



RESEARCH ARTICLE

Impact of the COVID-19 Pandemic on Food and Nutrition Security among Older Adults: A Qualitative Perspective

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Abstract

Background: While the primary predictor of food insecurity is poverty, physical limitations and interpersonal relationships are also common barriers to food access among older adults. The COVID-19 pandemic disproportionately affected older adults, with those ages 65 and older making up 75% of COVID-19 deaths in the United States. As a result, fear of susceptibility to the COVID-19 virus may contribute to or further exacerbate food insecurity among older adults.

Objective: This qualitative study sought to investigate the effects of the COVID-19 pandemic on factors that affect food security status and food purchasing behaviors among older adults in northeast Florida.

Methods: A semi-structured interview guide following the International Classification of Functioning, Disability, and Health framework (ICF) was developed and piloted. The final interview guide was used for phone interviews conducted with older adults (ages 65+) living in senior apartment facilities in Jacksonville, Florida, until saturation was achieved. Transcriptions from interview audio recordings were coded separately by two researchers and thematic analysis was used to analyze the data. Individual coding and themes were compared and agreed upon between the two researchers.

Results: Twenty older adults were interviewed. Three major themes regarding COVID-19 and food security status among older adults emerged: 1) financial-related barriers; 2) access-related barriers; and 3) social isolation. COVID-19 created additional barriers to food access among older adult interviewees. Changes to food assistance benefits, food shortages and inflation, transportation accessibility, and fear of COVID-19 infection negatively contributed to food access during the pandemic.

Conclusions: Policy support for nutrition assistance programming and innovative meal delivery programs that provide older adults nutritious meals and social interaction are essential, particularly during the COVID-19 pandemic. Future research should evaluate the health impacts of COVID-19 on nutritional status and disease management among older adults.

Keywords

Older adults, Food security, COVID-19, Nutrition, Food assistance

List of Abbreviations

ARP: American Rescue Plan Act of 2021; COVID-19: Coronavirus disease 2019; OAA: Older Americans Act; SNAP: Supplemental Nutrition Assistance Program

Introduction and Study Objective

The coronavirus disease 2019 (COVID-19) was declared a pandemic by the World Health Organization (WHO) in March 2020 [1]. The pandemic has caused significant disruptions to the USA economy, food system, and overall health and well-being of Americans. Unprecedented unemployment rates, combined with social isolation and lockdowns have increased food-related hardships for Americans [2]. Food insecurity is defined as the inability to have regular access to enough safe and nutritious foods for an active and healthy life [3]. Prior to the COVID-19 pandemic, 10.5% of U.S. households were food insecure, with 8.7% of

elderly households being food insecure [4]. During the pandemic, the overall prevalence of food insecurity increased to 32.1% [5]; however, rates among older adults increased by as much as 75% [6]. According to Feeding Northeast Florida, nearly 237,000 people in northeast Florida experienced food insecurity in 2021 [7].

The primary predictor of food insecurity is poverty [8]. Among older adults, however, there are additional predictors of food insecurity that are not seen in younger populations, including physical limitations [9], health-related conditions [10], social isolation [9], and lack of transportation [11]. Many of these unique predictors, such as social isolation and lack of transportation, worsened due to the pandemic. Thus, many older adults utilize coping strategies to stretch their limited budgets. Maxwell has proposed four types of coping strategies utilized for food insecurity: 1) dietary changes such as relying on less preferred and less expensive foods; 2) increased short-term household food availability such as borrowing food from a friend or family member; 3) decreased frequency of communal meals; and 4) rationing strategies such as limiting portion sizes or skipping meals [12]. Although, there is a lack of research evaluating the types of coping strategies utilized by older adults during the pandemic.

Limited access to nutritious foods is an important social determinant of health among older adults. Food insecurity is associated with multiple chronic conditions including, cardiovascular disease [13], hypertension [14], diabetes [15], and depression [16]. Additionally, food insecurity may exacerbate existing health conditions among older adults with financial constraints due to medication and healthcare utilization underuse, resulting in poorer disease management [17]. Furthermore, food insecurity is associated with lower self-reported physical health [18], which may be due to a higher burden of chronic conditions among those experiencing food insecurity. Given the documented association between food insecurity, chronic disease and psychological distress [13,14,16-18], it seems plausible that the pandemic would worsen negative health consequences for already food insecure populations [19].

In response to COVID-19, the American Rescue Plan Act of 2021 (ARP) invested over \$12 billion in federal nutrition assistance programming [20]. The ARP resulted in a 15% increase in Supplemental Nutrition Assistance Program (SNAP) benefits and an additional \$37 million towards the Commodity Supplemental Food Program which provides nutritious food packages to low-income older adults [20]. To reduce barriers to SNAP enrollment, the Families First Coronavirus Response Act of March 2020 authorized temporary modified procedures to simplify the application process [20]. Furthermore, by the end of December 2020, the SNAP Online Purchasing Pilot was expanded to 46 states

and Washington, D.C. to allow for improved accessibility of food through online purchases and mobile payment technologies [21]. For older adults, relief packages led to a significant emergency increase in funding for the Older Americans Act (OAA) nutrition programs including: 1) \$80 million for congregate nutrition services and \$160 for home-delivered nutrition services under the Family First Coronavirus Relief Act; 2) \$900 million for senior programs under the CARES Act; 3) \$175 million in emergency funding for senior nutrition programs under the Consolidated Appropriations Act of 2021; and 4) \$750 million for senior nutrition programs under the ARP [22]. As the pandemic continues, there is uncertainty about future emergency funding for nutrition programming and services.

The objective of this study was to investigate the effects of the COVID-19 pandemic on factors that affect food security status and food purchasing behaviors among older adults in Jacksonville, Florida.

Methods

This study employed a cross-sectional qualitative research design. In-depth semi-structured interviews were conducted with older adults (i.e., 65 years or older) living in Jacksonville, Florida, between October and December 2021. Participants were recruited through flyers and case managers from their respective senior housing apartment complexes. Interviewees called in via phone or had previously agreed to participate with the case manager and shared their phone number to be called directly by the interviewer. The interviewer made and received participant calls via Google Voice and simultaneously recorded these sessions using Zoom.

Interview data collection was facilitated, collected, audio recorded and transcribed by a registered dietitian nutritionist with training in qualitative research methodology. Zoom was used for audio transcription; however, each interview required extensive edits to match the corresponding audio recording.

Inclusion criteria required that participants be at least 65 years of age and reside in low-income housing. Food security was assessed using the validated two-item food insecurity screen based on questions 1 and 2 of the United States Household Food Security Survey [23]. Income status was based on the 2021 United States Federal Poverty Guidelines, as those earning \$13,000 or more per year were identified as “higher” income individuals [24].

Based on the literature review, research aims, and the International Classification of Functioning, Disability and Health (ICF) framework [25], a semi-structured interview guide was created that included 34 open-ended questions organized around five domains: 1) body function and structure, 2) activities, 3) participation, 4) external factors, and 5) personal factors. Interview questions specific to COVID-19 were included in the

ICF's external or environmental factors domain. The interview guide was piloted with three test participants and refined for clarity based on their feedback. The institutional review board of the University of North Florida approved the study.

Thematic analysis was used to analyze the data. Two qualitative researchers developed the codebook jointly by reading transcripts line by line. Initial codes were determined a priori and were based upon the research questions and the theoretical framework. Inductive reasoning from the transcript review was utilized to develop and refine the codebook. Using Excel to record codes and supportive quotes, the researchers then independently coded the transcripts, analyzing each line of each transcript. When a new code was identified, the researcher conferred with the other coder, and if both agreed, the codebook was revised to include the new code. Saturation, as defined as no new codes emerging, was determined to be achieved after 20 transcripts were reviewed. Each researcher independently analyzed the data for emerging themes and subthemes. Researchers compared their findings and deliberated until they reached a consensus and confirmed themes, subthemes, and representative quotes.

Results

Twenty participants living in senior apartments in Jacksonville, Florida, were included in this study. Each interview lasted between 15-78 minutes (mean = 33 minutes). The age of participants ranged from 66-87 years (mean = 76.65; *SD* = 6.99). Sixteen participants (80%) were female. Nineteen participants (95%) lived in single households, and one lived in a two-person household. Ten were low income, and ten had incomes above the 2021 federal poverty guidelines (i.e., 'higher'

income). Of the ten low-income participants, eight were food insecure, and two were food secure. Of the ten higher-income participants, food security status was split even with five food secure and five food insecure participants. Half of the participants (*n* = 10) were receiving both SNAP and home meal delivery nutrition assistance. Fifteen percent of participants (*n* = 3) were only receiving SNAP benefits, 20% (*n* = 4) were only receiving home meal delivery, and 15% (*n* = 3) were not receiving any food assistance at the time of the interview. Meals on Wings, a food recovery program through the University of North Florida, provided the home delivered meals among the participants in this study.

Three major themes regarding COVID and food security status among older adults emerged from the interviews: 1) financial-related barriers; 2) access-related barriers; and 3) social isolation. Theme description, subthemes, and supportive quotes are detailed below and in [Table 1](#).

Financial-related barriers

Income and financial resources remain important factors influencing food access among this population. Financial-related barriers related to the lack of financial resources to purchase food which were influenced by the pandemic. This theme was comprised of two subthemes: 1) food price inflation and 2) changes to SNAP benefits. Among interviewees, especially those with low and fixed incomes, food price inflation adversely affected their grocery budgets and increased their dependence on food assistance programs, such as SNAP benefits. Given that the interviews took place after the emergency ARP benefits had ended, there were concerns that the reduction in SNAP benefits negatively affected the quantity and quality of food purchased.

Table 1: Major themes, subthemes and representative quotes related to food security status among older adults during the COVID-19 pandemic as identified through participant interviews (*n*=20).

Major theme	Subthemes	Representative quotes
Financial-Related Barriers	Food price inflation	...yeah, I used to get nuts and all that, but nuts went up, I mean skyrocket. Skyrocket. I used to eat pistachios and mixed nuts, but at Publix now they're \$21 for the same size as they were for \$13 last year.
	Changes to SNAP benefits	I was getting \$234 with the pandemic [benefit] then they cut it down to \$135.
Access-Related Barriers	Food shortages	...when it was at the height [of COVID-19], you know, it was a little bit difficult. They run short on some things...but I just...powered through it.
	Transportation limitations	At first it was kind of hard, you know, because it was really bad and then I couldn't go to the store and everything, and...people didn't want to give you a ride home or nothing, it was very hard.
	Fear of going out due to susceptibility to virus	...I got all my shots...so I'm not taking any chances because it's a pretty deadly disease. And have you- have you ever had any kind of upper chest infection...it's no party because if...your lungs get full...then they have to put you on a respirator...I don't want any part of that...pull the plug. I just tried to limit...being around crowds...I've become cloistered, I become anxious [when out in public spaces].
Social Issues	Loss of interpersonal resources	...I had a heart attack two weeks after they shut everything down. Yeah, it was pretty difficult. My son lives two blocks from me, so he shopped for me and dropped things off at my door, so I could pick it up and bring it in and put it away.
	Heightened consequences of lack of interpersonal resources	[Interviewer]: ...does anyone help you with getting enough...food...or meals? They were at first, but since the pandemic, now they've cut back on everything around where I live...I have nobody. It's just me.

Food price inflation: While not explicitly addressed within the detailed interview guide, the inductive subthemes of inflation of food prices and food shortages during the COVID-19 pandemic came to light during the interview process. While none of the higher income individuals mentioned rising food costs, among the ten low-income interviewees, four stated concerns about rising food costs which can be summarized through the following statement:

...food is so expensive now. Every day you go to the grocery store; everything is 20 cents more or a dollar more, you know, so it's kind of really expensive.

Changes to SNAP benefits: One positive outcome related to food security during COVID-19 was the temporary increase in SNAP funding through the ARP. Similar to the abovementioned subthemes, the change in SNAP benefits was an inductive finding. Through detailed discussions on food assistance programming that the participants received, four participants specifically mentioned that they fared better financially with their food budgets during the pandemic due to the increased SNAP funding through the ARP. More commonly, the discussion focused on how they had to modify and carefully monitor their food budget after the ARP benefit ended.

...I guess they got spoiled with the [ARF SNAP increase], just like me, and I got spoiled and now I've got to really eyeball prices on food. That's why I really can't afford mixed nuts and things of that nature...

At the time of the interviews, the increased emergency ARF SNAP benefit had ended, and the United States Department of Agriculture's (USDA) updates to the Thrifty Food Plan (TFP), which resulted in some additional SNAP funding, had been implemented. However, many SNAP recipient interviewees still expressed that their current SNAP benefits, even with the USDA's updates to the TFP, were insufficient in meeting their food needs.

...we get food stamps, it's \$19...I don't know what the \$19 is supposed to do.

I get food assistance and SNAP and they give me \$20 a month. I mean, I don't think you're allowed in the store for \$20, right?

Access-related barriers

Another critical barrier to food access among interviewees was the lack of transportation to purchase food. The pandemic created additional transportation-related obstacles to accessing food, forcing the interviewees to find alternatives and coping mechanisms to ensure they remained food secure while still avoiding any unnecessary potential COVID-19 exposures. Among the access-related barriers theme, there were three subthemes identified: 1) food shortages; 2) COVID-related transportation limitations; and 3) fear of going out into public spaces due to virus susceptibility.

Food shortages: Conversely, higher-income interviewees more frequently noted food shortages during the COVID-19 pandemic. There was only one mention of missing food items (i.e., juice) among low-income interviewees, whereas there were five mentions of food shortages among higher-income interviewees. The most frequently cited concern related to food shortages was the need to plan better when shopping for food as some food items had quantity purchase limitations in place due to demand, as captured in the quote below:

I have to go [to the store] a little more often... nowadays anymore just to see if the store has then in stock...and you can't buy but two packages of that [frozen vegetables] at a time. The store has it fixed that way.

Other food shortage-related comments less frequently mentioned pertained to commonly accessible food items missing from the store or being hard to locate and having to ration food intake because of these shortages. One participant noted that these food shortage-related issues were more prevalent early in the COVID-19 pandemic.

COVID-related transportation limitations: Within this subtheme there were two common barriers to transportation that were a direct result of the COVID-19 pandemic. First, all interview participants lived in senior apartment facilities. Subsequently, many had access to van transportation services through their facility to get to the grocery store. However, during COVID-19, access to these transportation services was limited or nonexistent. One common theme regardless of financial or food security status could be described from the following statement:

...we have a van, well, before COVID that was a lot easier because we would have a van, and they would take us to the store...but now with COVID we're not doing any of those things or outings or anything, so it just makes it a little bit difficult...

Among those participants that lived in facilities that had resumed van transportation services for the residents, all reported that the van was only being used at limited capacity and required signing up well in advance.

Others noted that friends or neighbors who may have previously helped with transportation no longer wanting to share a vehicle, particularly early in the COVID-19 pandemic. Interestingly, two low-income participants mentioned utilizing a paid private driving service to limit exposure during the pandemic, whereas this was not noted among the higher-income participants.

Fear of going out due to susceptibility to the virus: While some participants had been utilizing food assistance programs, such as local food banks,

the pandemic slowed or halted the use of some of these programs due to worries related to COVID-19 susceptibility when leaving their housing into more populated areas:

Before COVID, we would go to the food bank...but we haven't been doing that since COVID...right now nobody wants to go and get any of the food...you can still use them [food giveaways and food banks] but we just haven't been going. We just don't feel comfortable.

One participant expressed that the vaccine provided some peace of mind which allowed them to feel better about visiting public spaces, like the grocery store. On the other hand, several other participants remained vigilant and reduced the frequency of their trips to the grocery store due to fear of infection. One participant reported their fear about the severity of the disease if contracted and the risk of requiring mechanical ventilation. Another participant worried that she still would not survive COVID-19 despite being vaccinated. This same participant reported that they had not left their apartment complex in three months and had reduced time spent and frequency of visits to the store due to COVID-19. Moreover, this participant relied on a "bedroom" sized mini-mart for food with limited operating hours to reduce their risk of contracting COVID-19 and cope with their immobility and lack of transportation.

Social issues

The degree of social connectedness affected the food security status of the interviewees. While some reported reliance on proxies, such as family and community, as essential financial, emotional, and social supports, others did not have such resources. Additionally, as noted in the access-related barriers theme, it was observed that the fear of COVID-19 infection heightened social isolation. In some instances, this left many on their own, which resulted in a severe impact not only on their food security status but also on their physical and psychological health. Under the social issues theme, two subthemes were identified: 1) loss of interpersonal resources and 2) heightened consequences of lack of interpersonal resources.

Loss of interpersonal resources: While many of the participants had family or other interpersonal resources nearby that they could call on in times of need, several participants discussed how COVID-19 affected their ability to utilize these resources. One participant dealt with a significant health crisis early on during the pandemic which left them with limited resources during their recovery. Another participant mentioned that their usual family resources that helped with food access were not visiting due to COVID-19 and facility-related COVID-19 policies.

...they [the participant's children and grandchildren] hadn't really been over here, you know, because of the

corona[virus] and different changes we've made around here due to...COVID...

Heightened consequences of lack of interpersonal resources: Those without nearby family, friends, neighbors, or other acquaintances to help with food access appeared to suffer more heightened consequences because of the lack of these interpersonal resources. One participant mentioned that they had received help from their facility resources with food before the pandemic; however, the COVID-19 facility restrictions left them without some of their previously utilized food resources. Also, another participant with very few interpersonal resources discussed their COVID-19 diagnosis and how it affected their food access and appetite:

...they kept me in the hospital for four days trying to find out what was wrong with me...and they couldn't figure out what was wrong...so they sent me back home, and the next day I would try and get to my primary care, and I passed out in the lobby and they called another ambulance and then they ended up telling me I had COVID, and...I had to quarantine for 14 days. And luckily, I wasn't really hungry because I didn't have any way to eat...but I wasn't hungry when I was sick.

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Discussion

This study found several COVID-19-related factors that affected or worsened food security among a sample of older adults. The predictive factors of diminished food security included rising food costs, food shortages, fear of COVID-19 susceptibility, transportation-related difficulties, and lack of interpersonal relationships. Conversely, greater nutrition assistance program funding and supportive interpersonal relationships appeared to aid in resilience and food security.

Early in the COVID-19 pandemic, consumers avoided restaurants and grocery stores and were more inclined to purchase large quantities of essential food retail items [26]. This initial spike in demand resulted in food shortages and higher prices [26]. Presently, increases in grocery prices are the highest in a decade, largely influenced by changes in food consumption and supply during the pandemic [27]. The Consumer Price Index (CPI), which determines the change in prices paid for goods over time, found a 7% increase in food prices over just the last 13 months [27]. These recent economic trends support many of the comments regarding food price inflation and food shortages voiced by interviewees as barriers to food access.

While most of the participants were recipients of at least one nutrition assistance program, their participation in these programs alone was not enough to ensure adequate access to healthy foods at all times. It has been suggested that SNAP benefits only provide

about 41% of the adjusted cost of a healthy diet [28]. Moreover, on average, SNAP recipients redeem greater than 75% of their benefits by the middle of the month [29]. The interviewees recognized the temporary ARP SNAP increases as a significant protective factor in preventing food scarcity. However, it was frequently mentioned that once the emergency pandemic SNAP benefit ended, the newly adjusted rates from October 2021 became a barrier to food security. This finding was common among interviewees receiving the minimum SNAP benefit (i.e., ~\$19-20/month) as the current post-ARP benefit covered very little of their monthly food costs. The loss of the additional emergency SNAP funds coupled with increasing food prices required several interviewees to rethink their food choices and reduce their food purchasing habits.

The pandemic has also greatly affected transportation, especially among individuals with disabilities. In Florida, 28% of adults have some disability [30], and the prevalence is even higher among older adults [31]. Access to transportation is essential given its importance for carrying out activities of daily living. Despite this, several older adults within this study had their transportation compromised due to COVID-19. As observed in our results, older adults faced distinct problems related to transportation to markets and grocery stores as facility transportation services were limited, and neighbors and friends were more apprehensive about sharing a vehicle with others due to fear of contracting COVID-19. Similarly, prior qualitative studies related to the difficulties faced by the older adults and individuals with disabilities during the pandemic included fear of getting sick, which resulted in reduced frequency of food purchases and trips to the supermarket [31].

Data show that food delivery apps were the segment that most increased in the mobile applications sector during the pandemic. However, such technologies may not be accessible to low-income individuals or those lacking computer technology skills. Cochran [32] found that among people with disabilities, issues with these technologies included delivery delays and minimum purchasing limits for delivery services. Likewise, most individuals in this study reported unfamiliarity or discomfort in using technology to access food. While reduced exposure to COVID-19 was an important consideration for the few interviewees that utilized these food or grocery delivery services, use was also attributed to lack of transportation and declining mobility or functional status.

Social isolation is a detriment to mental and physical health as it has been associated with a greater risk of mortality [33], cardiovascular disease [34], decreased functional status [35], and poor sleep [36]. While rates of social isolation among older adults were high pre-pandemic, COVID-19 has exacerbated these concerns

regarding isolation and loneliness due to required physical distancing [37]. While several interviewees noted that they had family resources close by, many mentioned reduced interactions with family due to facility requirements or their concerns of contracting COVID-19. Corroborating findings from Keller, et al. [38], several interviewees reported avoiding or limiting contact with friends and family for help as they did not want to burden their loved ones.

Limitations

This study is a first of its kind in exploring the food access experience among older adults during the COVID-19 pandemic. The study, however, is not without limitations. Participants were limited to older adults living in Jacksonville, Florida, which can impact the generalizability of the results. Given the cross-sectional nature of the interviews (conducted between October-January 2022), participants tended to focus on current perspectives on COVID-19 rather than past experiences from early in the COVID-19 pandemic. Additionally, there is the risk of response bias among interviewees. To minimize this risk, open-ended questions and prompts were provided to allow the participant to expand as necessary.

Implications

There are many implications for policy, practice, and research that can be drawn from the study results. The initial ARP increase in SNAP benefits allowed for reduced worry regarding food access among SNAP recipients in this study. Policy implications to support increased food access include: 1) continuing SNAP benefits at the ARP SNAP level or higher; 2) continuing flexibility in OAA meal programming; and 3) appropriating future funding for the OAA at higher levels to support rising food costs and our nation's growing population of older adults. Practice implications from this study focus on expanding innovative meal delivery programs for older adults. Participating in a meal delivery program was found to be protective by many interviewees. Waitlists for Meals on Wheels were common prior to March 2020, but the pandemic increased the need. COVID-19-related flexibility in OAA funding allowed for new innovations in meal delivery programs. One such program, the University of North Florida's Meals on Wings, recovers unused food from local hospitals and repackages the food items into nutritious meals. Not only does this program increase the number of older adults receiving meals, but it also results in the reduction of food loss. In 2018, the Environmental Protection Agency (EPA) reported some 63 million tons of wasted food generated in the United States [39].

Innovative meal delivery programs are more than a meal. The Meals on Wings program offers socialization with the volunteers during the designated weekly meal delivery times, opportunities to share inspirational notes

with recipients, phone call safety check-ins, and extra household essentials, such as toilet paper. However, additional services can be added to these programs to address the social isolation. Many of the Meals on Wings interviewees within this study reported looking forward to their weekly interactions with the delivery volunteers and the excitement of receiving their meals. Several even planned appointments and outings around the designated time frame to ensure they could receive their meals and catch up with the volunteers. Finally, previous research has shown that food insecurity increases malnutrition rates among older adults and is associated with poor disease management. As such, research is needed to evaluate the long-term effects of pandemic-related food access on nutritional status and malnutrition rates in older adults and management of chronic diseases such as diabetes.

Conclusion

Barriers to food access included changes to food assistance benefits, food shortages and inflation, transportation accessibility, and fear of COVID-19 infection while protective measures included participation in food assistance programming and social support. Implications from this study include advocating for increased funding for food assistance programs, developing more innovative programs to provide meals and social interaction for older adults, and research on the impact of the pandemic on nutrition status and disease management.

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Statement of equal authors' contribution

All authors participating equally in the research and preparation of the manuscript.

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