



The Association of Health Anxiety with COVID-19 Vaccination Status and Vaccine Hesitancy

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Introduction

- Health anxiety has emerged as key in public health campaigns (Asmundson, 2020)
- Low health anxiety contributed to vaccine avoidance and lack of prevention behaviors in H1N1. High health anxiety contributed to maladaptive safety behaviors such as panic purchasing.
- Ensuring adequate vaccine supply and scientific information was insufficient in previous pandemics (Ofri, 2009)
- Anti vaccination groups often manipulate emotions to promote misinformation and create division, 76% -88% of anti vaccination websites studied leveraged emotional appeals to establish their ideologies (Bean, 2011). These emotional sentiments have contributed to vaccine hesitancy (Chou & Bundenz, 2020)
- Preliminary research identified key demographic components that impact COVID-19 vaccine hesitancy (Callaghan, 2020)
- The current study extended these results by examining the psychological factor of health anxiety and emotional reasoning on COVID-19 vaccine hesitancy.

Methods

Measures

- The Health Anxiety Inventory (Abramowitz, Deavon, & Valentiner, 2007)
- Vaccine hesitancy was measured by participants selecting if they were vaccinated (not hesitant) planned to get vaccinated (not hesitant) or no intent (hesitant)
- COVID-19 risk, prevention, reasoning (Callaghan, 2020):
 - Two items assessed exposure frequency for self and significant others on a 4-point Likert scale. These items were summed and range from 2-8
 - COVID-19 severity for self and family/friend was scored on a 5-point scale ranging from asymptomatic to severe.
 - Preventative behaviors were a sum of mask wearing (4-point Likert scale) and social distancing (6-point Likert scale).
 - Emotional/logical reasoning was a sum score of 14 compiled items assessing acceptance of the COVID-19 vaccine for those who were vaccinated or intending to get vaccinated. Subscales were examined for emotional and logical reasoning to yield two scores. Those who do not intend to get vaccinated had 18 choices for various reasons.
 - 7 reasons to decrease vaccine hesitancy were presented to vaccine hesitant individuals

Procedure

- Following informed consent, anonymous survey data were collected via Qualtrics from May 30, 2021- August 6, 2021 via online platforms and social media.

- Health anxiety was associated with higher risk of exposure, $F(1, 536) = 5.09, p = .024$, severity of COVID-19 illness for self, $F(4, 133) = 3.81, p = .006$, preventative behaviors, $r = -.107, p = 0.05$, and emotional reasoning, $r = -.09, p = 0.03$.
- HA was not associated with vaccine hesitancy, COVID-19 self-reported symptoms, or knowing someone with COVID-19 (all $p > .05$).
- Hesitancy was associated with lower preventative behaviors, $F(1, 531) = 6.82, p = .009$, see Figure 1.

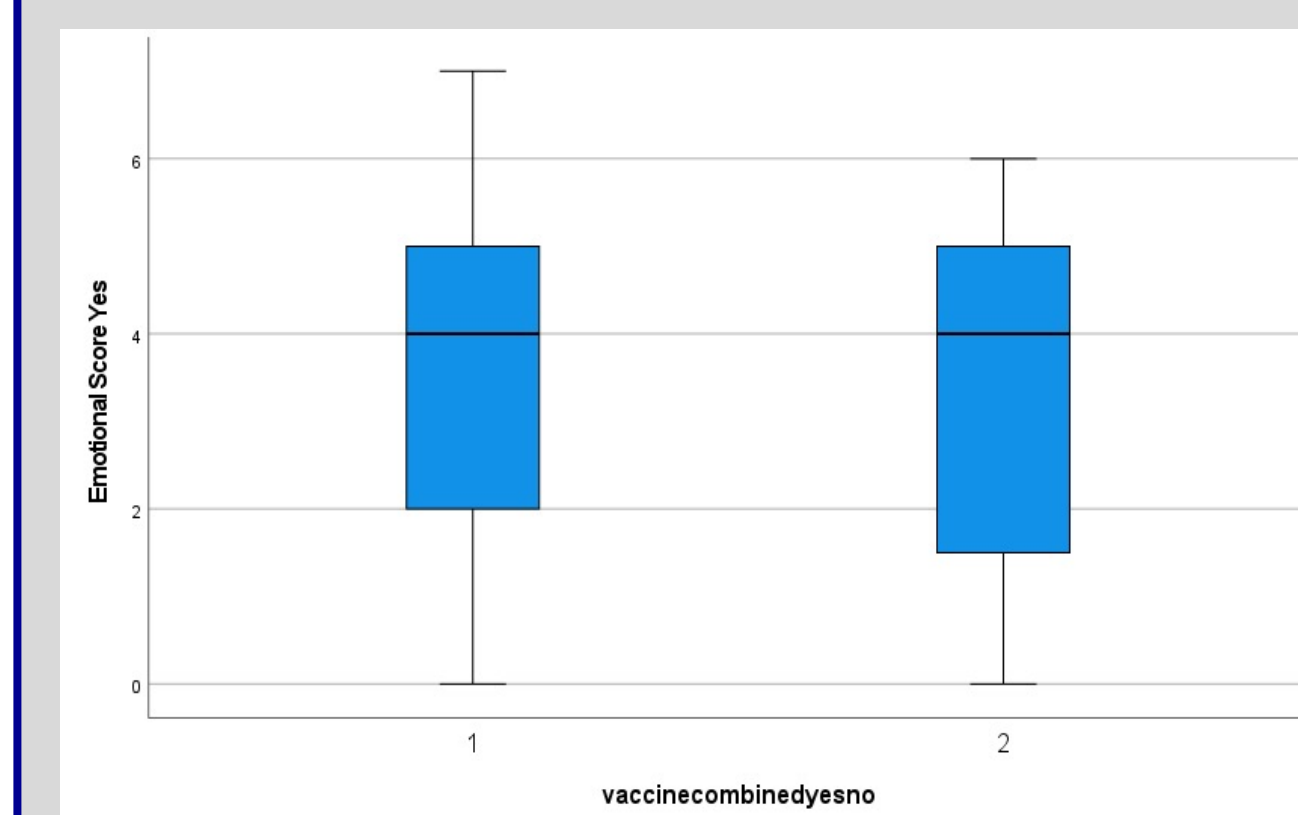


Figure 2. Emotional Reasoning by Hesitancy

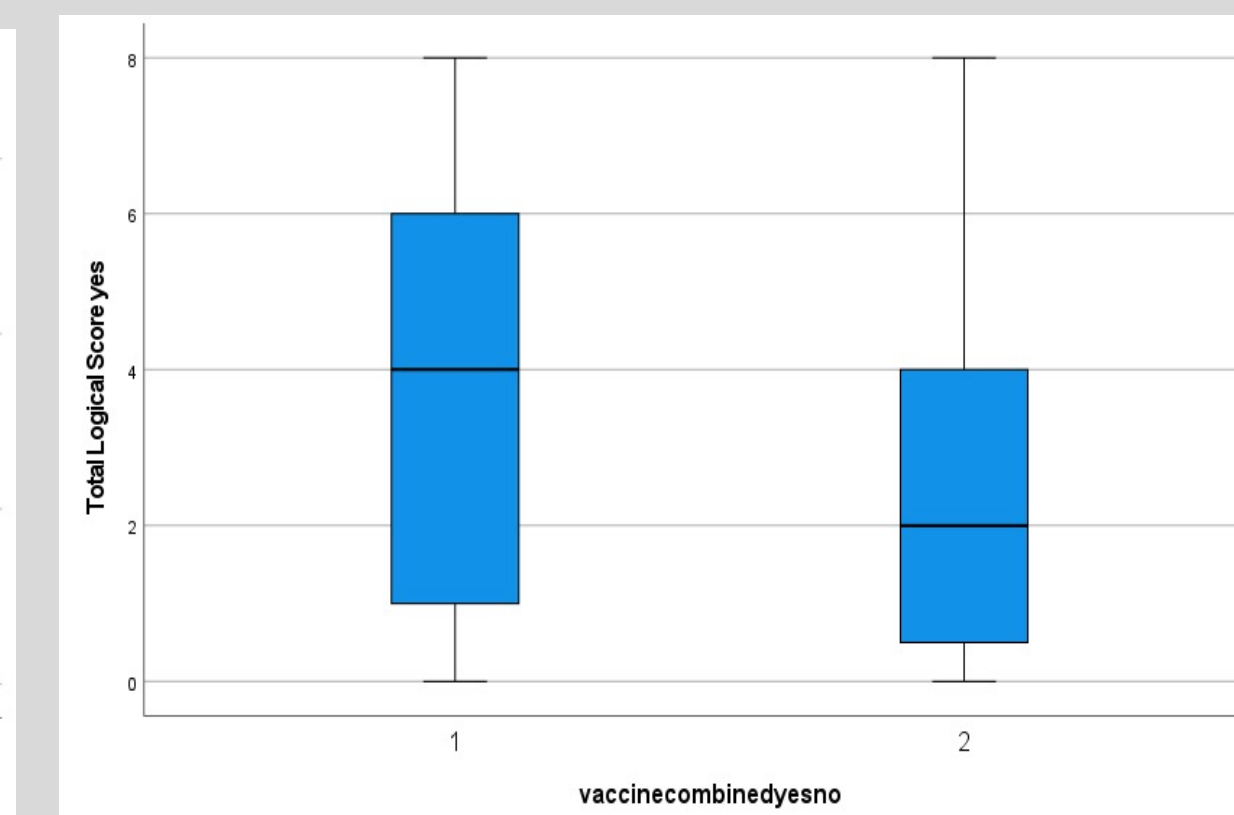


Figure 3 Logical Reasoning by Hesitancy.

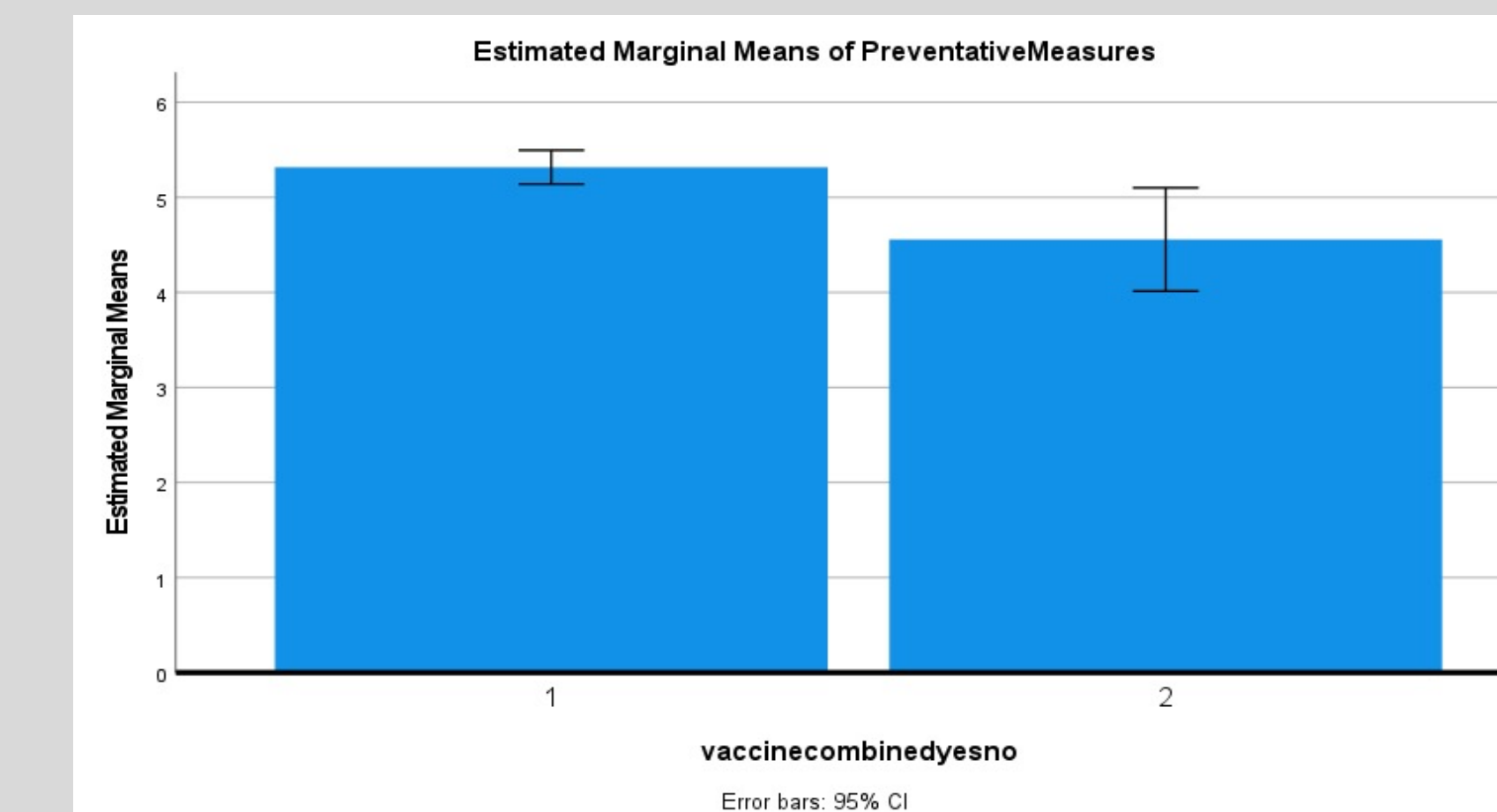


Figure 1. Hesitancy and preventative behaviors

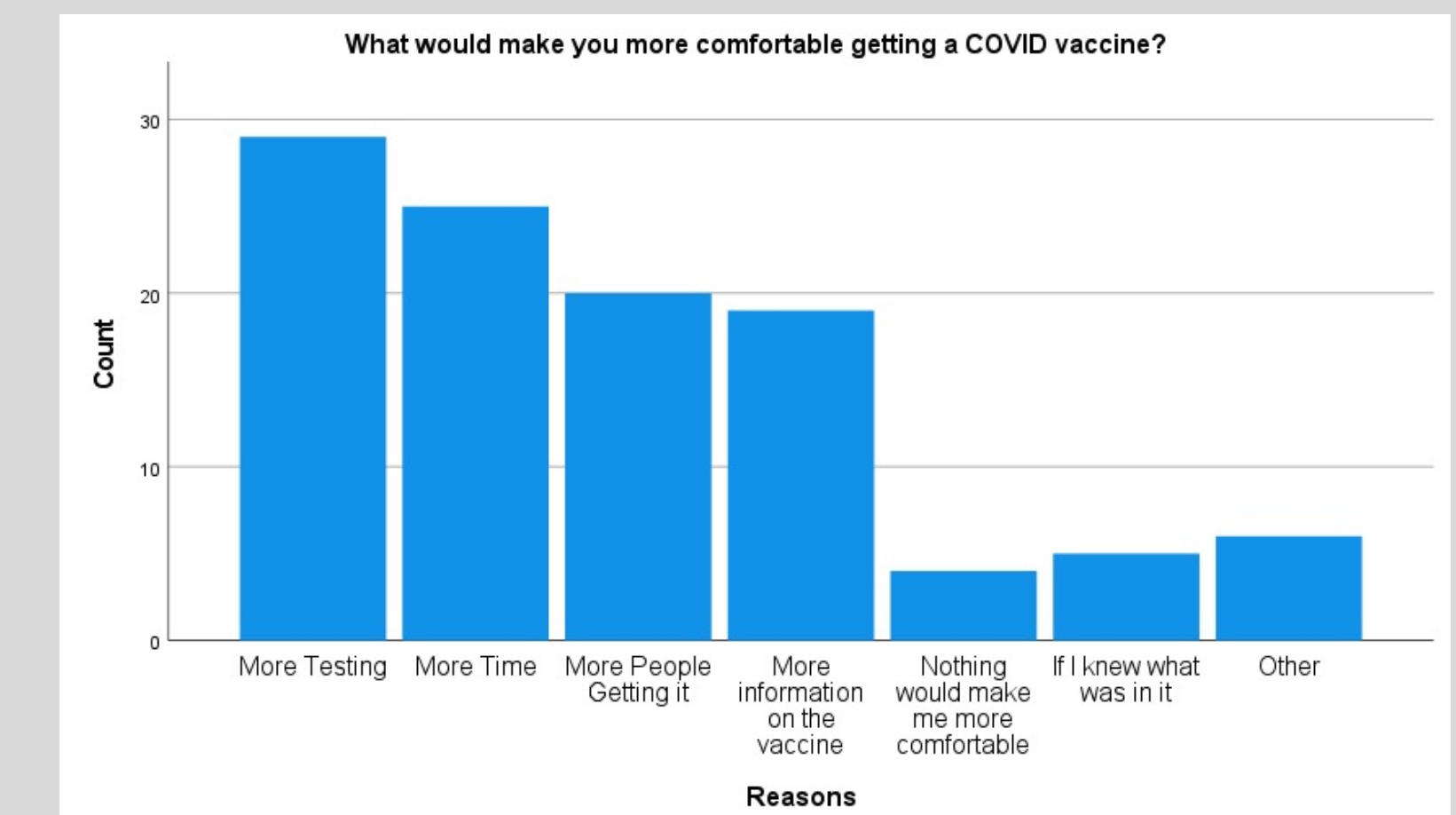
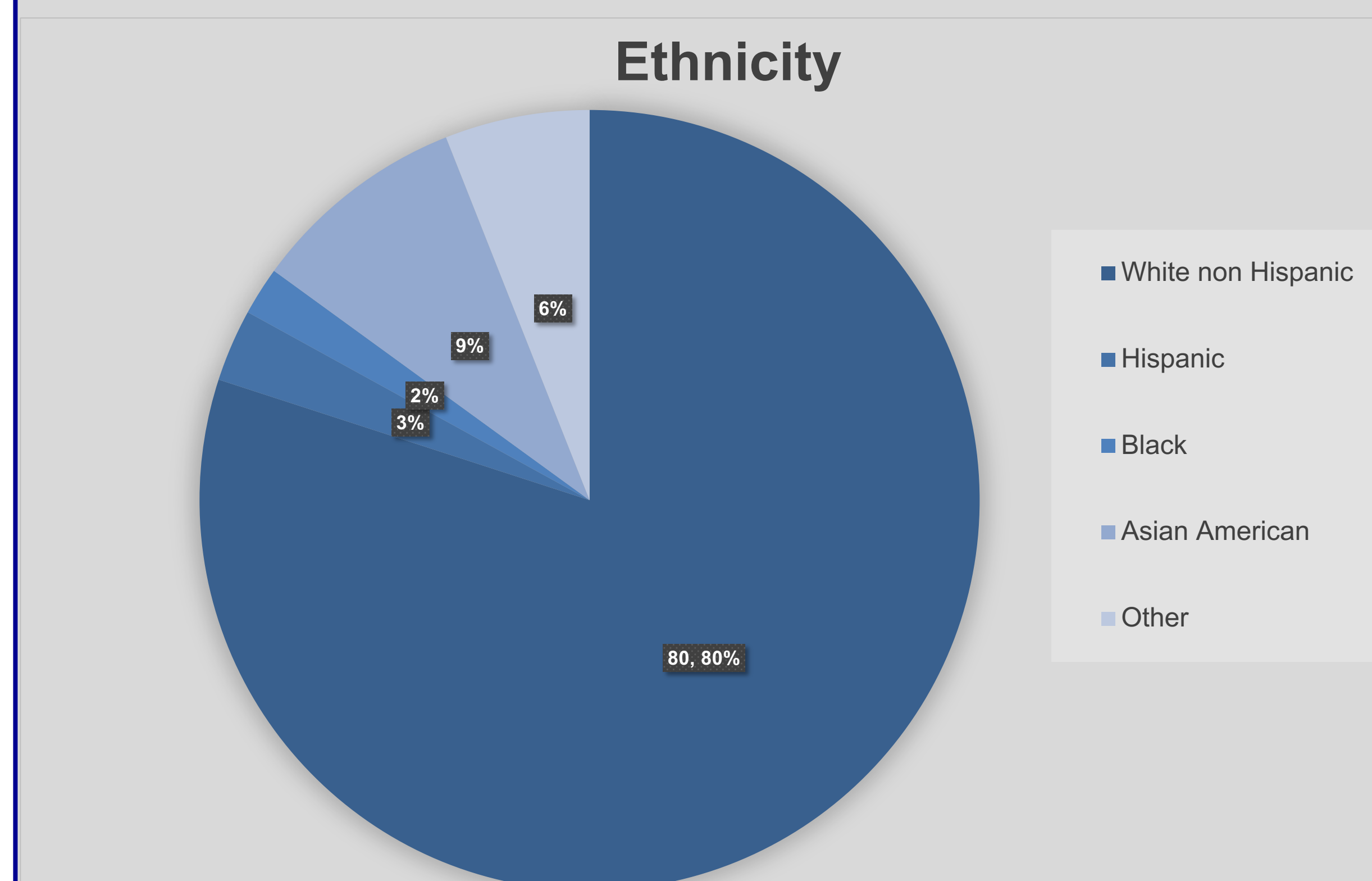


Figure 4. Prompts to decrease vaccine hesitancy

- Emotional reasoning that the vaccine was rushed ($X^2(1, N = 529) = 4.72, p = .03$) and that the vaccine is dangerous ($X^2(2, N = 529) = 12.14, p = .002$), were associated with vaccine hesitancy.
- Emotional reasoning scores for vaccine accepting individuals were correlated with taking more preventative measures ($r = -.250, p < .001$) and health anxiety ($r = .093, p < .034$).
- Logical reasoning scores for those who intended to get vaccinated were correlated with taking more preventive measures, $r = -.212, p < .001$, but not with health anxiety.
- The distribution of prompts to decrease vaccine hesitancy are shown in Figure 4.

Participants

- 541 participants consented to the study
- Mean age was 34.03 years old ($SD = 14.9$). The sample was 75% female, 22% male, and 3% Other
- Gender (including self-reported nonbinary and transgender males)
- See Figure for ethnicity.
- 40% a 4-year college degree, other education. 40% resided in the state of the study



Discussion

- HA was significantly associated with higher risk of exposure to COVID-19, more severe COVID-19 symptoms, and higher prevention behaviors of mask-wearing and social distancing. It was not, however, related to vaccination hesitancy.
- Emotional reasoning in regards to several facets of skepticism about the COVID-19 vaccine and its development was related to negative vaccination status, beliefs that the vaccine was rushed, and that the vaccine was dangerous. This could be linked to the difficulty of processing scientific information that can be non-intuitive making the information harder to be disseminated and accepted by individuals (Salali & Uysal, 2020).
- Beliefs that are more in line with intuition are easier to understand and thereby remember. This could be why certain attitudes regarding skepticism are linked with vaccine status
- In addition, exposure is a tangible and logical experience. While exposure is not ideal it poses important implications for possible methods of getting more vaccine acceptance.
- HA was associated with several COVID-19 related experiences. In particular, the association between preventive measures and health anxiety could help to find what populations are more likely to get vaccinated and follow recommended behaviors.
- Identifying HA and its associations with prevention behaviors for COVID-19 adds to information regarding public health campaigns above and beyond the currently identified
- Generalization beyond the predominantly White female sample geographically centered in the Northeast may be limited. Future research reflecting broader demographics could be collected via platforms that collect data.

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