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Journal of the American Pharmacists Association

journal homepage: [www.japha.org](http://www.japha.org)

## RESEARCH

## Virtual town halls addressing vaccine hesitancy among racial and ethnic minorities: Preliminary findings

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## ARTICLE INFO

## Article history:

Received 1 July 2021

Accepted 3 November 2021

Available online 10 November 2021

## Keywords:

COVID-19  
pandemic  
town halls  
vaccines  
vaccine hesitancy  
barriers

## ABSTRACT

**Background:** The coronavirus disease 2019 (COVID-19) pandemic remains a public health priority, and vaccination is important for ending the pandemic. Racial and ethnic minorities are disproportionately affected by COVID-19 yet report high levels of vaccination hesitancy.

**Objective:** We conducted virtual town halls to address vaccine hesitancy among racial and ethnic minorities in South Florida.

**Methods:** Our approach used social influence and persuasion models. In a formative phase, we gathered meeting preferences from our communities and developed and tested our approach. In an implementation phase, we conducted 6 virtual town halls in partnership with 6 different minority-focused community-based organizations.

**Results:** The town halls reached 379 participants (mean age 36.6 years; 63.9% female, 33.5% male, 0.3% nonbinary; 55.8% racial or ethnic minority). Of these 379 participants, 69 completed both polls who were unvaccinated at the time. Among these nonvaccinated participants, at the prepoll, 58% reported a high likelihood of seeking vaccination, rising to 72.5% at the exit poll, which was a statistically significant change. Unvaccinated non-hesitant and hesitant groups were compared on trusted information sources and reasons and barriers for vaccination. Nonhesitant participants reported greater trust in the COVID-19 Task Force (97.3% vs. 83.3%) as a source of vaccine information than did hesitant participants. Nonhesitant participants were statistically significant more likely to endorse family safety (82.5% vs. 63.2%), community safety (72.5% vs. 26.3%), personal safety (85% vs. 36.8%), and wanting to return to a normal life (70% vs. 31.6%) as reasons for vaccination than were hesitant participants. Hesitant participants were statistically significant more likely to endorse concerns about vaccine safety (63.2% vs. 17.5%) as barrier to vaccination than were nonhesitant participants. Qualitative data revealed high consumer satisfaction with the town halls.

**Conclusion:** This study supports the feasibility, acceptability, and potential impact of virtual town halls for addressing vaccine hesitancy among racial or ethnic minorities; however, our approach was resource intensive, required an extensive community-university collaborative infrastructure, and yielded a small effect.

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## Background

One year after coronavirus disease 2019 (COVID-19) was declared a pandemic, there have been more than 40 million cases and more than 648,000 COVID-19–related deaths in the United States.<sup>1</sup> A much higher number of Americans have been

affected by the pandemic in many ways, including, but not limited to, the loss of friends and family members, job loss, housing problems, financial strain, decreased access to running water or food, and lack of access to education or in-person learning.<sup>2–6</sup> Research has shown that racial and ethnic minorities have been disproportionately affected by the

**Disclosure:** The authors declare no relevant conflicts of interest or financial relationships.

**Funding:** This research was supported by a research supplement to Florida International University's National Institute on Minority Health and Health Disparities–supported Research Center in a Minority Institution (grant U54MD012393; Principal investigator: Eric F. Wagner).

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**Key Points****Background:**

- Racial and ethnic minorities are disproportionately affected by coronavirus disease 2019.
- Racial and ethnic minorities report high levels of vaccination hesitancy.
- Virtual town halls hold promise for reducing vaccine hesitancy among racial and ethnic minorities.

**Findings:**

- Virtual town halls proved feasible and potentially impactful for addressing vaccine hesitancy.
- Reasons for and barriers to vaccination differed between vaccine nonhesitant and hesitant groups.
- Virtual town halls were resource intensive, required extensive community-university collaboration, and yielded a small effect.

COVID-19 pandemic and are more likely to have poorer outcomes such as adverse socioeconomic consequences, severe morbidity, hospitalization, and mortality.<sup>7–12</sup> In the United States, multiple vaccines are now available for protection against COVID-19 and will play a crucial role in ending the pandemic.<sup>13</sup> Vaccination is of particular importance for those who are at heightened risk for COVID-19 hospitalization and death, including seniors, people with underlying conditions, and immunocompromised individuals. Unfortunately, reports from studies conducted on vaccine uptake have shown high rates of vaccine mistrust, lower vaccine uptake, and higher vaccination hesitancy among racial and ethnic minorities.<sup>14–18</sup> Mistrust of the COVID-19 vaccines is widespread, particularly among people of color, with only 18% of Blacks and 40% of Hispanic/Latinx Americans trusting that a COVID-19 vaccine will be effective; even fewer trusting that it will be safe.<sup>14</sup> Vaccine hesitancy is often fueled by misinformation online and offline including widely circulating false information about the COVID-19 vaccine on social media platforms (e.g., that COVID-19 vaccines cause fertility issues; that COVID-19 vaccines alter one's DNA).<sup>19</sup> Such information may exacerbate pre-existing fears, seeding doubt and cynicism over new vaccines, and limit public uptake of COVID-19 vaccines.<sup>19</sup> The impact of this mistrust is disconcerting—fewer than half of Blacks intend to get vaccinated against COVID-19.<sup>14</sup>

**Objective**

Supported by a research supplement to Florida International University's (FIU) National Institute on Minority Health and Health Disparities (NIMHD)—supported Research Center in a Minority Institution (RCMI) (NIMHD grant U54MD012393), our overarching objective was to develop and implement community-university partnered virtual town halls designed to address vaccine hesitancy among racial and ethnic minorities in South Florida.

**Method***Setting*

We relied on FIU-RCMI's vast network of community organizations, its Community Engagement Core, and its Community Advisory Board (CAB) to reach minority disadvantaged populations at a high risk of acquiring the virus. FIU is a minority-serving institution: 77% of its more than 55,000 students are from historically underrepresented minority groups. The population of Miami-Dade County, where FIU is located, is 66.8% Hispanic, 16.4% Black, and 14.4% white non-Hispanic. Moreover, several disparities related to COVID-19 are evident in Miami-Dade County—19.4% of adults younger than 65 years do not have health insurance (compared with 9.5% nationwide), 70.2% of adults 25 years or older hold less than a bachelor's degree (compared with 67.9% nationwide), 15.7% of individuals live in poverty (compared with 10.5% nationwide) and \$51,347 is the median household income (compared with \$62,843 nationwide). In regard to COVID-19 itself, Miami-Dade has been the leading county in new cases, with more than 500,000 reported cases, 6472 reported deaths, although 66.49% is fully vaccinated.<sup>20–22</sup>

*Study design*

We used participatory sensing,<sup>23</sup> which relies on mobile devices and computer connectivity (e.g., Zoom) to form interactive, participatory networks to share knowledge and address vaccine hesitancy. We employed real-time participatory visualization techniques,<sup>24</sup> wherein community participants are also producers and remixers of community health information, immediately accessible to and easily understood by constituents. As forewarned by Yoder and Talmage,<sup>25</sup> we recognized the need for preliminary experimentation, adjustment, and harmonization of our approach. Therefore, we built in considerable formative work before formally launching our town halls. This research project was reviewed and approved (deemed exempt) by FIU's Institutional Review Board.

*Formative phase*

Formative work was critical to gather information about the characteristics and preferences of our target communities to ensure our Town Halls were as appealing and engaging as possible.

*Theoretical basis*

Our approach was based on social influence and persuasion models,<sup>26</sup> which suggest that there are 2 contributing pathways to addressing vaccine hesitancy: (1) attitude changes and (2) taking action toward vaccination. Attitudes were targeted through eliciting participants' motivation and cognitive engagement in the interactive process, which was enhanced through attention to participants' questions and Zoom live chat. In addition, we kept our town halls to 1 hour and used language as clear, direct, and accessible as possible. Taking action was promoted through the relative ease of our mode of information delivery, as well as explicit information for and

follow-up with those interested in vaccination. Moreover, we worked to ensure participants' perception of the moderators was positive to maximize involvement and peripheral attitude changes such as increasing trust, intended to positively influence participants' motivation to process the messaging, and ultimately take action. In addition, we developed human-centered graphics for video-based health education, which were offered for dissemination across our network comprised of the FIU-RCMI community partners.

### Community partners

The FIU-RCMI CAB consists of 27 representatives of diverse community-based organizations (CBOs). With community input from FIU-RCMI CAB, we created educational materials explicitly attending to cultural, linguistic, and local sensitivity and effectiveness. Our formative phase took place during the first 3 months of the project and involved 5 steps.

- (1) Developing drafts of our materials, processes, and pre-meeting-postmeeting assessments for implementing our town halls. Information and data sources for the materials included those provided by the Centers for Disease Control and Prevention<sup>27</sup> and National Institutes of Health.<sup>28</sup> Per the original grant aims of the research, our town hall content was organized around 4 questions: (1) What are vaccines? (2) How are vaccines developed? (3) How do vaccines work? and (4) Why get the COVID-19 vaccine? Our assessments addressed (a) knowledge of the risks and benefits of COVID-19 vaccines, (b) knowledge of the scientific process and vaccine safety and efficacy, (c) confidence about and trust in receiving the emergency-approved vaccines, and (d) readiness to receive approved vaccines.
- (2) Seeking community consultation from FIU-RCMI CAB to foster, evaluate, and facilitate community engagement. The CAB was convened through Zoom to review our slides, drafts for cultural and linguistic appropriateness, as well as for community accessibility, relevance, and appeal. CAB recommendations for revisions of materials, processes, and assessments were elicited and recorded. The community consultants included representatives from South Floridian Hispanic/Latinx, Black, and Haitian-Creole communities, as well as representatives from lesbian, gay, bisexual, transgender, queer-focused organizations. These representatives advised us on the use of materials in context of Spanish and Haitian-Creole. Furthermore, representatives from health care, educational, prevention, housing, and legal organizations consulted us.
- (3) Revising our materials, processes, and assessment based on CAB recommendations, with subsequent internal testing across our virtual meeting and data collection applications. However, as the COVID-19 vaccines became available and the medical research society learned more about the vaccines, we updated our educational slides accordingly.
- (4) Conducting a dress rehearsal of our town hall with our CAB, providing practice for our meeting facilitators, field-testing of our approach and computer applications, and having the opportunity for CAB members to see

their recommendations put into action and make any final suggestions.

- (5) Finalizing our materials, processes, and assessments on the basis of the dress rehearsal and CAB final recommendations, with finalization for implementation. Suggestions included keeping the town hall brief (no more than an hour), focusing on including medical providers who have ties with the community, and including the Haitian American communities in South Florida. We have incorporated or are in the process of incorporating this and other feedback into our town halls.

### Implementation phase

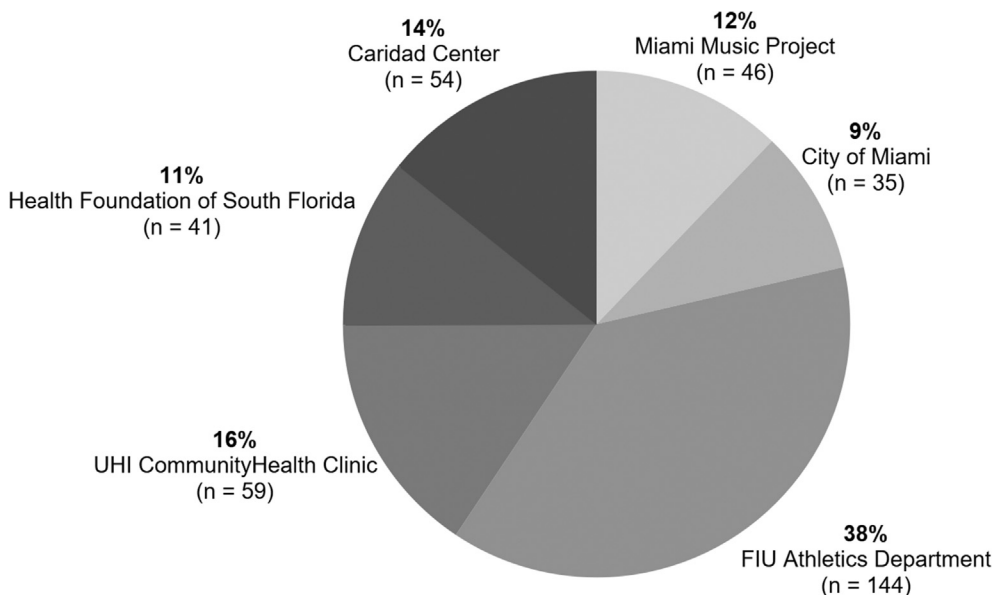
Informed by our formative phase, we implemented webinar-based town halls, which were recorded and then posted on social media platforms for on-demand restreaming. The data presented in this report came from 6 different town hall meetings, implemented in partnership with 6 different collaborating CBOs: the Miami Music Project, the City of Miami, FIU's Department of Athletics, the UHI CommunityCare Clinic, the Health Foundation of South Florida, and Caridad Center (done in Spanish). Agendas were guided by our expert panel of co-investigators and representatives of each CBO, as well as by the pre-event questions posted by the participants, and the experiences and themes from previous town halls.

Town hall participants were encouraged to preregister for the meeting, at which time they completed a brief registration form and were invited to provide questions for our experts. In addition, participants were permitted to provide questions through live chat during the meetings, which were integrated into the live discussion as often as possible. There was an option to post questions anonymously, which was used often by participants. Participant questions that could not be addressed during the town halls were answered through follow-up contacts with our community partners. Participant data were collected through real-time anonymous polls at the opening (pre) and close (post) of each meeting, as well as anonymous surveys.

Establishing rapport, trust, and mutuality is key for minority communities to be receptive to COVID-19 vaccination. Our town halls were designed to achieve this critical objective through (1) establishing connections through relatable peer and expert educators, (2) getting input and support from respected members of the various South Florida communities, (3) providing factual, accurate, and proven information in a manner that is easily understood, using graphics with simple and direct messaging culturally and linguistically appropriate for each target community, (4) partnering with programs, institutions, and health organizations relevant to the target communities, and (5) having an interactive exchange, demonstrating genuine concern for the communities.

### Data sources

The data in this report are from 3 separate sources: (1) the town hall registration form, (2) a vaccine confidence poll, conducted at the beginning and end of each town hall ("How likely are you to take the vaccine" ranging from 1, "very unlikely" to 5, "very likely," with the response option of "I have



**Figure 1.** Town halls' attendee distribution by partnering community-based organizations. Note: This graph is a display of the proportions of all town hall participants to date (September 2021; N = 379). No missing values were reported. Abbreviations used: FIU, Florida International University; UHI, CommunityCare Clinic.

already received a dose of the vaccine”), and (3) the town hall preassessment, a brief survey completed before the start of the town hall. The town hall registration form included demographic questions on gender, race, ethnicity, age, and ZIP Code, as well as a question on how the participant heard about the town hall. The premeeting survey collected data on reasons and barriers to get vaccinated, trusted sources of information, and demographics. The assessment was conducted after preregistration in the form of an online survey, to be completed at any point before the town hall started.

**Results**

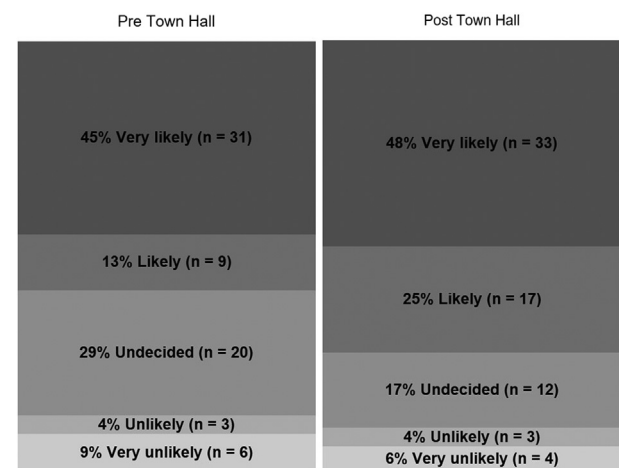
*Findings from the town hall registration demographics form*

A total of 379 people attended our first 6 town halls to date (see Figure 1). Not including blank responses, the average age

of participants was 36.6 years (SD = 16.2), with 39.9% between the ages of 13 and 25 years. Most (63.9%) identified as female, 33.5% identified as male, and 1 participant identified as nonbinary, genderfluid, or genderqueer, whereas 2.4% of attendees did not or preferred not to answer. More than half (55.8%) identified as an underrepresented racial or ethnic minority (URM), most of whom (73.9% of URM participants) as Hispanic or Latinx (41.2% of total attendees). Most (74.7%) participants were from the 3 counties constituting eastern South Florida, with 71.7% of the South Floridians from Miami-Dade County, 14.5% from Broward County, and 13.8% from Palm Beach County. An estimated 56.7% of participants indicated they learned about the town halls through our CBO partners' dissemination efforts. The above numbers are estimates due to the nature of virtual zoom webinars.

*Findings from the vaccine confidence poll conducted at the beginning and end of the town halls*

In total, 232 participants completed the vaccine confidence poll conducted at the beginning of the town halls, with 97 (41.8%) indicating that they have already received at least 1 dose of vaccine. Nonvaccinated participants were asked to indicate their likelihood of getting vaccinated on a 5-point scale (1: very unlikely, 2: unlikely, 3: undecided, 4: likely, or 5: very likely). Among nonvaccinated participants who completed the vaccine hesitancy poll at both the beginning and end of the town halls (n = 69), 58% reported at the beginning of the town halls that they were likely or very likely to get vaccinated, which increased to 72.5% at the end of the town halls (Figure 2). Moreover, among this group, the average vaccination likelihood was 3.81 (SD = 1.3) at the beginning of the town halls and 4.04 (SD = 1.2) at the end of the town halls, representing a statistically significant increase in vaccination likelihood (Wilcoxon signed rank test; P = 0.009) and small effect (r = 0.31).



**Figure 2.** Changes in vaccination likelihood from the beginning to end of town halls. Note: Includes only those participants who completed both pre- and postpolls during the 6 townhalls and who were not vaccinated (n = 69).

**Table 1**  
Demographic characteristics by vaccine status and hesitancy

Characteristics	All <sup>a</sup>		Vaccinated <sup>b</sup>		Unvaccinated <sup>c</sup>			Nonhesitant <sup>d</sup>		Hesitant <sup>e</sup>		
	Mean	SD	Mean	SD	Mean	SD	<i>P</i> <sup>f</sup>	Mean	SD	Mean	SD	<i>P</i> <sup>f</sup>
Age	41.8	17.8	49.4	16.5	30.7	13.4	< 0.001 <sup>g</sup>	29	12.6	34.4	14.7	0.1
No. people in household	3.1	4.7	3.2	6.1	3	1.2	0.021 <sup>g</sup>	3.2	1.2	2.7	1.2	0.13
	N	%	n	%	n	%	<i>P</i>	N	%	N	%	<i>P</i>
U.S. born	83	56.8	45	51.7	38	64.4	0.12	27	67.5	11	57.9	0.47
Home language not English	86	59.3	52	59.8	34	58.6	0.8	22	56.4	12	63.2	0.73
Female	108	74.5	64	73.6	44	75.9	0.94	30	75	14	77.8	0.79
Male	34	23.4	21	24.1	13	22.4	0.94	9	22.5	4	22.2	0.79
Race and ethnicity												
Black or African American	30	20.4	15	17	15	25.4	0.22	8	20	7	36.8	0.17
White	97	66	59	67	38	64.4	0.74	27	67.5	11	57.9	0.47
Other	8	5.4	5	5.7	3	5.1	0.88	2	5	1	5.3	0.97
Hispanic/Latinx and white	61	41.5	39	44.3	22	37.3	0.4	13	32.5	9	47.4	0.27
Hispanic/Latinx and Black	6	4.1	3	3.4	3	5.1	0.62	2	5	1	5.3	0.97
Hispanic/Latinx	76	52.1	46	52.9	30	50.8	0.74	19	47.5	11	57.9	0.52
Haitian	6	4.2	1	1.2	5	8.6	0.04 <sup>g</sup>	4	10.3	1	5.3	0.53
Income												
≤ \$19,999	19	13.1	10	11.6	9	15.3	0.52	7	17.5	2	10.6	0.96
\$20,000–\$34,999	12	8.3	11	12.8	1	1.7	0.52	0	0	1	5.3	0.96
\$35,000–\$74,999	39	26.9	24	27.9	15	25.5	0.52	8	20	7	36.8	0.96
≥ \$75,000	40	27.5	26	30.3	14	23.8	0.52	10	25	4	21.1	0.96
Prefer not to answer income	35	24.1	15	17.4	20	33.9	—	15	37.5	5	26.3	—

Note: Percentages reflect valid percentages (denominator excludes missing responses but includes “prefer not to answer” responses), except for income for which the “prefer not to answer” category is listed.

<sup>a</sup> All participants who completed the preassessment survey (*n* = 147).

<sup>b</sup> Participants who were vaccinated during survey completion and endorsed the motivators and barriers to vaccination (*n* = 88).

<sup>c</sup> Participants who were unvaccinated during survey completion and endorsed the motivators and barriers to vaccination (*n* = 59).

<sup>d</sup> Participants who were nonhesitant (unvaccinated) during survey completion and endorsed the motivators and barriers to vaccination (*n* = 40).

<sup>e</sup> Participants who were hesitant (unvaccinated) during survey completion and endorsed the motivators and barriers to vaccination (*n* = 19).

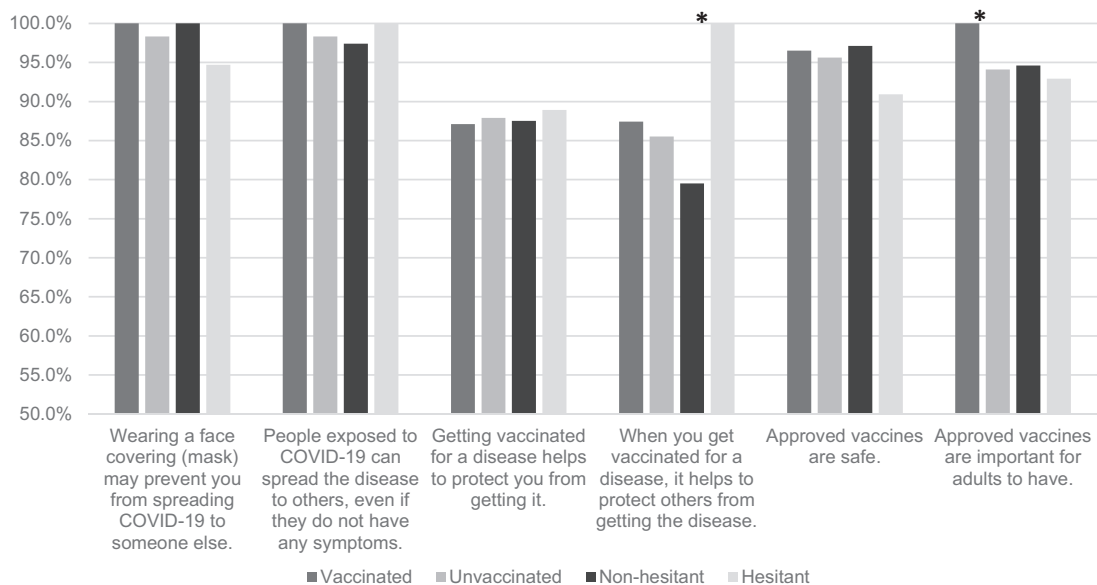
<sup>f</sup> Pearson chi-square tests (categorical) and Mann-Whitney U tests (scale or nominal) were conducted to compare vaccinated and unvaccinated participants and non-hesitant and hesitant participants.

<sup>g</sup> Significant values (*P* ≤ 0.05).

### Findings from the town hall preassessment

We are reporting results from the pre-town hall preassessment, which included questions around COVID-19

vaccine hesitancy, trusted sources, motivators and barriers to get vaccinated, and demographics, among other variables. This group represented a portion of town hall attendees who voluntarily filled out the online survey before the town hall.



**Figure 3.** Town hall preassessment responses to questions about COVID-19 vaccines. Abbreviation used: COVID-19, coronavirus disease 2019. Note: Percentages reflect valid percentages (denominator does not include missing and “don’t know” responses). Sample sizes: vaccinated (*n* = 88), unvaccinated (*n* = 59), nonhesitant (*n* = 40), hesitant (*n* = 19). \*Significant at *P* ≤ 0.05 (Pearson chi-square test of independence).

**Table 2**  
Level of trust of information sources by vaccination and hesitancy subsamples

Information source	Vaccinated <sup>a</sup>			Unvaccinated <sup>b</sup>			Nonhesitant <sup>c</sup>			Hesitant <sup>d</sup>			P <sup>e</sup>	
	n (%)			n (%)			n (%)			n (%)				
	Not at all	A little	A great deal	Not at all	A little	A great deal	Not at all	A little	A great deal	Not at all	A little	A great deal		
Doctor or health care	2 (2.3)	9 (10.3)	76 (87.4)	2 (3.5)	5 (8.8)	50 (87.7)	0.87	2 (5.1)	1 (2.6)	36 (92.3)	0 (0)	4 (22.2)	14 (77.8)	0.04 <sup>f</sup>
Faith leader	28 (39.4)	20 (28.2)	23 (32.4)	16 (31.4)	21 (41.2)	14 (27.5)	0.32	12 (36.4)	12 (36.4)	9 (27.3)	4 (22.2)	9 (50)	5 (27.8)	0.53
Your close friends and members of the family	11 (13.6)	38 (46.9)	32 (39.5)	7 (12.5)	24 (42.9)	25 (44.6)	0.84	5 (13.2)	16 (42.1)	17 (44.7)	2 (11.1)	8 (44.4)	8 (44.4)	0.97
People you go to work or class with or other people you know	15 (18.8)	46 (57.5)	19 (23.8)	11 (19.6)	35 (62.5)	10 (17.9)	0.71	7 (18.4)	22 (57.9)	9 (23.7)	4 (22.2)	13 (72.2)	1 (5.6)	0.25
News on the radio, TV, or in newspapers	14 (16.9)	43 (51.8)	26 (31.3)	17 (30.4)	33 (58.9)	6 (10.7)	0.01 <sup>f</sup>	11 (28.9)	22 (57.9)	5 (13.2)	6 (33.3)	11 (61.1)	1 (5.6)	0.69
Your contacts on social media	39 (47.6)	33 (40.2)	10 (12.2)	35 (63.6)	18 (32.7)	2 (3.6)	0.09	26 (70.3)	9 (24.3)	2 (5.4)	9 (50)	9 (50)	0 (0)	0.12
The U.S. Government	5 (6.1)	43 (52.4)	34 (41.5)	9 (16.4)	32 (58.2)	14 (25.5)	0.05	5 (13.2)	20 (52.6)	13 (34.2)	4 (23.5)	12 (70.6)	1 (5.9)	0.08
The U.S. Coronavirus Task Force	2 (2.4)	25 (30.1)	56 (67.5)	4 (7.3)	19 (34.5)	32 (58.2)	0.29	1 (2.7)	8 (21.6)	28 (75.7)	3 (16.7)	11 (61.1)	4 (22.2)	0.001 <sup>f</sup>
Leaders in your community	10 (12.5)	36 (45)	34 (42.5)	11 (20.4)	33 (61.1)	10 (18.5)	0.01 <sup>f</sup>	6 (16.7)	23 (63.9)	7 (19.4)	5 (27.8)	10 (55.6)	3 (16.7)	0.63
Local politicians	25 (31.3)	45 (56.3)	10 (12.5)	23 (44.2)	28 (53.8)	1 (1.9)	0.06	14 (40)	20 (57.1)	1 (2.9)	9 (52.9)	8 (47.1)	0 (0)	0.57
Billboards	34 (43)	34 (43)	11 (13.9)	35 (64.8)	17 (31.5)	2 (3.7)	0.02 <sup>f</sup>	25 (67.6)	10 (27)	2 (5.4)	10 (58.8)	7 (41.2)	0 (0)	0.41

Note: percentages reflect valid percentages (denominator does not include missing and “don’t know” responses).

- <sup>a</sup> Participants who were vaccinated during survey completion and endorsed the motivators and barriers to vaccination (n = 88).
- <sup>b</sup> Participants who were unvaccinated during survey completion and endorsed the motivators and barriers to vaccination (n = 59).
- <sup>c</sup> Participants who were nonhesitant (unvaccinated) during survey completion and endorsed the motivators and barriers to vaccination (n = 40).
- <sup>d</sup> Participants who were hesitant (unvaccinated) during survey completion and endorsed the motivators and barriers to vaccination (n = 19).
- <sup>e</sup> Pearson chi-square tests were conducted to compare vaccinated and unvaccinated participants and non-hesitant and hesitant participants.
- <sup>f</sup> Significant values (P ≤ 0.05).

First, we assessed the demographics for all participants who completed the preassessment survey, then we split these demographics by vaccination status and hesitancy level (Table 1). We assessed possible demographic differences between unvaccinated and vaccinated and among the unvaccinated, between nonhesitant and hesitant participants. Whether a participant was included in the nonhesitant or hesitant group was based on a 7-point Likert scale question (“How likely are you to take the vaccine?”). Participants who endorsed 1 through 4 were labeled hesitant, and participants who endorsed 5 through 7 were labeled nonhesitant.

Vaccinated and unvaccinated participants statistically significant differed on age (unvaccinated participants being younger on average), number of people in the household (unvaccinated participants living in smaller households on average), and identifying as Haitian (unvaccinated participants on average more often identifying as Haitian). Between unvaccinated nonhesitant and hesitant participants, we did not find any statistically significant demographic differences.

Next, we assessed the attitudes toward and overall level of agreement with statements around COVID-19 prevention measures and the use, safety, and efficacy of vaccines in general (Figure 3). We again compared vaccinated and unvaccinated participants, as well as unvaccinated nonhesitant and hesitant participants. We conducted Pearson chi-square tests of independence to test differences between these groups. We found a statistically significant difference between the vaccinated and unvaccinated groups in agreement with the statement “Approved vaccines are important for adults to have,” such that vaccinated participants agreed more with this statement ( $\chi^2_{(1)} = 4.9, P = 0.03$ ). We also found a statistically significant difference between the nonhesitant and hesitant groups’ agreement with “When you get vaccinated for a disease, it helps to protect others from getting the disease,” such that hesitant participants agreed more with this statement ( $\chi^2_{(1)} = 3.8, P = 0.05$ ).

Regarding trusted sources of COVID-19 information (Table 2), we found statistically significant differences between unvaccinated and vaccinated participants for news on the TV, radio, newspapers (more trust among vaccinated;  $\chi^2_{(1)} = 9.2, P = 0.01$ ), community leaders (more trust among vaccinated,  $\chi^2_{(1)} = 8.5, P = 0.01$ ), and billboards (more trust among vaccinated,  $\chi^2_{(1)} = 7.5, P = 0.02$ ). We also found statistically significant differences in trusted information sources between unvaccinated hesitant and nonhesitant participants, with more trust among the nonhesitant in physicians or health care workers ( $\chi^2_{(1)} = 6.6, P = 0.04$ ), and the U.S. Coronavirus Task Force ( $\chi^2_{(1)} = 14.7, P = 0.001$ ).

Third, we assessed motivators and barriers among survey respondents by vaccination status and hesitancy level (Table 3). The motivators and barriers were in a “please select all that apply” format. We conducted Pearson chi-square tests of independence to assess differences in endorsement of motivators and barriers between vaccinated and unvaccinated participants and between nonhesitant and hesitant participants. Regarding differences between vaccinated and unvaccinated participants, all but one motivator (“I believe life won’t go back to normal until most people get a COVID-19 vaccine”) were statistically significant more frequently endorsed by vaccinated participants than by unvaccinated participants. In regard to barriers, only 2 barriers did not statistically significant differ between vaccinated and unvaccinated participants (“I don’t want to pay

**Table 3**  
Motivators and barriers to vaccination by vaccination and hesitancy subsamples

Motivator or barrier	Vaccinated		Unvaccinated			Nonhesitant		Hesitant		
	n <sup>a</sup>	% <sup>a</sup>	n <sup>b</sup>	% <sup>b</sup>	P <sup>e</sup>	n <sup>c</sup>	% <sup>c</sup>	n <sup>d</sup>	% <sup>d</sup>	P <sup>e</sup>
<b>Motivators</b>										
I want to keep my family safe	82	93.2	45	76.3	< 0.01 <sup>f</sup>	33	82.5	12	63.2	0.1
I want to keep my community safe	71	80.7	34	57.6	< 0.01 <sup>f</sup>	29	72.5	5	26.3	0.001 <sup>f</sup>
I want to keep myself safe	74	84.1	41	69.5	0.04 <sup>f</sup>	34	85	7	36.8	< 0.001 <sup>f</sup>
I have a chronic health problem, like asthma or diabetes	24	27.3	3	5.1	0.001 <sup>f</sup>	2	5	1	5.3	0.97
My doctor told me to get a COVID-19 vaccine	14	15.9	3	5.1	0.04 <sup>f</sup>	3	7.5	0	0	0.22
I don't want to get really sick from COVID-19	61	69.3	28	47.5	< 0.01 <sup>f</sup>	22	55	6	31.6	0.09
I want to feel safe around other people	69	78.4	35	59.3	0.01 <sup>f</sup>	24	60	11	57.9	0.88
I believe life won't go back to normal until most people get a COVID-19 vaccine	61	69.3	34	57.6	0.15	28	70	6	31.6	< 0.01 <sup>f</sup>
<b>Barriers</b>										
I'm allergic to vaccines	10	11.4	1	1.7	0.03 <sup>f</sup>	0	0	1	5.3	0.14
I don't like needles	4	4.5	6	10.2	0.18	6	15	0	0	0.08
I'm not concerned about getting really sick from COVID-19	0	0	7	11.9	0.001 <sup>f</sup>	4	10	3	15.8	0.52
I'm concerned about side effects from the vaccine	23	26.1	36	61	< 0.001 <sup>f</sup>	21	52.5	15	78.9	0.052
I don't think vaccines work very well	1	1.1	5	8.5	0.03 <sup>f</sup>	3	7.5	2	10.5	0.7
I don't trust that the vaccine will be safe	7	8	19	32.2	< 0.001 <sup>f</sup>	7	17.5	12	63.2	< 0.001 <sup>f</sup>
I don't believe the COVID-19 pandemic is as bad as some people say it is	2	2.3	6	10.2	0.04 <sup>f</sup>	2	5	4	21.1	0.06
I don't want to pay for it	6	6.8	3	5.1	0.67	2	5	1	5.3	0.97
I don't know enough about how well a COVID-19 vaccine works	11	12.5	19	32.2	< 0.01 <sup>f</sup>	11	27.5	8	42.1	0.26

Abbreviation used: COVID-19, coronavirus disease 2019.

Note: percentages reflect valid percentages (denominator does not include missing and "don't know" responses).

<sup>a</sup> Participants who were vaccinated during survey completion and endorsed the motivators and barriers to vaccination (n = 88).

<sup>b</sup> Participants who were unvaccinated during survey completion and endorsed the motivators and barriers to vaccination (n = 59).

<sup>c</sup> Participants who were nonhesitant (unvaccinated) during survey completion and endorsed the motivators and barriers to vaccination (n = 40).

<sup>d</sup> Participants who were hesitant (unvaccinated) during survey completion and endorsed the motivators and barriers to vaccination (n = 19).

<sup>e</sup> Pearson chi-square tests were conducted to compare vaccinated and unvaccinated participants and nonhesitant and hesitant participants on endorsement of motivators and barriers to vaccination.

<sup>f</sup> Significant values ( $P \leq 0.05$ ).

for it" and "I don't like needles"). All other barriers were statistically significant more frequently endorsed by unvaccinated participants, with the exception of "I am allergic to vaccines," which was statistically significant more frequently endorsed by vaccinated participants.

The motivators "I want to keep my family safe," "I want to keep my community safe," "I want to keep myself safe," and "I believe life won't go back to normal until most people get a COVID-19 vaccine" were all statistically significant more frequently endorsed by nonhesitant participants than hesitant participants. The barrier "I don't trust that the vaccine will be safe" was statistically significant more frequently endorsed by hesitant participants than nonhesitant participants.

#### *Preliminary findings on consumer satisfaction with town halls*

At the conclusion of the town halls, we gave participants the opportunity to provide open-ended feedback about the meetings. Comments were universally positive and included responses such as: "To reaffirm the value of that Town Hall, I was just approached by a staff member that attended and said he changed his mind and will get the vaccine ASAP! Keep up the great work!!!!", "The speakers were clear in their message. They seemed approachable and the language they used was easy to understand." and "Excellent meeting that reassured my concerns about getting vaccinated." Moreover, in debriefing meetings, we asked our partnering CBOs about

their satisfaction with the meetings. Universally, the CBOs were pleased with the preparations, processes, and outcomes associated with the town halls.

#### **Discussion**

Capitalizing on the extensive community network of FIU's NIMHD-supported RCMI (FIU-RCMI; NIMHD grant U54MD 012393), we conducted 6 virtual town halls designed to address vaccine hesitancy among racial and ethnic minorities in South Florida. Our town hall content was informed by social influence and persuasion models; guided by community stakeholders; and addressed the nature, development, mechanisms of action, and virtues of vaccination. Moreover, we conducted pre- and post-assessments of reasons for and barriers to vaccination and trust in sources of information and sought feedback on consumer satisfaction with the town halls in a rigorous and technologically savvy manner.

Based on the number of Zoom log-ins, an estimated total of 379 participants attended our town halls. The total number of people we reached was likely larger. Our CBO partners reported many participants had attended our town halls with family members and friends alongside. These anecdotal reports suggest our reach was greater than indicated solely by Zoom log-ins. In response, when conducting virtual town halls in the future, we recommend asking participants how many



people are watching with them. Owing to the anonymity of the data collected, we could not control for intrahousehold or intrafamily influence and shared perspectives.

This resource, time, and technology intensive enterprise was supported by a research supplement granted to the FIU-RCMI. A COVID-19 town hall project of this magnitude and success would have been impossible without the established infrastructure of the FIU-RCMI, the collaborative investment of our community partners, and the financial contributions of NIMHD. Although our results support the feasibility, acceptability, and impact of our town halls for addressing vaccine hesitancy among racial or ethnic minorities, the immediate effect was small ( $d = 0.32$ ), and nearly half of our participants had already received at least 1 dose of vaccine. Second, the analysis of our demographics showed that there were few statistically significant differences between any demographic outcomes on vaccination and hesitancy status. We found unvaccinated individuals to be statistically significant younger (aged 30 years on average) than vaccinated individuals (aged 49 years on average). Furthermore, our preassessment results identified several important outcomes, such as differences in trusted and mistrusted sources of COVID-19 information among unvaccinated and hesitant participants versus vaccinated and nonhesitant participants. In addition, we found several barriers to vaccination, such as concerns about adverse effects and efficacy, as well as not viewing the pandemic as serious, especially prevalent among the unvaccinated. We found these barriers also common among hesitant participants.

The small effect size of impact speaks both to the challenges of addressing vaccination hesitancy among the undecided, who may distrust authorities advocating vaccination and hold strong beliefs counter to vaccination, and to the likelihood of “preaching to the choir” when conducting community-based disease prevention and health promotion interventions. Another caveat of our findings was variability across the town halls vis-à-vis vaccine eligibility; our first town hall was held 3 weeks before widespread vaccine eligibility for adults in Florida, our second 2 weeks before, and our third 1 day before, whereas the later 3 town halls took place after. Other notable limitations of our study included the virtual town hall format itself (which limited participation to those with digital access); somewhat small samples of unvaccinated and vaccine-hesitant participants; and the absence of data concerning participants’ education level, access to vaccination, and familial vaccine status and attitudes.

The town hall format enabled us to provide educational materials in an effective and efficient manner, while harnessing community-academic partnerships to adapt to diverse South Floridian communities. This approach is in line with recent guidance on how to implement health promotion strategies to reduce COVID-19 vaccine hesitancy.<sup>29–31</sup> The virtual town hall format we applied lends itself well for other populations, although partnering with community organizations remains crucial to adapt and customize this format to the population of reference.<sup>32</sup>

## Conclusion

We conducted virtual town halls designed to address COVID-19 vaccine hesitancy among racial and ethnic minorities in South Florida and showed that such an approach is feasible

and potentially impactful for addressing vaccine hesitancy. However, the effort was resource intensive, required an extensive community-university collaborative infrastructure, and yielded a small effect. Given widespread availability of COVID-19 vaccines in the United States, along with the plateauing of vaccine uptake among Americans and the emergence of the highly virulent Delta variant, efforts now need to concentrate on addressing vaccine hesitancy among the undecided, who may be particularly resistant to social influence and persuasion approaches promoting COVID-19 vaccination, and particularly vulnerable to the Delta variant. Encouraged and informed by these preliminary findings, and in response to recent developments in the COVID-19 pandemic, we intend to conduct additional town halls in a hybrid format (both virtual and live), with content and participant recruitment refinements for reaching the unvaccinated and undecided.

## Acknowledgements

The authors would like to thank the FIU-RCMI Community Advisory Board, in particular the Healthy Start Coalition of Miami, and the collaborating community organizations for their input, partnership, and efforts in this project.

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