The Effects of a Brief Educational Intervention on COVID-19 Knowledge, Beliefs, and Intention to get Vaccinated

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Background

- Vaccine hesitancy is more prevalent in minority populations, specifically Black and Hispanic populations in the United States due to medical mistrust stemming from historical events and/or negative perceptions of vaccines due to misinformation.[1,2,3,4]
- The use of media and technology may be crucial in disseminating pertinent and accurate information to increase vaccine acceptance among these communities.

Hypotheses

- Among Black and Hispanic populations, participants who underwent a brief educational intervention will display:
  - Increased levels of COVID-19 knowledge
  - More positive COVID-19 beliefs
  - Increased intention to get vaccinated in the next 30 days

Methods

Dataset and Sample

Data from the Community Engagement Alliance (CEAL) Against COVID-19 Disparities study was used. Black and Hispanic adults completed a baseline survey, viewed COVID-19 educational materials, and completed a follow-up survey. Participants met the following inclusion criteria:

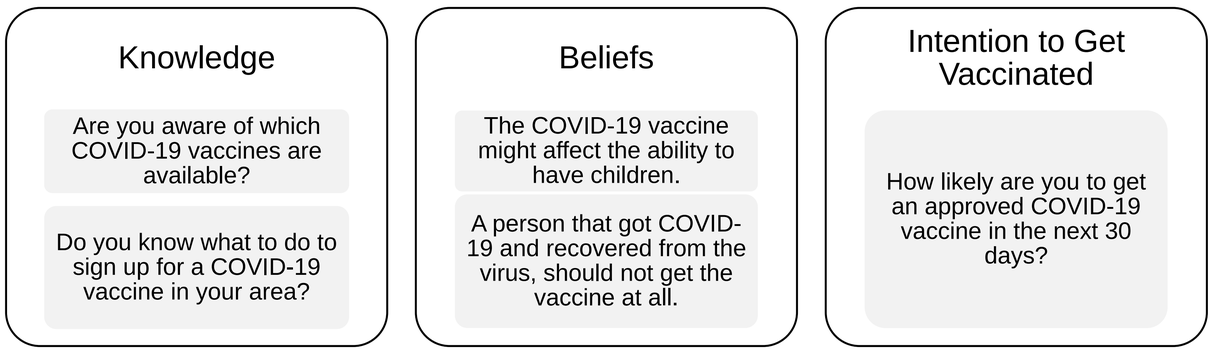
- Black or Hispanic
- At least 18 years old
- Not vaccinated against COVID-19
- Able to read and write in English

Intervention

Participants viewed a frequently asked questions document, an infographic, a social media guide, and two social media flyers. The flyers were ethnically-appropriate for the targeted audience. The materials were aimed at addressing common concerns (ex: “Will the vaccine give me COVID-19?”) and debunking myths (ex: “The vaccine will NOT make you infertile.”).

Methods (cont.)

Measures



Data Analysis

Demographic and participant characteristics were described using frequencies, means, and standard deviations as appropriate. Factor analysis was performed for vaccine knowledge and belief measures. Knowledge score was created by sum of two items 'Are you aware of which COVID-19 vaccines are available? ' and 'Do you know what to do to sign up for a COVID-19 vaccine in your area? ' (score range from 0 - 2, Cronbach Coefficient Alpha = 0.703). Similarly, belief score was calculated by summing two items 'The COVID-19 vaccine might affect the ability to have children' and 'A person that got COVID-19 and recovered from the virus, should not get the vaccine at all’ (score range from 0 - 2, Cronbach Coefficient Alpha = 0.754). Intention to get the COVID-19 vaccine in the next 30 days was assessed using 1 item, treated as a continuous score (score range from 1 – 5). Change in score before and after the educational intervention was assessed with paired t-tests (or Wilcoxon signed-rank test when appropriate). All analyses were performed using SAS v.9.4 (SAS Institute, Cary, NC)

Results

Table 1. Participant characteristics, N = 1606

Variables	n(%)
Age	
Mean	31.9 ± 5.9
Min-max	20-62
Gender	
Male	980 (61.0)
Female	625 (38.9)
Other	1 (0.1)
Race	
Black	964 (60.0)
Hispanic/Latino	642 (40.0)
Education	
Less than Bachelor’s	1016 (63.6)
Bachelor’s degree or higher	581 (36.4)
Annual household income	
Less than $50,000	836 (52.1)
$50,000 or more	770 (47.9)

Table 2. Change in score between before and after education intervention, N = 1606

Variables	Before (Mean ± SD)	After (Mean ± SD)	P-value*
Knowledge	1.07 ± 0.87	1.29 ± 0.85	< 0.0001
Beliefs	1.20 ± 0.88	1.36 ± 0.75	< 0.0001
Intention to get Covid-19 vaccine	3.18 ± 0.92	3.45 ± 0.88	< 0.0001

*P-values were calculated using paired t-tests.

Discussion

The educational intervention led to significant increases in COVID-19 knowledge, positive beliefs, and intention to get vaccinated in the next 30 days. One strategy that may prove effective in decreasing vaccine hesitancy in Black and Hispanic populations are short, ethnically appropriate educational materials. These materials can be posted in schools, waiting areas, places of worship, the workplace, or other frequently visited areas in order to educate the public on the COVID-19 vaccine, increase vaccine acceptance, and lead us closer to herd immunity.

Since a convenience sample was used, the results of this study may not be applicable to the general Black and Hispanic population. In addition, participant answers were self reported, which may have led to biased responses.

In order to assess if vaccination rates increased as a result of the intervention, future research is needed to investigate if the participants were eventually vaccinated.

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