals to get the vaccine on social media platforms?

To increase the willingness for individuals to get the COVID-19 vaccine, the messaging on social media must come from sources they trust. As noted earlier, sources must be similar, reliable, and authentic in order to help promote the vaccine. This is where community leaders
and influencers come in. Furthering the conversation of disinhibition, if people do not feel a responsibility or need to respond to any issue they will not act on it so if they don’t feel messaging is relative to them, they likely will not listen. This also works really well because the stories from leaders and influencers are humanized and resonate much better with the target audience. From a marketing standpoint, this likely is one of the most effective and impactful ways to promote the vaccine on social media platforms.

Another way to increase the desire of individuals to get vaccinated is to visually show data of how many individuals are vaccinated. Using graphics and data on social media is one of the most effective ways to convey this message. If people are in-grouped based on their vaccine status, individuals who do not identify with that group may feel motivated to get vaccinated since many other people are. This results in both internal and external incentives to get vaccinated.

Going back to the familiarity concept, for example as if you were to show how many individuals living on Cal Poly’s campus have been vaccinated and it is 1 in 3 this creates a sense of normality and reassurance in getting the vaccine and therefore more students will likely get the vaccine.

3. **What are some strategies for communication professionals to address misinformation?**

The first strategy for communication professionals to address misinformation would be to craft a consistent message. Especially on social media a lot of this conversation could happen in comment sections which anyone could view. It's important to make sure responses follow some sort of guideline or format. Communicators should reply to the false claims with an introduction, acknowledgement of the claim, and redirect to a credible source. Having a clear response and
doing so in a timely manner are very important strategies for communicators when addressing misinformation on social media platforms.

The second strategy is to be transparent and honest. Even if at the current moment there is no scientific or factual data to prove the misinformation is false, other resources should be shared to back claims. Transparency also can help eliminate biased information in that it helps maintain the objectivity of the message. Most misinformation comes from biased standpoints and beliefs so neutrally addressing misinformation will shoot it down quickly rather than fuel the argument from the opposition. Trust comes from authentic messaging and this is the key to making sure your audience is receptive to your information.

The third strategy is to back pro-vaccine claims and combat misinformation with hard, scientific data. Data-driven claims are difficult to argue with, including evidence, facts, statistics, etc. absolutely matter when addressing misinformation to prove it is untrue. Universal truths cannot be argued with or let alone proven to be false by misinformation. This also appeals to a logos argument in which it is based on a sense of logic or reason. However, it is important that when conveying this information it does not come across as condescending but rather you are empathetic and genuine.

Recommendations for Practice

Importance of Being Proactive and Reactive in Vaccine Communications

As explored with the WHO’s Increasing Vaccine Model, vaccine communications need to be both proactive and reactive. This can be a challenge for marketing, PR, and other professional communicators because no matter how much messaging can be strategically planned, the nature of online communication platforms makes it a constantly changing environment.
Proactive communications likely will be led by public health officials in answering common questions that arise with vaccines. Sure, not all questions can be answered in the beginning of vaccine development, but it is important to admit to not having all the information at that current moment and reassure any concern by committing to providing answers when available. These questions can come from any issues that arise when vaccine distribution and development start and oftentimes can reflect previous concerns when the influenza vaccine, H1N1, etc. were first created and distributed. These precedents give a good idea to indicate what information the public wants and needs to know in order to feel confident enough to get the vaccine. Answering these questions right off the bat is a great way to limit the impact misinformation will have on the public’s perception. This also gives users on social media a direction in who to look for reliable information. Proactive communications can be as simple as acknowledging questions and reinforcing recent vaccine updates.

On the other hand, reactive communications are inevitable. No matter how much planning and messaging is released there are going to be new issues and concerns that arise, so it is important to be flexible with communications. Responses should be consistent especially on social media platforms. As stated earlier, being prepared for the unknown but also being adaptive and ready to respond to new concerns in a timely manner is not an easy job for professional communicators, but it is something to work towards in the future.

National Level Message Reinforced at State, County, and Local Levels

It is impossible to have one campaign promoting the COVID-19 vaccine that will target everyone in the United States and motivate people to get vaccinated. Although a message cannot be completed uniform throughout the country, there can be a one general idea which is then
specified to specific areas. The structure to this is similar to a tree map in that there is the general overarching idea and different branches stem off in which the messaging is tailored differently and each time a little more specific.

One idea to have a similar message throughout our country would be to promote herd immunity and personal benefits. This national level message will cover how the vaccine is currently our best option in returning to normal in a timely manner and briefly discuss the personal benefits we are already seeing implemented like going to back the office full-time, being able to walk around without a mask, kids can be in schools without social distancing or half virtual lesson, indoor dining will open, etc. This message would be promoted by someone like the President or individuals associated with the House or Senate. Then at the state levels this same message will be reinforced by the governors and at the county levels by their specific public health offices. Finally, and likely the most impactful is the local level because personal benefits can be specific to things their community wants. For example, a certain restaurant, local concert venue, and other community events that individuals can personally feel the impact will help influence their opinion. The local level is also a great place to have influencers and other familiar members in a community promote the message.

Having the reinforcement of the overarching message is a great way to show consistency throughout the nation. No matter where someone lives, if they see the same message being promoted to other places it likely will resonate better with them. Even regarding misinformation, the repetition in this scenario will drown out the rumors and false claims on social media platforms and other online communication channels. This is the closest way professional communicators can work with public health officials to have “one” message promoting the vaccine.
Media, Science, and Health Literacy

According to the 2020 U.S. Media Literacy Policy Report, “Media literacy encompasses consumption and production of media and digital products and communication technology of all kinds, and is defined as the ability to access, analyze, evaluate, create and take action with all forms of communication, and encompasses the foundational skills of digital citizenship and internet safety including the norms of appropriate, responsible, ethical, and healthy behavior, and cyberbullying prevention.” As proven throughout this study, the entire COVID-19 pandemic has been accompanied by an infodemic as misinformation has flourished on social media platforms as well as other online communication channels. This is what makes media literacy so important. Social media can be dangerous in influencing public perception during a pandemic because anyone can post anything about the COVID-19 vaccine whether it is a fact, opinion, perception, belief, etc. There starts to raise concern of confirmation bias when individuals only see information that they agree with on social media because they may not be seeing the truth. Confusion and uncertainty about the COVID-19 vaccine has generated a lot of rumors and conspiracies online which has made vaccine hesitancy a prominent issue for communication professionals and public health entities to fight. Teaching media literacy during this time is extremely important because people can fact check where they are getting their information and determine opinions on their own with external influences or pressures. Media literacy can be an important lesson to review at any age as online communication channels are constantly advancing. All in all, vaccine hesitancy can be driven by the belief and exposure to misinformation, so it is important for individuals to learn how to identify when they are viewing false information.
Science literacy is also a crucial lesson because as long as some individuals do not understand the science behind vaccines, hesitancy will always be prevalent. Having the tools and resources to make informed decisions about our own health as well as the public’s overall health and wellbeing is a fundamental key in scientific literacy. The COVID-19 vaccine being an entirely new scientific invention should without a doubt raise questions and concerns about science, however, scientific literacy, “Encourages constantly seeking to know more, as well as a willingness to embrace revision as what is known one day is replaced with something quite different and provides approaches for sorting through and selecting among competing alternatives,” (Maienschein). It's important to recognize that individuals are not in the wrong for asking more questions and being confused about vaccine development and distribution. For professional communicators, providing clear and consistent answers to those questions is one way to limit the influence misinformation has on public perception of the COVID-19 vaccine.

Health literacy is the final lesson as, “Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information needed to make appropriate health decisions,” (“Health Literacy”). This is another important concept because health literacy can be tricky to understand because there is no one universal understanding or experience of this concept. There are demographic roadblocks that impact the attitudes and behaviors of a given community. Despite this, the push needs to start somewhere, and this is a great opportunity to educate those about how to make informative decisions for themselves. Another key aspect of health literacy that could be promoted is in terms of public health. Aiming the conversation to not be about someone’s self and how their decisions impact them regarding the overall good of public health, but how their decisions also affect others whether directly or indirectly. Professional communicators can work with doctors, public health officials, and other
medically credible sources to be the spokesperson on this to explain the importance of health literacy and use it as a driving force in a pro-vaccine campaign.

For marketing, PR, and other communication fields these literacies offer great opportunities for informative campaigns. It is important to note that each of these will never be truly mastered and they can be reviewed at any age or stage of someone’s life. However, decreasing a significant population of vaccine hesitant individuals can come down to something as simple as education. These literacies are also important because they set aside political, religious, or personal beliefs. It makes how you get your information online, knowing how vaccines work, and how vaccines benefit the public a less influenced decision since these literacies are based on facts and truth.

**Study Conclusion**

As vaccine hesitancy is not a new phenomenon, and it will always be a concern no matter the case, there will never be one simple way for marketing, PR, and other communications professionals to prevent and combat it. The COVID-19 pandemic has proven to show how social media can be both a beneficial channel to distribute vaccine information and pro-messaging campaigns, while simultaneously anti-vaccination messages can also flourish on social media. The efficient and dynamic nature social media platforms offer in spreading a message, it is no surprise this is where most people look for their news. The entire COVID pandemic has been characterized by change, and social media along with other digital platforms that can intensify the fast spread of information make it an overwhelming communication channel. Overall, this study has shown how important clear and consistent communication is online regarding public health officials' news and messages about the vaccine and although marketing and PR
professionals are not responsible for generating those messages they have a great responsibility to deliver and convey that message to different audiences.
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