

# Public Opinion in a Pandemic: Four Surveys Conducted with Americans throughout the COVID-19 Pandemic

Lauri M. Baker

Chen-Xian Yang

Angela B. Lindsey

Ashley McLeod-Morin

Ricky W. Telg

Anissa Zagonel

Sydney Honeycutt

Naik Wali

Shelli Rampold

University of Florida  
Gainesville, Florida, U.S.A.

**Abstract:** The UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources (PIE Center) conducted a series of national public opinion surveys to examine the perceptions of Americans related to COVID-19. The PIE Center conducted four surveys with ~1,500 Americans per survey from mid-March 2020 to January 2021. The surveys sought to understand Americans' perceptions of a range of topics including health and communication concerns, vaccination perceptions and acceptance, mask understanding and willingness, and compound disasters and stress. Presentations in this panel highlight key areas of research from this survey series and share how communicators can use this research to craft campaigns to effectively reach Americans during COVID-19 and future public health crises.

**Keywords** — COVID-19, masks, public opinion, surveys, vaccines

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## INTRODUCTION

As COVID-19 spread across the world it affected every aspect of life: socially, economically, and psychologically [1]. People were asked to respond to the public health crisis in a variety of ways to slow the virus spread and maintain public health, including wearing masks, maintaining social distancing, or getting vaccinated. In addition, as the world continued to deal with the impacts and challenges from the COVID-19 pandemic, other disasters did not pause. People may need stronger psychological qualities to face multiple simultaneous crises. In an effort to understand the needs of Americans related to the communication of scientific recommendations for COVID-19 control and support for recovery from the financial and psychological stressors, the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Center for Public Issues Education in Agriculture and Natural Resources (PIE Center) conducted a series of national public opinion surveys beginning in March of 2020. The focus of this article, based on a panel presentation at ICRCC, was on the impacts of COVID-19 on Americans and recommendations for increasing trust in science and helping communities recover from the effects.

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## LITERATURE REVIEW

A variety of constructs and conceptual and theoretical frameworks were used to understand Americans concerns related to COVID-19 and the communication of science associated with the virus and protective measures. Specifically, theoretical frameworks of the Theory of Planned Behavior (TPB) and the Planned Risk Information Seeking Model (PRISM) were used to explore the concepts of vaccines, face masks, and multiple hits.

The TPB may impart a functional framework for predicting compliance with mask wearing and vaccination. As per TPB, the probability of a behavior depends on intentions, determined by subjective norms and attitudes about the behavior, and perceived behavioral control (PBC). PBC may sometimes directly influence behavior (i.e., when actual control is high) [2]. Empirical evidence supports the applications of TPB for predicting health behavior generally [3].

The PRISM offers a framework for understanding how people's subjective norms related to important others in their lives will affect their choice to take specific behavioral actions, like getting vaccinated for COVID-19. PRISM combines TPB and the Risk Information Processing model (RISP). If people have enough vaccine information and risk perceptions, it will prompt them to adopt a positive attitude toward vaccination [4] [5]. In a risk context, PRISM can better predict people's attitudes and intent to seek health risk information [6].

Vaccines are particularly critical to the circumvention of widespread outbreaks of preventable diseases. Due to the role of public perceptions in reducing the spread of COVID-19 through vaccinations, it is recommended a coordinated national promotion strategy that employs human-centered research with social, behavioral, and communication science at the center of such efforts to aid in delivering timely, evidence-based recommendations for best methods of supporting vaccine delivery and uptake [7]. Vaccine hesitancy can slow vaccination rates and prevent herd immunity. People vaccinated can effectively decrease the risk of spreading COVID-19 to others and personally reduce their chance of infection and death [8].

Although vaccination is the primary method for reducing the spread of COVID-19, people can also mitigate the spread through non-pharmaceutical interventions, such as wearing a mask. During the pandemic, the Centers for Disease Control and Prevention (CDC) strongly recommended the public should wear masks to reduce the transmission rate of the disease, especially those at high risk of serious illness, older people, and children [9]. Public use of masks can reduce community transmission, reduce hospitalizations and death peaks, and gain benefits for community-wide disease control [10]. If the public wears masks and maintains social distance, the prevention effect will be much more significant [10]. Because of these reasons, it is important to understand concern factors that may affect peoples' willingness to wear a mask, as the virus continues to spread [11].

COVID-19 may have halted the world as it spread, but natural disasters continued throughout the pandemic regardless. According to the National Oceanic and Atmospheric Administration (NOAA), 2020 had 22 weather and climate disasters in the U.S. that killed at least 262 people [12]. Within that, the hurricane season included 12 storms that made landfall causing over \$40 billion in damage combined [13]. In 2021, there have been 18 natural disasters exceeding \$1 billion in losses [12]. Simultaneous multiple disasters, such as the COVID-19 pandemic and natural disasters, can place considerable burdens on response efforts and resources making it more difficult for communities to recover. In addition to crippling critical community resources, multiple disasters can add considerable stress and mental health impacts to individuals. "After experiencing multiple traumatic events simultaneously, many people may feel great dread, loneliness, and frustration," [14]. Mental health impacts from the COVID-19 have included anxiety, depression, insomnia, and substance abuse [15].

## METHODS OR PROCEDURES

Four surveys developed by the UF/IFAS Center for Public Issues Education were used to collect data through a third-party recruiting company, Qualtrics, using an opt-in panel. The first survey was distributed March 13-16, 2020, focusing on Americans' knowledge, response concerns, and beliefs related to COVID-19 during the early outbreak. The second survey was from April 23 to May 7, 2020, and it focused on people's attitudes toward social distancing and mask-wearing. The third survey was from July 23 to August 9, 2020, with similar questions as previous surveys and additional questions related to multiple hits and mental stress. Data from the fourth survey were collected from January 8 to 21, 2021 with a focus on better understanding attitudes related to trust in science and the COVID-19 vaccine. Data were collected from over 1,500 participants per survey with stratified sampling based on U.S. Census Bureau demographics for gender, race, ethnicity, and region of the U.S. [16]. Data were analyzed in SPSS 28 using paired-sample t-tests, analysis of variance (ANOVA), correlation analysis, and binary logistic regression.

## RESULTS

Abbreviated results of the surveys reflect the perceptions and attitudes of American's during the COVID-19 pandemic in terms of vaccination, wearing masks, and multiple hits. To begin, some factors were identified that may influence American's intentions to vaccinate. The logistic regression model predicted 87.1% of the cases correctly compared to 80.3% of cases predicted correctly in the initial model. The Wald statistic for vaccine attitudes, health concerns, flu vaccine,

and other vaccines were found to be statistically significant, which indicated these variables were significant predictors in the overall model. In addition, a serial mediation model showed a serial indirect effect of important others' belief of getting the COVID-19 vaccine on people's vaccine intentions through the desire to do what important others want and attitude toward the vaccine in sequence, 95% CI [.08, .15]. Direct relationships also existed between the two variables,  $R^2 = .55$ ,  $p < .001$ ,  $F = 1851.84$ .

Furthermore, people who were willing/able to wear masks had higher health, economics, and preparedness concerns than those who were unwilling/unable to do so through the t-test ( $p < .001$ ). A positive correlation was found between the degree of concern for risk factors and the behavior of wearing a mask ( $p < .001$ ). This study further considered differences due to demographic variables through ANOVA. People with higher education, liberal political beliefs, aligning in the Democratic Party, or living in non-rural areas were more able and willing to wear masks.

Last but not least, this study compared Americans' ability to experience multiple disasters and endure stress before and during the COVID-19 pandemic outbreak. At the time before and during the COVID-19 outbreak, significant mean differences (MD) of participant stress were noted in (1) experiencing stress (MD = .49;  $p < .001$ ); (2) struggling with mental health (MD = .33;  $p < .001$ ), and (3) experiencing stress about potential natural disasters (MD = .20;  $p < .001$ ). None of the demographic variables were significantly related to mean difference scores on general health, mental stress, or disaster stress.

## DISCUSSION

Findings from this study provide insight into specific factors for how people form a willingness to receive the COVID-19 vaccine. In all, the best predictor of participants' willingness to receive a COVID-19 vaccine was previously receiving the flu vaccine, while receiving other recommended vaccines was also a strong predictor. Health concerns associated with COVID-19 and attitudes toward vaccines were also influential of participants' willingness to receive a COVID-19 vaccine. These findings support Schoch-Spana et al.'s [7] notion on the importance of social, behavioral, and communication science when developing a promotional strategy for a COVID-19 vaccine. These results build on prior PRISM research by adding further understanding of the impact of important people as a valuable social influence for increased vaccination rates. Crisis communicators should consider campaigns focused on creating social influence toward positive vaccine behaviors.

## CONCLUSION

Using the TPB and PRISM frameworks, it will be imperative to change social norms in specific communities like people living in rural areas and with conservative viewpoints to increase vaccination rates and implement other scientifically based, non-pharmaceutical prevention methods during the COVID-19 pandemic and future public health crises. Gathering testimonials and personal experiences of those with shared cultural identities will be needed to successfully implement mask use during times of public health crisis.

Finally, when discussing stress and mental health impacts from the COVID-19 pandemic, it is important to consider and address multiple disasters and the potential for disasters happening simultaneously. Providing education and awareness to healthcare workers, communities, and individuals may decrease the risk of severe and long-term mental health consequences.

## Author Biography

Baker, L. M., PhD, associate professor, University of Florida, lauri.m.baker@ufl.edu

Yang, C., M.S., graduate student, University of Florida, yang.c1@ufl.edu

Lindsey, A. B. PhD, assistant professor, University of Florida, ablindsey@ufl.edu

McLeod-Morin, A., PhD, associate director of strategic communication, University of Florida, ashleynmcleod@ufl.edu

Telg, R. W., PhD, professor, University of Florida, rwtelg@ufl.edu

Zagonel, A., M.S., research coordinator, University of Florida, azagonel@ufl.edu

Honeycutt, S., media coordinator, University of Florida, s.honeycutt@ufl.edu

Wali, N., M.S., graduate student, University of Florida, walinaik@ufl.edu

Rampold, S., PhD, assistant professor, University of Tennessee, srampold@utk.edu

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