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Perceived Advantages of and Concerns About Mobile Food Pantries Among Mothers Who Utilized Food Pantries Before or During the COVID-19 Pandemic

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ABSTRACT

The COVID-19 pandemic drastically increased the demand for food pantries. Using data from an online survey in early spring 2021, we explored interest in mobile food pantries among US mothers who received food from a food pantry before or during the COVID-19 pandemic ($n = 53$). Sixty percent were very interested in getting food from a mobile food pantry, 19% were quite a bit interested, and 21% were somewhat interested. Participants liked the convenience and reduced risk of COVID-19 infection but had cleanliness and accessibility concerns. Mobile food pantries may be one approach to address food access among households with children.

KEYWORDS

Mobile food pantries; food insecurity; mothers; COVID-19 pandemic

Introduction

The prevalence of food insecurity rose among US households with children during the COVID-19 pandemic, from 13.6% in 2019 to 14.8% 2020.¹ Families experiencing loss or reduction of employment were especially likely to experience new food insecurity.¹ Food pantries distribute food to households with both acute and persistent food needs, including those with acute financial hardships and income that varies month to month.² As a result, food pantries experienced a dramatic rise in demand during the beginning of the COVID-19 pandemic.^{3,4} Greater demand combined with the need for social distancing, other measures to prevent COVID-19 spread, and disruptions to supply chains required pantries to adapt their procedures to manage long lines, understaffing, and food shortages.⁵⁻⁷ The response to the COVID-19 pandemic varied across the charitable food system and included the deployment of new food distribution sites, processes for distributing the increase in USDA commodity foods, and drive-through and delivery options.^{7,8}

Increasing the availability of mobile food pantries may be one approach to address challenges faced by food pantries and pantry clients during the

COVID-19 pandemic while also filling regional gaps in the distribution of charitable foods.⁹ A mobile food pantry is a vehicle that delivers foods to clients' houses or to a neighborhood distribution site. Like mobile markets that offer food for purchase,¹⁰ mobile food pantries can bring food to areas where residents may face transportation and other barriers to accessing fresh and staple foods.¹¹ Mobile food pantries may be particularly appealing for families with young children, as this approach to food distribution reduces need for childcare or traveling to a food pantry with children in tow. While research is emerging on characteristics of mobile food pantry clients,¹²⁻¹⁴ studies have not focused on families with children.

Among US families with children, single-parent households headed by women are substantially more likely to be food insecure than married-couple households (27.7% vs 9.5%).¹ Women are more likely than men to report being the one to usually do the grocery shopping for two-parent families,¹⁵ and food pantry clients are more likely to be women than men.² A study of pantry clients from Arizona found that women were more likely than men to utilize mobile food pantries compared to brick-and-mortar pantries.¹² Understanding mothers' experiences with food pantries during the COVID-19 pandemic and thoughts about mobile food pantries can inform approaches to increase food access and food security among families with children. This study consists of three aims. First, we examined mothers' experiences getting food at food pantries or food banks during the COVID-19 pandemic. Second, we examined mothers' interest in a mobile food pantry. Third, we explored mothers' thoughts about getting food from a mobile food pantry, specifically what they liked best and any concerns.

Materials and Methods

This study is a secondary analysis of data from an online survey of mothers conducted in February and March 2021. The primary aim of the parent study was to examine how mothers respond to misleading information about child nutrition they encounter on social media. Eligible participants were 18 years or older, reported being a mother of at least one child 0–12 years old, active social media user (i.e., posted or replied on Facebook, Instagram, and/or Twitter in the last 7 days), residing in the US, able to complete the survey in English or Spanish, and willing to provide informed consent. We recruited participants on ResearchMatch.¹⁶ We searched for potential participants stratified by race/ethnicity to increase the diversity of our sample. Participants were sent a reminder to complete the survey one day after the initial survey invitation. The survey was administered through Qualtrics (Qualtrics LLC, Provo, UT). After reading an information sheet describing the study, participants electronically provided informed consent. The survey was designed to take 15–30 minutes to complete; participants completed it in a median of 17 minutes

(IQR: 12–24 minutes). Mothers who completed the survey were emailed a \$20 gift card. The University of Connecticut’s Institutional Review Board approved this study (# L19–032). Data that support the findings of this study are available from the corresponding author upon reasonable request.

Participants were provided a list of 17 food sources and asked to select from which sources their family got food, in the year before the COVID-19 pandemic and then during the COVID-19 pandemic. Women who selected food pantry or food bank at either time point were included in the current analysis. Participants indicated their agreement with statements about their experiences obtaining food from food pantries or food banks during the COVID-19 pandemic (i.e., food offered by the food pantry was very helpful for their household, food pantie hours are inconvenient or irregular, there are long lines/long wait times, there are limits on how often we can visit the food pantry close to our home)¹⁷; we collapsed responses of “strongly agree” or “agree” versus “neither,” “disagree,” or “strongly disagree.” We described what a mobile pantry could look like: “A mobile food pantry is a van or truck that brings fresh fruits and vegetables, canned goods, and other foods to communities. Some mobile food pantries make stops at one place, like a school, public library, or YMCA, while other mobile food pantries make stops at people’s houses or apartment buildings. Similar to regular food pantries, some mobile food pantries have pre-packed bags of food, and some have a selection of foods you can chose on your own.” We then asked women “how interested would you be in getting food from a mobile pantry?” (response options: not at all interested, a little bit interested, somewhat interested, quite a bit interested, or very interested). Finally, we asked the women two open-ended questions: “What do you like best about the idea of a mobile food pantry?” and “What are your concerns about a mobile food pantry?” Participants completed the USDA’s 18-item household food insecurity measure.¹⁸ Responses indicating inconsistent food access were summed, and food security was categorized as high (0), marginal (1–2), low (3–7), or very low (8–18).¹⁸ Participants also reported demographic characteristics.

Statistical analyses

We described the characteristics of mothers who got food from a food pantry before or during the COVID-19 pandemic, and participants’ experiences with food pantries during the pandemic. We conducted a content analysis¹⁹ of mothers’ likes and concerns about mobile food pantries. Three members of the research team developed a codebook after an initial review of participant responses. Two coders reviewed all responses and coded the presence of each theme (83% agreement for like themes, 87% agreement for concerns themes), and the third member of the coding team reviewed discrepantly-coded responses and adjudicated. Data management and descriptive analyses were conducted using SAS 9.4 (SAS Institute, Inc, Cary, NC).

Results

Of the 306 women who completed the parent survey, 17% ($n = 53$) reported getting food from a food pantry or food bank before and/or during the COVID-19 pandemic: 8% ($n = 25$) in the year before the pandemic and 14% ($n = 43$) during the pandemic; 5% of the sample ($n = 15$) reported getting food from food pantries both before and during the pandemic. Participants reporting food pantry use before and/or during the pandemic ($n = 53$) were on average aged 35.9 (SD: 6.4) years old, were racially/ethnically diverse, highly educated, and experiencing financial strain and food insecurity (Table 1).

Among women who used a food pantry during the pandemic ($n = 43$), 77% ($n = 33$) agreed or strongly agreed that the food was very helpful for their households, but 70% ($n = 30$) reported long lines or wait times, 51% ($n = 22$) reported inconvenient or irregular hours, and 63% ($n = 27$) reported limits on how often they could visit the food pantry close to their home.

Among women who reported using a food pantry or food bank before or during the COVID-19 pandemic ($n = 53$), 60% ($n = 32$) were very interested in

Table 1. Characteristics of mothers who got food from food pantries or food banks the year before or during the COVID-19 pandemic ($N = 53$), n (%) or $M \pm SD$.

Age (years)	35.9 \pm 6.4
Race/ethnicity	
Non-Hispanic White	10 (19)
Non-Hispanic Black	12 (23)
Hispanic/Latina (any race[s])	18 (34)
Non-Hispanic Asian	3 (6)
Other race/ethnicity or non-Hispanic multiracial	10 (19)
Education	
High school graduate or GED	6 (11)
Some college or Associates degree	14 (26)
Bachelor's degree/graduate coursework	23 (43)
Graduate degree	10 (19)
Place of residence	
A large city	15 (28)
A suburb near a large city	27 (51)
A small city or town	8 (15)
A rural area	3 (6)
Difficulty paying for basics	
Not at all difficult	7 (13)
A little difficult	15 (28)
Somewhat difficult	21 (40)
Very difficult	10 (19)
Financial assistance during COVID-19 pandemic*	
Benefits from Women, Infants, and Children (WIC)	8 (15)
Temporary Assistance for Needy Families (TANF)	6 (11)
SNAP or Food Stamps (including pandemic-EBT or P-EBT)	29 (55)
Food security	
High food security	6 (11)
Marginal food security	4 (8)
Low food security	14 (26)
Very low food security	29 (55)

Note * Participants were asked to indicate all the sources of financial assistance they received during the COVID-19 pandemic.

getting food from a mobile food pantry, 19% (n = 10) were quite a bit interested, and 21% (n = 11) were somewhat interested. No participants reported being not at all or a little bit interested in a mobile food pantry.

Participants who used a food pantry or bank before and/or during the COVID-19 pandemic reported what they liked best about the idea of a mobile food pantry (Table 2). The most common thing mothers liked best about the idea of a mobile food pantry was convenience or accessibility (78%, n = 31, Table 2). Mothers also liked that mobile food pantries might reduce risk of COVID-19 transmission (20%, n = 8) and provide better access to fresh foods or produce (15%, n = 6). Ten percent (n = 4) liked other aspects of mobile food pantries (Table 2).

Participants who got food from a food pantry or bank before or during the COVID-19 pandemic also reported their concerns about mobile food pantries (Table 2). The most commonly shared concerns were cleanliness and proper food handling (26%, n = 10), accessibility (21%, n = 8), quantity of food available (18%, n = 7), food selection or variety (16%, n = 6), and risk of COVID-19 transmission (16%, n = 6; Table 2). Twenty-one percent (n = 8) of participants wrote in that they had no concerns about a mobile food pantry.

Table 2. What mothers like best about the idea of a mobile food pantry and their concerns, as reported by mothers who got food from a food pantry or food bank before or during the COVID-19 pandemic.

Theme	n (%)	Illustrative examples
What like best (N = 40)		
Convenience or accessibility	31 (78)	"Because it's more convenient than shopping in the store" "The ability for the mobile food pantry to come to my home or a location near me is what I like best." "I think that it would be a lot more convenient and have the ability to serve more people than a typical food pantry." "... takes the concern of dealing with people who don't social distance and public places that aren't cleaning regularly" "... not having to be exposed to the virus"
Reduced COVID-19 risk	8 (20)	"I hope this provides access to healthier food options within my community." "The possibility of getting fresh fruits and vegetables and being able to select the food."
Better access to fresh food or produce	6 (15)	"More flexibility" "The lines can get very long. Some were not drive up either so there was always a concern about who was around. This seems safer and obviously easier as I don't have to worry about childcare if they came to the house, for example."
Other perceived advantages (e.g., safety, flexibility)	4 (10)	
Concerns (N = 38)		
Cleanliness and proper food handling	10 (26)	"The only concern I would have is if the mobile pantries have proper refrigeration to reduce the risk of food-borne illnesses."
Accessibility	8 (21)	"They may not stop at the most convenient locations" "That it might not be close by my house"
Quantity of food available	7 (18)	"It may not have enough food for families."
Food selection or variety	6 (16)	"My main concern is based on the availability of different food nutrition being available in the mobile food pantry. Being able to supply both organic and in organic food"
Risk of COVID-19 infection	6 (16)	"That they become in contact with someone that has COVID and transmit it to the food that they give me" "... adherence to COVID-19 social distancing guidance and cleaning protocols."
Other concerns	1 (3)	"The same issues with any food pantry"
No concerns	8 (21)	"None"

Discussion

The majority of mothers in the current study who received food from a food pantry during the COVID-19 pandemic reported that the assistance was very helpful, similar to other studies of food pantry clients during the pandemic.^{3,20} Also similar to other research,^{3,5,20} many mothers in the current study reported long lines or wait times, inconvenient or irregular hours, and other barriers to access. All women in the current study were at least somewhat interested in getting food from a mobile food pantry, with 60% reporting that they were very interested and 19% quite a bit interested. These findings are in accordance with findings from a survey of Connecticut residents with higher need for food assistance, 80% reported that food delivery from food banks or food pantries would be helpful.²¹

When asked what they like best about the idea of a mobile food pantry, the most common response – voiced by nearly 8 in 10 mothers in this study – was convenience. Inconvenient hours and transportation difficulties were barriers reported by more than half of participants in a recent survey of adults with food insecurity who have not used a food pantry during the COVID-19 pandemic,³ and among nearly 60% of new users of food pantries during the pandemic in another survey.²¹ Clients of a mobile grocery store that makes weekly visits to a low-income community shared that the mobile market was convenient and overcame barriers to traditional grocery shopping including inconsistent car access and gas costs.²² A fifth of mothers shared that what they liked best about the idea of a mobile food pantry was a perceived lower risk of COVID-19 infection, which may be particularly salient to mothers of children under 12 years old who were not yet eligible for COVID-19 vaccination at the time of this study. Finally, 15% of our sample mentioned perceived better access to fresh food and produce as what they liked best about the idea a mobile food pantry, similar to surveys of food pantry clients in 2017 and 2019 that found that fresh fruits and vegetables were among the top-ranked items to have available at all pantry visits.²³ Increased access to fresh produce is also a benefit perceived by mobile market clients in another study.²²

Concerns with mobile food pantries voiced by mothers in the current study included cleanliness, accessibility, the quantity and variety of food available, and risk of COVID-19 infection. Mobile food pantries, like brick-and-mortar pantries, need to attend to clients' preferences and concerns.^{20,23} Concerns related to food safety and disease transmission can be addressed with staff training and clearly communicating policies and procedures to clients. Notably, when asked their concerns about a mobile food pantry, a fifth of participants explicitly said that they had no concerns.

This study has strengths and limitations. The sample of the parent study was racially/ethnically and geographically diverse. However, our sample is more highly educated than US mothers overall,²⁴ and food pantry use is higher

among adults with less education,² thus our results may underrepresent the experiences and thoughts of mothers with less education. As the parent study focused on misleading child nutrition information on social media, eligible participants were required to use social media, compared to 80% of women 18–49 years in the US,²⁵ and may overrepresent mothers interested in child nutrition. As our sample of mothers who had used food pantries was modest, we were unable to examine characteristics associated with greater interest in mobile food pantries, or examine whether experiences and thoughts differed by use of food pantries before versus during the pandemic. We did not ask participants about previous use of mobile food pantries, and thus cannot examine whether thoughts differed by previous use. While 91% of mothers who were very interested in mobile food pantries responded to open-ended questions about likes and concerns, only 55% and 50%, respectively, of mothers who were somewhat or quite a bit interested provided responses to these questions, and thus our findings likely over-represent the perspectives of mothers with higher interest. Finally, we asked mothers what they liked best about the idea of a mobile food pantry, and mothers have perceived advantages other than the “best” advantage they shared.

A number of questions remain as charitable food agencies consider scaling mobile food pantry programs. Mobile pantries require up-front investment in vehicles and equipment to ensure food safety. Moreover, more research is needed to understand how the nutritional quality of food distributed in the mobile setting differs from other food pantries, and their capacity to carry perishable foods that may be highest in demand. At the same time, the high level of interest in mobile food pantries among mothers who have used food pantries to feed their families suggests that mobile pantries may be a way to extend the reach of existing food pantries in meeting the needs of households with young children in need of food assistance. In particular, this model of food distribution has the potential to reduce the burden of transportation and potential exposure to COVID-19 or other infectious diseases, while increasing the flexibility and convenience of obtaining food for clients. These client-centered features of mobile food pantries align them with a broader call to action to offer better choices, more dignity, and broader services to those they serve.²⁶ Coupling new initiatives in food pantries with recent expansions and flexibilities of federal food assistance programs that occurred during the COVID-19 pandemic offer a strong paradigm for addressing food insecurity.⁶

Disclosure statement

No potential conflict of interest was reported by the authors.

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