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Full Length Research Paper

"It All Goes Back to Trust": A qualitative exploration of extension professionals' perceptions of COVID-19 vaccines in rural Florida

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While urban communities experienced high levels of infection at the onset of the COVID-19 pandemic, rural communities experienced an increase of confirmed cases during the fall months of 2020. Rural Americans were also among the most hesitant to receive the COVID-19 vaccine. The purpose of this study was to explore the perceptions of [State] extension professionals related to the COVID-19 vaccines in rural communities. Qualitative methods were utilized to gather data from extension professionals in rural area of [State], where vaccine uptake was below average. Results revealed frustration with the vaccine process, vaccine norms, and skepticism and mistrust to all be contributing factors to vaccine hesitancy in rural communities. Extension professionals discussed not feeling comfortable discussing topics related to public health with their clientele, citing the topic being outside their expertise. Practical recommendations from this study included utilizing a grassroots approach rather than relying on mass media, providing messages related to the COVID-19 vaccine that focus on education, rather than promotion, and testing new messages before they are disseminated.

Key words: Health communication, extension, vaccines, motivated reasoning, qualitative research.

INTRODUCTION

One of the greatest risks to human health in recent history is emerging infectious diseases, including Lyme disease, Zika, dengue fever, and influenza (Johns Hopkins Medicine, 2021a). Many of these infectious diseases are spread from animals to humans, referred to as zoonotic diseases (Centers for Disease Control and Prevention [CDC], 2021a). Novel coronaviruses are another example of infectious diseases that can be spread by animals. A novel strain of influenza, believed to have been derived from bats, was identified in late 2019

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in Wuhan, China. Of course, this strain of influenza was soon known as COVID-19. By March 2020, COVID-19 had spread to more than 160 countries and a global pandemic was declared (World Health Organization [WHO], 2020).

By September 2021, nearly 20% of worldwide deaths caused by COVID-19 occurred in the United States (Johns Hopkins University and Medicine, 2021b), and some areas of the country faced challenges associated with health equity, including lack of access to proper healthcare or telehealth, that were underscored during the pandemic (CDC, 2021b; Curley, 2020; Ezeah et al., 2020). The COVID-19 pandemic disproportionately affected migrant farmworkers, people of color, and rural communities. While all these groups face unique vulnerabilities, rural communities face challenges associated with lack of access to healthcare and health insurance and a higher rate of chronic health risks, including obesity and heart disease (Glasgow et al., 2004; Ndiaye et al., 2011). Rural communities are also racially and ethnically diverse with more than 20% of rural residents in America being people of color or American Indians and diversity continues to grow in rural populations (Kozhimannil and Henning-Smith, 2018). People of color and American Indians in rural communities face increased challenges associated with health equity due to racism or immigration status. While urban communities experienced high levels of infection at the onset of the pandemic, rural communities experienced an increase of confirmed cases during the fall months of 2020 (Ajilore, 2020). Rural communities were left underprepared, with fewer healthcare providers and limited access to telehealth, as COVID-19 cases increased.

After struggling through the COVID-19 pandemic for nearly a year, an end to the pandemic seemed near when the U.S. Food and Drug Administration (FDA) granted authorization for emergency use of two vaccines in December 2020 and another vaccine in early 2021 (FDA, 2021). As the COVID-19 vaccines were being made available, the American public was making decisions on whether they would receive the COVID-19 vaccine. The idea of vaccine hesitancy has been a topic of discussion long before the COVID-19 pandemic. Vaccines are a crucial tool in combatting infectious diseases and can help quickly control disease outbreaks (Beleche et al., 2021). People will refuse vaccines or feel hesitant about accepting vaccines for several reasons, including the fear of adverse reactions and a lack of trust in public health agencies (Salmon et al., 2015).

A study from the de Beaumont Foundation in late 2020 explored demographic factors that were associated with COVID-19 vaccine hesitancy and found that rural Americans, Blacks, and Republicans were among the most hesitant to receive the vaccine (de Beaumont Foundation, 2021). As of March 2021, 45% of rural Americans indicated they wanted to wait before receiving the vaccine, would only receive the vaccine if they were required to do so by their employer, or would definitely not be receiving the vaccine (Kirzinger et al., 2021). Individuals who refused to receive the COVID-19 vaccine or indicated wanting to wait to receive the vaccine also indicated not receiving the seasonal flu vaccine and not perceiving COVID-19 as a serious threat (Soares et al., 2021). Other factors for refusing the COVID-19 vaccine included a lack of confidence in how the pandemic was addressed and perceptions of inadequate interventions by the government.

Zoonotic diseases and medical interventions for these diseases, such as vaccines, can best be addressed through a One Health approach (CDC, 2018). A One Health approach brings together partners from three main health sectors: animal health, human health, and environmental health. Potential One Health partners may include veterinarians, epidemiologists, or biologists (Baker et al., 2020). Extension professionals also play a key role in addressing disease prevention from a One Health perspective because of the credibility and local cultural knowledge that Extension professionals have in local communities (Braun et al., 2014).

The Extension Committee on Organization and Policy (ECOP) Health and Wellness Task Force was established in 2012 and identified several program priority areas: integrated nutrition, health, environment, and agricultural systems, health literacy, health insurance literacy, chronic disease prevention and management, positive youth development for health, and health policy issues education (Braun et al., 2014). Extension has many assets, including experience addressing nutrition, experience working with 4-H students, and credibility in communities, that can be leveraged to help address the broader topic of public health (Braun and Rodgers, 2018). Action teams were developed and worked toward addressing Extension's role in health and wellness through curriculum development, expansion of partnerships, and applied research (Braun and Rodgers, 2018). The most recent Extension framework for health equity posits effective communication as the first step in promoting health behaviors (Burton et al., 2021). However, it is still unclear how local Extension agents see themselves fitting into this framework and addressing health and wellness challenges on a local level. As such, the researchers of this study aimed to explore how Extension professionals viewed their role when addressing public health challenges.

Theoretical framework

Many theories exist that help explain the formation of opinions. Motivated reasoning (Taber and Lodge, 2006) offers a unique perspective on the role of motivation in the formation of opinions. Motivated reasoning researchers point to two primary motivations in the

formation of opinions and both are goal-oriented. When individuals are motivated by a directional goal, they are motivated to form and maintain opinions that are consistent with existing beliefs and/or social identities. This is also referred to as confirmation bias. When individuals are motivated by an accuracy goal, they are motivated to review and evaluate information presented in such a way that will lead them to an "accurate" belief or opinion. Motivated reasoning is induced by the cognitive dissonance or psychological tension we experience when we are presented with contradictory pieces of information (Festinger, 1957).

Motivated reasoning is further facilitated by the fact that much information is subjective or requires some judgment. No scientific study is perfect, so you can always point to limitations if you want to deny the conclusions. No source is impeccable, and people make mistakes, so perhaps this is one. Different sources say different things, so you can choose to believe the one that reduces your cognitive dissonance (Novella, 2018:52).

Research on motivated reasoning has focused on political opinion formation. Researchers have discovered that the more partisan an individual or an issue, the more directional reasoning tends to take place (Novella, 2018; Taber and Lodge, 2006). Neuroscientists have examined brain activity in individuals being confronted with information that challenges their political beliefs. Through functional magnetic resonance imaging (MRI) imaging of brain activity, scientists have found that individuals actually used different parts of their brain in situations where they are presented with politically neutral information versus partisan information (Kaplan et al., 2016).

Prior to COVID-19, scientists explored motivated reasoning as a framework for understanding vaccine hesitancy (Stekelenburg et al, 2020). Hornsey et al. (2018) examined individuals in 24 countries, measuring antivaccination attitudes. They identified several key effects on antivaccination attitudes, including age, gender, education, political ideology, conspiratorial beliefs, reactance, disgust and an individualism-hierarchy worldview (measured as a continuum).

Researchers are beginning to examine COVID-19 opinions through the lens of motivated reasoning. Sylvester (2021) found overall knowledge of COVID-19 to be influenced by ideology and education level. Much of the media coverage of COVID-19 has been highly polarized, with newspapers even featuring politicians more often than scientists (Hart et al., 2020). Polarization of information impacts how individuals process information (Druckman et al., 2013). According to Sylvester (2021), "Necessary health measures have become politicized and incorporated into a symbol of political identity that individuals want to protect, thereby allowing strong ideological motivations to bias information processing and factual understanding" (14). In the case of COVID-19, this has created massive communication challenges for individuals and organizations seeking to empower citizens to make informed decisions.

Purpose and objectives

The purpose of this study was to explore the perceptions of Florida Extension professionals related to the COVID-19 vaccines in the communities in which they work. The objectives that guided this study were 1) to understand issues related to vaccine hesitancy and access in rural communities, 2) to understand communication related to the COVID-19 vaccine in rural communities, and 3) to explore Extension's perceived role in addressing public health concerns.

METHODS

Qualitative research methods, including one focus group and two interviews, were utilized to address the purpose of this study. Research participants were identified by state Extension administration. The participants were primarily county Extension directors in rural areas of the state. The counties had populations where at least 20% of the population was hesitant and 10% being strongly hesitant to COVID-19 vaccines (Department of Health and Human Services, 2021). The researchers contacted all the potential participants identified by administrators to determine their interest and availability to participate in the focus group. Seven Extension professionals participated in the focus group. Two individuals indicated not wanting to discuss the topic of vaccine hesitancy with a group but were interested in speaking one-on-one with a member of the research team, so individual interviews were conducted with those individuals. Collecting qualitative data through a combination of individual interviews and focus groups is an accepted practice when exploring contentious topics (Michel, 1999), and can sometimes enhance the quality of data collected (Lambert and Loiselle, 2008). A total of nine individuals were included in data collection. The nine individuals represented diverse demographics, including age, race, gender, and Extension specialty areas.

With a state population of over 21 million people, just over 3% of Florida's population is considered rural. An additional 1 million people live in rural segments of the state's urban counties. Even though most of Florida's population is considered urban, rural communities were the focus of this study given the vaccine hesitancy phenomena that was determined in rural communities nationwide. As such, Extension professionals working in rural communities were the subject of this study. For the purpose of this study, Extension professionals are defined as individuals employed by a Cooperative Extension Service. Since the focus of this study was Florida Extension professionals, all participants were specifically employed by the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Extension. All Extension professionals that participated in this study were employed at the county level as county Extension directors or Extension agents. Researchers of this study chose to not disclose the counties where participants were from in order to protect their anonymity.

Researchers who have experience communicating about topics related to agricultural health and safety developed a semi-structured moderator's guide containing open-ended questions for the purpose of this study (Harding, 2013). Items in the semi-structured moderator's guide asked participants to describe their community's perceptions of the COVID-19 vaccine and how the perceptions had

evolved, challenges related to hesitancy and access, communication related to the COVID-19 vaccine, and Extension's role in addressing future public health outbreaks. The moderator's script that was used during data collection included the open-ended questions, as well as information about the rights of participants and consent for the feedback from participants to be used for the purposes of research according to the University of Florida Institutional Review Board (IRB). The moderator's guide was reviewed by an expert panel prior to data collection. The panel had expertise in agricultural communication, Extension, and agricultural health and safety. The moderator's guide was also pilot tested with a group familiar with qualitative research and edits were made to improve clarity.

The focus group and two interviews were conducted in late April 2021 via Zoom and the mean length of the focus group and interviews was one hour. The moderator and a dedicated note taker kept notes throughout the focus group. The moderator was knowledgeable of the topic and the study sample, which allowed for the moderator to naturally pursue the objectives of the study (Kvale and Brinkmann, 2009). A summary of the discussion based on the notes was provided to participants at the end of the focus group, and participants clarified any points of discussion that may have been missed (Lincoln et al, 1985). The interviewer also took notes during the one-on-one interviews and provided a summary of the discussion at the end of the interview. In addition to taking notes, the focus group and interviews were also recorded. Recordings were transcribed verbatim. Transcriptions were used, in addition to the researchers' notes, to analyze the data.

Four researchers involved with the project and focus groups individually coded the data through qualitative thematic analysis. These coders each participated in conducting at least one of the focus groups, so they were all familiar with the protocol and participants. Each coder made notes on themes, highlighting exemplary quotes. Once the coders completed their individual analyses, the results were compiled and examined for overall themes (Creswell, 2007).

Transferability, confirmability, and dependability are important criteria to consider when conducting qualitative research (Guba and Lincoln, 1994). Qualitative studies, like this one, are not meant to be generalizable but are intended to be transferable to other research contexts (Morse, 1994). Thorough details of the data collection methods and data results are provided to ensure transferability. Accuracy and consistency are needed to ensure the confirmability of a qualitative study (Daymon and Holloway, 2002). Confirmability was ensured by including multiple data sources (Guba and Lincoln, 1982). Particular to this study, using a focus group and individual interviews was helpful in this process. The researchers' use of a reflexive journal was used to ensure confirmability and dependability. Reflexive journals are used to track decisions made throughout the data collection and analysis process.

RESULTS

Issues related to vaccine hesitancy and access in rural communities

Extension professionals discussed several challenges associated with hesitancy and access related to the COVID-19 vaccine in rural communities, including frustration with the vaccine process, vaccine norms, and skepticism and mistrust.

Extension professionals shared personal frustrations with the vaccine process, especially when it was first made available, and frustrations they had heard from community members. One participant said, "I know on a personal basis, it was like, 'I've waited all this time, and now I can't get a vaccine because I can't get an appointment.'" Another participant said, "I do know from just some people that I know that so many places were requiring online appointments, anybody that was not comfortable using a computer or scheduling those appointments online, that was definitely a barrier." One participant also explained transportation as a physical challenge associated with access, especially when residents have to receive two doses of the vaccine:

I think the Johnson and Johnson became a big thing, too, even though it had the recalls for the certain things, because it was just one shot versus two. As minute as that sounds—we're talking about the barrier of transportation. Somebody having to get somewhere twice is a lot harder than somebody having to get somewhere once, so taking down that barrier even makes that difference.

Some participants discussed hesitancy toward the COVID-19 vaccine deriving from vaccine norms. One participant said:

I hear people talk a lot about the flu shot and their experience with flu shots and what I hear from people is very similar to how they handle the flu shot. If they get the flu shot, they seem to be getting the COVID shot. If they don't get the flu shot, they're not interested in the COVID shot.

Another participant discussed a local religious group that did not accept medical interventions, including vaccines:

I know, with deep resolve, how they feel about vaccines because [the religious group] has a school that is their school here in this county, and they had an outbreak of measles...I want to say it got up to like 21 cases, and they're still like, 'No vaccines, no anything,' and all these kids are getting pretty bad sick.

Skepticism and distrust were also discussed as reasons for vaccine hesitancy in their communities. One participant explained that it is not about anti-vaccine thoughts, but instead the idea of hesitancy really focuses on the idea of the reality of the pandemic, "You still hear the hesitancy. You still hear conversations that it's – it's not the 'no vaccine' movement. It's still the distrust that the vaccine was ever – or the pandemic was ever real." Participants also explained how COVID-19 vaccine hesitancy was related to perceived vaccine efficacy, "rolling out vaccinations without long-term studies and all those things made me a little bit leery." Participants also discussed mistrust in the government and public agencies, "I think some of the mistrust is government and agencies and universities overall, that mistrust is there. That's just what I hear in the talk." Participants also

discussed historical mistrust from minority populations when making decisions about the vaccine:

It all goes back to trust. Trust in the country, in the nation as a whole. Some historical components in there, things that have been done over the past to certain minority groups. All those things play a factor in people's mind, so I think, like I say, I feel it's getting better, but those things are still out there that may be preventing some people from getting the vaccine.

Communication related to the COVID-19 vaccine in rural communities

Discussion focused on communication related to the COVID-19 vaccine in rural communities primarily related to information fatigue, utilizing faith-based messages, and local sources of information. Several participants discussed how rural residents were burnt out from messages related to COVID-19 and the vaccine. One participant said:

Everybody's just tired of it. We've been bombarded for a year now with everything about COVID, whether it was the fear, the vaccines, or everything. I think that's weighed on some rural folks. They're just done with it. They're over it. They don't want to hear about it. Whether it's the vaccine or safety precautions, everybody's done.

Another participant said, "I know it sounds silly, but I go back to there's been such a deluge of information that I think people has stopped paying attention. They've stopped reading. They don't care anymore." Another participant explained how they provide education about a variety of education on addressing COVID-19 rather than focusing only on vaccines:

I think, in these types of communities, it's better if you give them all their options instead of just focusing on the vaccine, if that makes sense, because, if you just focus on the vaccine, unfortunately, that's the word that they see, and they'll ultimately put up that guard. If they're going to have it that guard goes up and then they pretty much don't hear or see anything after that.

Participants also discussed the role that faith-based messages have had when communicating about the COVID-19 vaccine. One participant said, "In our small rural area, COVID has really disrupted church attendance, but it's still a faith-based area. And I think for some populations in the ag section, if you had church emphasis, you might get some more participants." Another participant explained how food banks at churches may be an effective way to reach people about the vaccine:

I was just thinking a lot of churches have food banks and so although you may not have people going to church, you may have people that are in need or don't have great transportation or other difficulties and challenges. You may have those people coming to your food bank and so it may be an opportunity, whether it's something that's verbal and handed to them; maybe you have something, just some kind of a handout or maybe you have a partnership with somebody that's giving the vaccination itself or maybe the health department. You have food bank pickup on Saturday morning for two hours and you just have that person there giving vaccines, vaccinations. It needs to be easy for people to do it.

Participants also discussed how local sources of information were communicating about the vaccine. One participant explained that local news acted as a gatekeeper of information. "They would have a small article that, 'If you want to be vaccinated,' but it certainly was not a lead story in the county." Participants also described word of mouth as another local source of information. One participant said:

When it comes to rural a community, unfortunately, that's one of the biggest ways to get information out there is the boots-on-the-ground-type approach because a lotta things are through word of mouth in a small community... Word of mouth is how things get out there, how things get knocked down, all that kind of thing.

Extension's perceived role in addressing public health concerns

Participants discussed the perceived role Extension would play in addressing public health. Many participants discussed not feeling comfortable discussing topics related to public health with their clientele. One participant said:

I am not comfortable taking on advocating and working with public health because my plate's already full and the Department of Health here in my county is doing a great job. Just being honest, I think [University] has given us a lot of great material, things to pass out, posters, but as far as being the spokesperson for a pandemic education at this point; I'm not comfortable with that.

Another participant explained that public health was not what they perceived Extension doing. The participant said:

I think sometimes we get to- I understand [University] wanting to be on the cutting edge of things when they come out, but like I said, we need to be careful as it relates to these health issues because that's not what we do in Extension.

That same participant goes on to discuss cons outweighing possible pros. "I can see pros and cons, that

maybe some folks'll be exposed to extension that may have not been before, but just a little leery about trying to jump into everything that come up."

Another participant explained that providing help during a different type of natural disaster was different than providing support during a pandemic. The participant said:

We got to open up a clinic or it is one thing to help with hurricane disaster, but when you talk about pandemics, that's a lot different. I think we just need to make some choices. Let the folks that know about this do it.

Another participant explained what they had been doing related to public health during the pandemic. The participant said, I actually haven't [communicated] so much about the vaccine, but I've been working on a project for treatments for COVID using the monoclonal antibodies.

DISCUSSION

Extension professionals in this study outlined unique issues that could result in vaccine hesitancy in rural communities, including frustration with the process of receiving a vaccine. This frustration was often related to the need to make an online appointment to receive the vaccine during the early stages of vaccine rollout. This was particularly frustrating in rural communities that did not have access to reliable internet (Ezeah et al., 2020). There was also frustration with needing transportation to a location where the vaccine was being delivered. Community transportation, such as city buses, is not available in rural communities, and facilities that may offer the vaccine are geographically spread out, making them difficult to visit (Cyr et al., 2019).

Vaccine norms were also a challenge associated with vaccine hesitancy that participants discussed (Dubé et al., 2013). Participants, who were normally hesitant of other vaccines, including the flu vaccine, would hold on to those same beliefs when making decisions about the COVID-19 vaccine (Jacobson et al., 2015). Skepticism and mistrust were directed at a variety of factors, including government, scientists, and the COVID-19 pandemic. Participants in this study provided insight to many of the communication challenges associated with the COVID-19 vaccine in rural communities and provided approaches that had been successful in their own programs. Research consistently shows that access to more information is not a panacea in addressing vaccine hesitancy (Hornsey et al., 2018). This seems especially true in relation to the COVID-19 vaccine as one of the greatest challenges discussed by participants in this study related to information fatigue. Extension professionals perceived their clients as receiving so much information related to the pandemic and the COVID-19 vaccine they became overwhelmed and ended up rejecting any new information.

Participants shared successful approaches to communicating about health issues in the past were tied to faith-based messages and relied on grassroots approaches.

Extension professionals in this study did not seem keen on participating in public health efforts, despite Extension prioritizing health and wellness and being well-suited to address challenges related to public health (Braun et al., 2014; Braun and Rodgers, 2018; Burton et al., 2021). Most participants felt that engaging in activities related to vaccine awareness went beyond their training. Participants felt that public health was more in the wheelhouse of local departments of health.

Recommendations

This research resulted in many practical recommendations for communicating about the COVID-19 vaccine and other public health topics with rural communities. Communicators in rural communities should rely on a grassroots approach rather than mass media. Relationships with community partners, such as local churches, will be important in this grassroots approach. Messages related to the COVID-19 vaccine and access to the vaccine could be provided at churches or programs hosted by churches, such as food banks. Additionally, messages related to the COVID-19 vaccine should focus on education, rather than promotion so that clients feel like they have a choice in the decision. New messages should also be tested before they are utilized to ensure effectiveness and not add to the information fatigue communities are experiencing. To limit frustration in the future, walk-up clinics should be utilized in rural communities to eliminate confusion related to online appointments.

According to Sinatra et al. (2014), "Individuals often attempt to be rational, make justified decisions, take different information into account, and weigh the issues, but their motivations bias what information they attend to and what strategies they use to construct, assess, and evaluate that information" (129). To better understand these motivations, Extension and strategic partners can also provide opportunities, such as townhalls, for community members to ask healthcare experts questions about the vaccine.

A visible partnership with Extension may be seen as a credible source of information in rural communities but will also take the pressure off Extension professionals to provide health-related information. Extension professionals who would engage in conversations related to vaccines or public health should be provided with training or resources, so they feel more comfortable and confident when participating in those conversations. Extension agents specializing in public health may also be a valuable resource as Extension works to make

health and wellness a program priority.

Future research should investigate effective health messages, particularly related to vaccines, for rural communities. Investigating effective health messages and avoiding messages that are known to be ineffective can also help practitioners address information fatigue.

Effective communicators of health messages in rural communities should also be determined through future research. This research will provide insight on the effectiveness of Extension professionals as communicators of health-related topics or what other organizations Extension could partner with.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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