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COVID-19 Vaccine Acceptability Among Clients and Staff of Homeless Shelters in Detroit, Michigan, February 2021

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Abstract

Understanding COVID-19 vaccine acceptability among clients and staff of homeless shelters can inform public health efforts focused on communicating with and educating this population about COVID-19 vaccines and thus improve vaccine uptake. The objective of this study was to assess COVID-19 vaccine acceptability and uptake among people in homeless shelters in Detroit, Michigan. A cross-sectional study was conducted from February 9 to 23, 2021. Seventeen homeless shelters were surveyed: seven male-only, three male/female, and seven women and family shelters. All clients and staff aged 18 years and able to complete a verbal survey in English or with a translator were eligible to participate; of the 168 individuals approached, 26 declined, leaving a total sample of 106 clients and 36 staff participating in the study. The median client and staff ages were 44 and 54 years, respectively. Most participants (>80%) identified as non-Hispanic Black or African American. Sixty-one (57.5%) clients and 27 (75.5%) staff had already received or planned to receive a COVID-19 vaccination. Twelve (11.3%) clients and four (11.1%) staff were unsure, and 33 (31.1%) clients and five (13.9%) staff did not plan to get vaccinated. Reasons for hesitancy were concerns over side effects (29 clients [64.4%] and seven staff [77.8%]) and unknown long-term health impacts (26 clients [57.8%] and six staff [66.7%]). More than half of the clients had already received or planned to receive the vaccine. Continuing efforts such as vaccine education for hesitant clients and staff and having accessible vaccine events for this population may improve acceptability and uptake.

Keywords

health promotion; health disparities; immunization; surveys; program planning and evaluation; health education

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People experiencing homelessness (PEH) living in homeless shelters are at increased risk for coronavirus disease 2019 (COVID-19) because of shared living spaces in congregate settings and the movement among PEH between shelters (Imbert et al., 2020; Mosites et al., 2020; Rogers et al., 2021). Shelter staff share this increased risk, and for these reasons, some states prioritized PEH and homeless service staff in earlier vaccination phases before vaccines were available to all adults (Centers for Disease Control and Prevention [CDC], 2021a; CDC, 2021b).

PURPOSE

In Detroit, Michigan, homeless shelters serve an estimated 1,315 of the 1,965 individuals experiencing homelessness each year (U.S. Department of Housing and Urban Development, 2020). In January 2021, the Detroit Health Department (DHD) began conducting COVID-19 vaccination events at homeless shelters, where all clients and staff were eligible to receive the first dose of a two-dose COVID-19 vaccination series. After initial events at all shelters, DHD estimated that 65% of staff and only 27% of clients from homeless shelters had received the first dose of the COVID-19 vaccine (DHD, internal communication, February 2, 2021). Reasons for low coverage among clients were unclear. To better understand the reasons for low coverage and identify opportunities to expand vaccination coverage, we conducted a vaccine acceptability and uptake assessment among clients and staff from homeless shelters in Detroit, Michigan.

METHODS

During a COVID-19 field response, staff from the CDC and DHD conducted surveys in February 2021 to inform DHD's COVID-19 vaccination outreach and education efforts with clients and staff of homeless shelters.

All 24 shelters in Detroit were stratified by type of population served (male only, male and female, and women and family), and study shelters were selected proportionate to the shelter types. For every two male-only shelters, one male and female shelter and one women and family shelter were selected. Twelve shelters with the highest censuses were initially selected using this method. Five additional facilities (two male-only and three women and family shelters) were added based on scheduling availability for a total of 17 included sites (71% of all shelters). The selected shelters currently serve more than 900 clients and employ 250 staff and volunteers.

Clients and staff aged 18 years staying or working at the selected homeless shelters who could complete a verbal survey in English or with a translator were eligible to participate. Even though the selected shelters serve more than 900 clients, we assumed that some clients would be out in their community during the time of surveys. As a result, the survey team aimed for a convenience sample of at least 100 clients and 30 staff. Recruitment varied based on shelter management preferences: In nine facilities, the survey team approached clients; in the eight other facilities, management recruited clients.

The survey team obtained verbal consent after reading a script that outlined the purpose of the survey, informed participants that their participation and responses were voluntary,

and confirmed that participation would not affect their current or future housing or benefits. Participation incentives were not provided. This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.¹

Survey questions were selected from a question bank developed by CDC's Vaccine Confidence Group. The survey was then reviewed by DHD for appropriateness and feasibility and piloted at the first shelter with six clients and one staff member. The survey captured information about participant demographics, COVID-19 vaccine information sources, and whether they had already received or were planning on receiving a COVID-19 vaccine. Those who had received one or more doses, or were planning on receiving the vaccine, were asked standardized questions capturing their motivation(s) for receiving the vaccine. Those who were not planning on receiving the vaccine or who were unsure were asked about reasons for their decision and what would improve their comfort and motivation to receive the vaccine. The survey took approximately 15 minutes.

At the conclusion of the surveys, participants wanting more information were provided with COVID-19 vaccination resources from CDC (2021c) and upcoming vaccination event dates and locations. Survey results were analyzed and presented descriptively.

RESULTS

From February 9 to 23, 2021, 168 individuals were approached and invited to participate in the survey; 26 (15.5%) individuals declined. Of the 142 participants, 106 (74.6%) were clients and 36 (25.4%) were staff. Clients had a median age of 44 years (range: 18–70 years), and staff had a median age of 54 years (23–72 years). More than half (58.5%) of the clients were male, and a majority (88.3%) were non-Hispanic Black or African American (Table 1); 88.2% of the staff identified as non-Hispanic Black or African American.

Forty-six (43.4%) clients and 25 (69.4%) staff had already received at least one dose of COVID-19 vaccine (Table 2). Fifteen (14.2%) clients and two (5.6%) staff were planning on receiving a vaccine, 33 (31.1%) clients and five (13.9%) staff were not planning on receiving a vaccine, and 12 (11.3%) clients and four (11.1%) staff remained unsure.

For clients and staff who were already vaccinated or who were planning to receive a COVID-19 vaccine, the two most common motivators to receive a COVID-19 vaccine for both clients and staff were to protect their own health (54 clients [88.5%] and 25 staff [92.6%]) and to protect the health of family and friends (51 clients [83.6%] and 23 staff [85.2%]) (Table 3).

Among those who were unsure about or not planning to receive a vaccine, the most commonly reported reasons for their decision was concern over systemic side effects such as fever or body aches (29 clients [64.4%] and 7 staff [77.8%]), concern over unknown long-term health effects (26 clients [57.8%] and 6 staff [66.7%]), and concern about the vaccines being new (21 clients [46.7%] and 4 staff [44.4%]). Twenty-four (53.3%) clients

¹See, for example, 45 C.F.R. part 46; 21 C.F.R. part 56; and 42 U.S.C. §241(d), 5 U.S.C. §552a, 44 U.S.C. §3501 et seq.

also specified “Other” reasons why they were not planning on receiving the vaccine, which included fear of dying from the vaccine or concerns about specific health histories.

Participants who did not want to receive a COVID-19 vaccine or were uncertain about receiving a vaccine were asked an open-ended question if anything would help them feel more comfortable receiving a vaccine (data not shown). Most clients (29; 64.4%) did not offer a recommendation. Some clients (6; 13.3%) expressed that they would feel more comfortable if their family or friends received it or if a doctor or nurse recommended it.

Among everyone surveyed, the most common and most trusted sources of information about COVID-19 vaccines were news sources (75 clients [70.8%] and 30 staff [83.3%]). A total of 16 (15.1%) clients shared that they trust primary care providers the most. Staff also reported receiving information from the DHD (26; 72.2%), other staff of homeless shelters (22; 61.1%), family and friends (22; 61.1%), and social media (21; 58.3%).

DISCUSSION AND IMPLICATIONS FOR PRACTICE

There are several limitations to this study. First, this convenience sample and small sample size in one city limit generalizability to PEH in other locations. Next, when shelter staff recruited clients, the survey team could not verify what had been shared with clients, and thus participants from those shelters may be different from those who participated at other shelters. Additionally, shelters were visited during daytime work hours, which may have consistently missed clients who work during those times. Most of those experiencing homelessness in Detroit identify as male and non-Hispanic Black or African American (67.4% and 88.5%, respectively), so the survey sample is reflective of the larger group of PEH in Detroit in terms of gender, race, and ethnicity (U.S. Department of Housing and Urban Development, 2020).

Achieving high vaccination coverage among clients and staff of homeless service sites is critical to preventing morbidity and mortality from COVID-19. These survey results showed that a sizeable proportion of homeless service clients in Detroit had received or planned to receive a COVID-19 vaccine. DHD was able to use the information from this survey to incorporate more information about side effects, how the COVID-19 vaccinations were developed, and how the vaccination helps build the immune system into existing education materials. Additional print materials and fact sheets were also developed with this information for distribution at shelters. Health departments and other vaccination providers can hold ongoing vaccine events at shelters to ensure vaccine is available and accessible so clients and staff can initiate and complete a vaccination series, even if clients move to a different shelter or location. Additionally, having primary care providers and health educators at vaccination events to answer questions, might help clients and staff make an informed decision.

Despite a large proportion of PEH willing to receive a COVID-19 vaccine, some clients were still hesitant. Concerns about side effects and fear of unknown long-term impacts of the vaccine as the primary reasons for hesitancy are similar to those expressed by the general population (Coustasse et al., 2021; Gharpure et al., 2021; Hamel et al., 2021; Nguyen et

al., 2021). Despite similarities in reasoning, vaccine confidence interventions for the general population might not reach PEH. Tailored outreach to PEH should be considered to ensure the highest possible vaccination coverage.

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TABLE 1

Demographics of Homeless Shelter Staff ($n = 36$) and Clients ($n = 106$) Participating in Vaccine Acceptability Survey—Detroit, MI, February 9–23, 2021^a

Demographic	Clients (N = 106), n (%)	Staff (N = 36), n (%)
Age (years)		
18–24	25 (23.6)	2 (5.6)
25–34	14 (13.2)	6 (16.7)
35–44	17 (16.0)	3 (8.3)
45–54	18 (17.0)	9 (25.0)
55–64	25 (23.6)	10 (27.8)
65–74	7 (6.6)	6 (16.7)
Sex		
Female	44 (41.5)	20 (55.6)
Male	62 (58.5)	16 (44.4)
Race ^{b,c}		
American Indian or Alaska Native	3 (2.9)	0 (0.0)
Asian	0 (0.0)	0 (0.0)
Black or African American	91 (88.3)	30 (88.2)
Native Hawaiian or Other Pacific Islander	1 (1.0)	0 (0.0)
White	14 (13.6)	4 (11.8)
Missing	3 (2.8)	2 (5.6)
Ethnicity ^b		
Hispanic or Latino	4 (3.8)	0 (0.0)
Non-Hispanic or Latino	101 (96.2)	36 (100.0)
Missing	1 (0.9)	0 (0.0)
Underlying conditions ^{b,d}		
Yes	65 (63.1)	21 (60.0)
No	38 (36.9)	14 (40.0)
Missing	3 (2.8)	1 (2.8)

<i>Demographic</i>	<i>Clients (N = 106), n (%)</i>	<i>Staff (N = 36), n (%)</i>
Participant reported one or more potential disability ^e		
Yes	23 (21.7)	0 (0.0)
No	83 (78.3)	36 (100.0)
Previous COVID-19 illness ^b		
Yes	16 (15.1)	3 (8.6)
No	90 (84.9)	32 (91.4)
Missing	0 (0.0)	1 (2.8)
Concern about becoming sick with COVID-19 illness		
Not at all concerned	26 (24.5)	7 (19.4)
A little concerned	17 (16.0)	5 (13.9)
Moderately concerned	24 (22.6)	10 (27.8)
Very concerned	39 (36.8)	14 (38.9)

^aPercentages might not add up to 100% due to rounding.

^bParticipants were allowed to decline answering to any specific question(s), resulting in missing data for some variables.

^cParticipants were allowed to select multiple races; thus, totals may exceed 103 clients (3 clients missing race) and 24 staff (2 staff missing race).

^dParticipants were asked if they had any conditions from a list of health conditions. Those who shared they had one or more of the conditions, were recoded as “yes,” and those who did not have any, were coded as “no.” Health conditions included cancer; chronic kidney disease; chronic obstructive pulmonary disease; heart conditions such as heart failure, coronary artery disease, or cardiomyopathies; obesity or severe obesity; sickle cell disease; type 2 diabetes mellitus; immunocompromised due to solid organ transplant; currently pregnant; and if they were a current smoker.

^eOriginal question asked whether, because of a physical, mental, or emotional condition, the participant had difficulty doing errands alone such as visiting a doctor’s office or shopping. Answers were provided as “yes” or “no” by the participant; specific information about potential difficulties were not captured.

Receipt of and Plans for Receiving a COVID-19 Vaccine Among Clients and Staff at Homeless Service Sites—Detroit, MI, February 9–23, 2021^a

TABLE 2

COVID-19 vaccine status	Clients (N = 106), n (%)	Staff (N = 36), n (%)
Have you received a COVID-19 vaccine?		
Yes, I have received a COVID-19 vaccine	46 (43.4)	25 (69.4)
No, I have not received a COVID-19 vaccine	60 (56.6)	11 (30.6)
If yes, did you or will you receive all doses? ^b		
Yes, received all required doses ^c	18 (39.1)	6 (24.0)
Yes, plan to receive all required doses ^c	27 (58.7)	18 (72.0)
No, don't plan to receive all required doses ^c	1 (2.2)	1 (4.0)
If no, if a COVID-19 vaccine were available to you would you get it? ^d		
Yes, would get it as soon as possible ^d	10 (16.7)	1 (9.1)
Yes, but plan to wait to get it ^d	5 (8.3)	1 (9.1)
Not sure ^d	12 (20.0)	4 (36.4)
No ^d	33 (55)	5 (45.5)

^aPercentages may not add up to 100 due to rounding.

^bOnly two-dose vaccination series were offered during the timeframe of the project.

^cOnly asked of those that had already received one dose (n = 46 clients and n = 25 staff).

^dDenominator is only those who had not yet received any dose of a COVID-19 vaccine (n = 60 clients and n = 11 staff).

TABLE 3

Motivators, Concerns, and Sources of Information Regarding COVID-19 Vaccines by Vaccination Intent/Plans Among Homeless Shelter Clients (*n* = 106) and Staff (*n* = 36) Participating in a Vaccine Acceptability Survey—Detroit, MI, February 9–23, 2021^a

Motivators/concerns/sources of information	Already vaccinated (1 dose) or planning to get vaccinated (n = 88)			Will not get vaccinated or not sure (n = 54)	
	Clients (N = 61), n (%)	Staff (N = 27), n (%)	Clients (N = 45), n (%)	Staff (N = 9), n (%)	Staff (N = 9), n (%)
What motivated you/would motivate you to get vaccinated? (Respondents could select all that apply)					
Protect my health	54 (88.5)	25 (92.6)	16 (35.6)	4 (44.4)	
Protect health of family/friends	51 (83.6)	23 (85.2)	20 (44.4)	5 (55.6)	
Protect health of community	43 (70.5)	20 (74.1)	10 (22.2)	2 (22.2)	
Protect health of coworkers	30 (49.2)	21 (77.8)	9 (20.0)	1 (11.1)	
To resume social activities	21 (34.4)	14 (51.9)	5 (11.1)	0 (0.0)	
To resume travel	16 (26.2)	14 (51.9)	6 (13.3)	1 (11.1)	
To get back to work/school	17 (27.9)	7 (25.9)	7 (15.6)	0 (0.0)	
Encouraged by others or someone I trust ^b	17 (27.9)	8 (29.6)	4 (8.9)	0 (0.0)	
Other	6 (9.8)	0 (0.0)	7 (15.6)	1 (20.0)	
Not sure	N/A	N/A	11 (24.4)	0 (0.0)	
What motivated you/would motivate you the most to get vaccinated? ^c					
Protect my health	36 (59.0)	10 (37.0)	7 (15.6)	1 (20.0)	
Protect health of family/friends	12 (19.7)	11 (40.7)	12 (26.7)	4 (44.4)	
Protect health of community	3 (4.9)	3 (11.1)	0 (0.0)	0 (0.0)	
What were/are your concerns about COVID-19 vaccines?					
Worried about systemic side effects	22 (36.1)	14 (51.9)	29 (64.4)	7 (77.8)	
Nervous that these are new vaccines	23 (37.7)	11 (40.7)	21 (46.7)	4 (44.4)	
Worried about long-term health effects	14 (23.0)	9 (33.3)	26 (57.8)	6 (66.7)	
Concern about human experimentation	18 (29.5)	7 (25.9)	16 (35.6)	5 (55.6)	
Don't think the vaccine will work	12 (19.7)	4 (14.8)	15 (33.3)	5 (55.6)	
Did not have any concerns	19 (31.1)	8 (29.6)	N/A	N/A	
Need more information	11 (18.0)	2 (7.4)	9 (20.0)	2 (22.2)	
Don't trust the medical field	6 (9.8)	3 (11.1)	13 (28.9)	1 (20.0)	
Concern about immediate pain	8 (13.1)	3 (11.1)	8 (17.8)	1 (20.0)	

Motivators/concerns/sources of information	Already vaccinated (1 dose) or planning to get vaccinated (n = 88)		Will not get vaccinated or not sure (n = 54)	
	Clients (N = 61), n (%)	Staff (N = 27), n (%)	Clients (N = 45), n (%)	Staff (N = 9), n (%)
Fear of needles	5 (8.2)	2 (7.4)	4 (8.9)	2 (22.2)
Other ^d	10 (16.4)	4 (14.8)	24 (53.3)	5 (55.6)
From where have you received your information about COVID-19 vaccines? ^e (Respondents could select all that apply)				
News sources	47 (77.0)	21 (77.8)	28 (62.22)	9 (100.0)
Social media (e.g., Facebook, Twitter, Instagram, LinkedIn, or TikTok)	19 (31.1)	19 (70.4)	22 (48.9)	2 (22.2)
Homeless shelter (staff, other residents, posters, pamphlets, or info sessions)	33 (54.1)	18 (66.7)	27 (60.0)	4 (44.4)
Family and friends	22 (36.1)	17 (63.0)	17 (37.8)	5 (55.6)
Local health officials (Detroit Health Department)	19 (31.1)	19 (70.4)	13 (28.9)	7 (77.8)
Primary care providers	21 (34.4)	14 (51.9)	10 (22.2)	2 (22.2)
Centers for Disease Control and Prevention	12 (19.7)	10 (37.0)	7 (15.6)	4 (44.4)
Hospital system websites (Henry Ford Health System (HFHS), Detroit Medical Center (DMC), St. John's Providence, Dingell, VA)	16 (26.2)	6 (22.2)	6 (13.3)	2 (22.2)
Which sources of information about COVID-19 vaccines do you trust the most? ^f				
News sources	23 (37.7)	2 (7.4)	12 (26.7)	0 (0.0)
Primary care providers	10 (16.4)	4 (14.8)	6 (13.3)	1 (11.1)
Centers for Disease Control and Prevention (CDC)	8 (13.1)	3 (11.1)	1 (2.2)	4 (44.4)

Note. N/A = not applicable.

^a Percentages may not add up to 100 due to rounding.

^b For those already received or planning on receiving, the answer option was "because others encouraged me to get vaccinated." For those unsure or not planning on receiving, the answer option was "if someone I trust encourages me to get vaccinated."

^c Only the three most common responses are shown.

^d "Other" included fear of death or dying from the vaccine (nine clients; 20.0%) and concerns if they can receive a vaccine with their specific health histories, current conditions, and medications (five clients; 11.1%).

^e Only the eight most common responses are shown.

^f Only the three most common responses are shown.