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RESEARCH ARTICLE

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Using a structural vulnerability framework to understand the impact of COVID-19 on the lives of Medicaid beneficiaries receiving substance use treatment in New York City

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Abstract

Objective: To investigate how the COVID-19 pandemic impacted low-income individuals with substance use disorder (SUD) in New York City (NYC) during the beginning of the pandemic, using a structural competency and structural vulnerability theoretical framework and a qualitative research approach.

Data Sources: Primary qualitative data were collected from racial/ethnic minority adults enrolled in Medicaid receiving outpatient substance use treatment (e.g., medication, counseling) in NYC.

Study Design: Semi-structured in-depth qualitative interviews ($N = 20$) were conducted during "stay-at-home" orders in NYC, the first epicenter of the COVID-19 pandemic in the United States. Interviews were conducted over the phone during the earlier stages of the pandemic, between April 2020 and June 2020.

Data Collection/Extraction Methods: Semi-structured in-depth interviews were conducted and audio recorded, transcribed, and analyzed using a thematic analysis approach.

Principal Findings: Three themes were yielded from our thematic analysis: (1) COVID-19 heightened food insecurity and housing conditions increased risks of infection; (2) stay-at-home orders limited access to resources but had positive impacts in strengthening social relationships and reducing substance use triggers; and (3) although COVID-19 created challenges for treatment, most described that SUD care improved during the pandemic.

Conclusions: While COVID-19 exacerbated numerous structural vulnerabilities among low-income individuals with SUD, programmatic adaptations to COVID-19 SUD care, including telehealth and loosening restrictions around medications for opioid use disorders mitigated past difficulties that patients had faced. Reducing structural vulnerabilities for Medicaid patients will require continuation of telehealth treatment delivery, retaining flexible medication regulations, and mobilizing community resources to mitigate economic disparities.

KEYWORDS
COVID-19, disparities, Medicaid, structural vulnerability, substance use disorders

What is known on this topic

- The COVID-19 pandemic disproportionately impacted Black, Latinx, and low-income communities, as well as those with substance use disorders.
- Structural vulnerability and structural competency frameworks theorize that structural forces (e.g., race, class, policies, and laws) contribute to health inequities, rather than situating health outcomes solely within individuals' behaviors.
- Policies and regulations regarding addiction health services were quickly changed to contend with challenges of delivering addiction treatment during the height of the COVID-19 pandemic.

What this study adds

- The COVID-19 pandemic exacerbated economic stress for low-income people living with SUD who already have many unmet social needs and register within numerous domains of structural vulnerability.
- Stay-at-home measures were described as beneficial because it encouraged more communication between family members and reduced social interactions that could trigger substance use.
- Despite relaxed opioid-dispensing regulations during the onset on the pandemic, most participants on methadone did not report care changes but participants on buprenorphine treatment had easier access to medications and reported an improvement in SUD care.

1 | INTRODUCTION

The COVID-19 pandemic has drastically altered lives and burdened health care systems. In the United States, New York City (NYC) became the first epicenter of the COVID-19 pandemic.[1] Between March and June 2020, there were over 210,000 cases across all five boroughs,[2] which disproportionately impacted Black, Latinx, and low-income communities.[2,3] A group excessively burdened by the pandemic were low-income individuals with substance use disorders (SUDs)[4] whom in addition to experiencing ongoing significant behavioral health and poverty-related problems, also experienced disruptions in ongoing SUD care.[5,6] Individuals with SUDs were more likely to contract COVID-19 and suffer worse outcomes if infected, compared to those without SUDs.[7] In addition, COVID-19 preventative measures such as quarantining were particularly difficult for this population, as isolation can lead to fear, anxiety, and depression—all of which increase the risk of substance misuse.[8,9] Using a structural vulnerability framework, this qualitative study explores the challenges and changes that COVID-19 revealed for people with SUD living in NYC.

1.1 | Structural vulnerability and SUD

Structural vulnerability and structural competency frameworks theorize that structural forces (e.g., race, class, policies, and laws) contribute to health inequities through attributions and assumptions that organize people within a social hierarchy, rather than situating health outcomes solely within individuals' behaviors.[10] For example, addiction clinics and harm-reduction centers offer vital behavioral and medication treatments for individuals with SUD, but almost all occurs in-person under regulated clinical settings.[11] Thus, organizational and structural barriers—such as stay-at-home guidelines and lack of personal protective equipment—impacted SUD treatments offered in-person[12] and may increase an individual's structural vulnerability.[13] To contend with these challenges, the CARES Act allowed Medicaid beneficiaries to use telemedicine for SUD treatment, and to increase reimbursement of telehealth.[14] Additionally, the Substance Abuse and Mental Health Services Administration (SAMHSA) permitted providers to distribute 28-day take-home methadone treatments for opioid use disorder to limit face-to-face contact.[15] These rapid changes within SUD treatments, and the accompanying life changes, may have affected the lives of people living with SUDs by altering their care trajectory and outcomes. To this end, the purposes of this study were to understand (1) how the COVID-19 pandemic impacted low-income individuals with SUD and (2) how people adjusted to SUD treatment changes during "stay-at-home" orders in NYC. Utilizing a structural vulnerability framework, we assessed the domains of social forces for these patients during the peak of the COVID-19 pandemic, between April and June of 2020.

2 | METHODS

2.1 | Participants and recruitment

Eligible participants were adults receiving outpatient addiction treatment (e.g., medication, counseling) in NYC enrolled in Medicaid, who

agreed to a recorded interview in English, Spanish, or Chinese (i.e., Mandarin or Cantonese). Participants were considered low-income due to their eligibility and enrollment in Medicaid, which was an inclusion criterion, and Medicaid is a health care program specifically for low-income individuals.[16] The research team had ongoing collaborations with several NYC addiction treatment centers who aided with recruitment of individuals receiving outpatient SUD treatment through Medicaid for a larger project evaluating the performance of Medicaid Managed care plans. The first 10 participants enrolled in the current study had been previously interviewed in the larger project and were approached again by the research team to participate in the current study to evaluate the impact of COVID-19. Additional participants were recruited through snowball sampling techniques, where enrolled participants referred other eligible participants, allowing for identification of other hard-to-reach or vulnerable participants.[17] Consistent with a qualitative approach, the research team began analysis of interviews as data were collected to assess the quality of interviews and to identify whether there was sufficient data to reach thematic saturation (i.e., concepts were repeated across participants and no additional salient concepts emerged with subsequent data collection). While race, ethnicity, and gender likely impact the experiences of low-income individuals with SUD, our intent was not to compare subgroups. When themes in the data were stable, we stopped participant recruitment.

2.2 | Procedure

In-depth phone interviews were conducted during NYC "stay at home orders" between April 20, 2020 and June 05, 2020. A semi-structured format allowed trained interviewers to ask follow-up questions and delve deeper into topics that were particularly relevant to participants.[18] Interview guides targeted: (1) the mental, physical, economic, and social impact of COVID-19 and (2) related changes in SUD treatment since the start of the pandemic. Interviews were conducted by bilingual research staff trained in conducting semi-structured interviews. Spanish and Chinese interviews were translated by bilingual investigators to English for analysis. Verbal consent was obtained to participate in the study and to be audio-recorded. Interviews lasted about 30 min and participants received a $50 gift card for their participation. The study was approved by Mass General Brigham Institutional Review Board.

2.3 | Analysis

Research staff wrote memos summarizing insights following each interview and synthesizing concepts across interviews.[19] Using a structural vulnerability framework, we conducted an inductive, thematic analysis on the combined audio-recordings, transcripts, and memos.[20,21] A thematic approach describes patterns of meaning in qualitative text through: familiarization with the data, coding, generating themes, and revising and defining themes with salient points and supporting quotations.[20,21] Following familiarization with the data, the first two authors independently coded and noted important concepts related to the impact of COVID-19. Next, we reviewed differences in coding and discussed their meaning.[20,21] Patterns generated from codes were grouped into potential themes, which were clarified and supported with evidence from participant quotes.[20,21] To enhance the validity and rigor of the study, an external researcher reviewed the findings for coherence.[22]

3 | RESULTS

During analysis, we determined that thematic saturation had been reached after 20 interviews. As illustrated on Table 1, the sample included 16 male and 4 female participants, with an average age of 52 (SD = 13.28). All participants identified as being a racial/ethnic minority. In terms of NYC boroughs, most participants resided in the Bronx (n = 12), followed by Manhattan (n = 3), Brooklyn (n = 3), Queens (n = 1), and Newark, New Jersey (n = 1). Most participants were receiving treatment for opioid use or alcohol use disorders in outpatient settings, receiving a mix of behavioral and/or pharmacological treatments. A total of 13 participants were receiving medications for SUDs: seven were on buprenorphine and four on methadone at the time of the interview. Of note, three of the four females interviewed were on medication for opioid use disorder (MOUD).

Three major themes resulted from the thematic analysis that correspond with domains of structural vulnerability: (1) COVID-19 heightened financial instability increasing risks of COVID-19 infection; (2) stay-at-home orders limited access to resources but had positive impacts in strengthening social relationships; and (3) although COVID-19 created challenges for treatment, most described that SUD care improved during the pandemic.

TABLE 1 Participant information for individual interviews (N = 20)

# of participants	Race	# identified as Latinx	Mean age (SD)	Sex
7	Black	2	45.7 (27–65)	6 male, 1 female
2	White	2	59.5 (59–60)	1 male, 1 female
4	Asian	0	59.8 (40–71)	4 male
2	Multiracial	1	41.5 (33–50)	1 male, 1 female
5	Latinx[a]	5	54 (35–64)	4 male, 1 female

[a]These participants did not select a race category but did select Latinx as an ethnicity.

3.1 | Theme 1: COVID-19 heightened financial instability, increasing risks of COVID-19 infection

Much of the COVID-19 related stress reported by participants was associated with financial insecurity including food and housing insecurity. Even though most participants explained that they were receiving social security benefits, those employed at the start of the pandemic had either lost their job or had their working hours drastically reduced. This was particularly stressful for individuals with SUDs because being employed was described as an important aspect in their recovery, and there was some concern that the financial instability would create more stress and trigger increased use. Financial stress impacted participants' ability to access and buy food, particularly alongside increasing food costs:

> We have stores that are … pushing up prices for certain things that we look at now like 'wow that's ridiculous' … that's a little difficult cuz you know I got laid off so I gotta maintain as much money as I can to survive. (P1)

Participants explained that the New York state government increased the amount of Supplemental Nutrition Assistance Program benefits available. However, increased food prices meant that capped benefits were insufficient:

> … they don't have that much sales [on foods and other essential items]. So, when you use food stamps, your money goes so fast that you're broke. (P2)

Stress was also reflected in concern about the safety of their housing conditions in the context of COVID-19. Participants described their suboptimal living conditions, including shelters with almost 200 residents, group homes where roommates were not disinfecting regularly, and general overcrowding that would increase risk of infection. For example, a Chinese participant explained his lived experience:

> Some Chinese live in a small apartment with many household members and it is very crowded. So, it is more dangerous, and the house is easily infected. The risk is higher in some Chinese communities because of the living condition. (P3)

As the quote above demonstrates, the suboptimal housing conditions were often described as a byproduct of participants' intersecting conditions of living in poverty and having an SUD, including many who lived in crowded dwellings, shelters, sober homes, or room rentals that housed people in recovery. While some financial relief was expected through the federal stimulus checks, some participants reported not receiving assistance because they "don't know how to get the information online." (P4) Financial difficulties resulted in scarce money to buy masks, cleaning supplies, or essential items, including medicines:

> During the stay-at-home order, I went out to pick my medicine, but it would cost me $15 and I don't have money. So, they didn't give me [the] meds. I returned home. (P4)

Despite the numerous financial challenges caused by COVID-19, most participants found some relief from community-based organizations, which were particularly focused on distributing food:

> They got the centers that are doing great. The food is really good … from the school, restaurants. They figured out a way to bring the food to you so it works out. (P2)

3.2 | Theme 2: Stay-at-home orders limited access to resources but had positive impacts in strengthening social relationships and reducing substance use triggers

COVID-19 mitigation strategies were described as both positively and negatively impacting participants. Stay-at-home orders required people to stay indoors and limited access to essential needs. Participants with inability to travel longer distances found themselves pressured to shop at pricier local stores:

> It's been a little tough you know because there's no stores around the [area where I live] where you can purchase stuff for cheap because everything here is expensive. So, it's been hard to find places … or you gotta go further from the block. (P5)

In addition, stores limiting their opening hours or customer occupancy made it difficult to social distance—which was another COVID-19 risk mitigation measure encouraging avoiding gatherings—and heightened the risk of exposure:

> Pharmacies are not even staying open as long as possible … and that's scary … if I run to a pharmacy and you know they tell me like 'we only let like 2 people in at a time', which happened to me before, you know I could be waiting outside for a whole half an hour or 2 hours you know, because the line could be that long just for medicine. (P1)

Paradoxically, stay-at-home orders allowed participants to rely more on social networks and interpersonal relationships to cope with stressors. Despite the stressors described above, an overwhelmingly majority of participants reported that they were adapting well, especially due to family support:

> My sister, she helps me she sends me care packages through the mail with food … and stuff like that … that would be support. (P5)

Some participants explained that previously strained relationships with family members were renewed during the pandemic; the change was partly attributed to loss of loved ones from COVID-19 bringing families together emotionally during the grieving process. Even though some remained physically disconnected from their family, most participants explained that reconnecting over the phone strengthened relationships with friends and family members. Some participants expressed that this ongoing communication allowed them to rekindle or fortify their existing relationships. For example: "[This situation] has brought us closer. Before it was very distant … so I mean this pandemic has been a positive in my life." (P6).

Most participants in our study explained that it was easy for them to abstain from substance use despite the increased stressors and perceived easier access to alcohol and drugs: "It looks like it's (access to drugs) worse now" (P7). However, most believed that stay-at-home measures were beneficial as they minimized interactions that could trigger substance use:

> I think (my drinking problem) is even better because now I can't go out meeting with friends so I avoid things that could make me drink more. Less temptation. It is like when I walk outside, I saw [a] liquor store. Now I don't need to see it. By staying at home, it is less likely for me to face those temptations. (P3)

3.3 | Theme 3: Although COVID-19 created challenges for treatment, most described that SUD care improved during the pandemic

3.3.1 | Methadone dispensing remained mostly unchanged, but buprenorphine was more accessible

Some of the changes to SUD care delivery were related to MOUD. However, most participants receiving methadone described no changes, as they continued going to the clinic daily. Of four participants on methadone treatment, only one explained that his clinic had been allowing him more doses to take home instead of daily supervised dosing:

> They recently started to give me a week's worth of take home … doses. That has been quite a … luxury to be able to have what I need at home and be able to dose at my convenience. I found that I like to take it at night, (it makes me feel better), but I can't do that if I'm going to the clinic every day. (P8)

The same participant explained that being in constant communication with his counselor helped him get more take-home methadone doses. But as stated by other participants, expanding the take-home doses for multiple days practice was not a policy for everyone. He continued, "A lot of people … are still getting 1 or 2-days' worth … it's not consistent. The SAMHSA allows up to 28 days (of methadone supply) and I don't know any programs that are doing that." (P8) However, he believed that relaxing methadone dispensing was tied to bias towards opioid users:

> a big problem with people's perception of diversion with methadone particularly … there's … an aspect of control … there's cynicism… heroin addicts are, I believe, hated by society so there's a whole idea that you have to suffer … or be controlled. Otherwise, you're gonna do yourself some harm. (P8)

Conversely, of the seven patients who were on buprenorphine, most explained that it was easier to obtain the medication than before the pandemic because rules requiring office visits for dispensing had been relaxed. One participant explained:

> I think they've (clinicians) been doing everything 100%. Calling my doctor whenever my medication is low … It's a whole lot easier now than before, I can just call. Before I had to go there and sit in line and wait. (P9)

3.3.2 | During the shift to telehealth, participants preferred individual treatment options

The response to changes in nonpharmacological SUD care was mixed. Given that people could not congregate in groups, participants could not attend in-person Narcotics or Alcoholics Anonymous meetings or group therapy sessions. Some participants attended group therapy over the phone, but participants found them suboptimal because people were talking simultaneously. Overall, participants preferred face-to-face group sessions because they could also see others' expressions and enjoyed the sense of community. For example, one participant went to great lengths to remain connected to his group as it was an important source of support:

> We basically had to find each other on Facebook or some other way so we could contact each other; then we talked about what it is we could do to stay in communication with each other. Basically, like a support network, you want to keep people around you that's strong so you can stay strong. (P7)

As illustrated in this quote, social relationships were prioritized by participants, as it allowed them to remain connected to feel supported by others and it aided in their recovery. Unlike group telehealth sessions, most participants had positive experiences with one-on-one telehealth appointments with counselors, addiction prescribers, therapists, and case managers. In fact, some participants believed that SUD care *improved* during the pandemic as services and providers were more accessible. Participants said they could "call right away" (P9) and they have their prescribing provider "on speed dial" (P6). Another explained:

> It is more convenient. I used to commute to attend session, back and forth, it takes me more than two hours. Now I saved the two hours and I can do something else with the extra time. (P3)

Participants believed that frequent check-ins with providers helped them cope with stress and reduce substance misuse risk. For example, participants explained how the SUD care team helped in multiple fronts:

> I get to talk to my psychiatrist once a month and I talk to my therapist every week. That service has been easy because they do contact me. It gives me a sense of like pride that at least I'm staying in touch with somebody that's helping me with my health… My help from my counselor is beautiful. She keeps me positive like if I need help filling my rent receipt, I go down she shows me. If I need food, they tell me what pantries… (P7)
>
> [My caseworker] makes sure my housing is alright, that I'm eating good, taking my medication on time … makes sure that I'm doing everything I'm supposed to be doing. (P9)

Harm reduction centers also took additional precautions and created alternatives for extended service delivery, including limiting services and hours, supplying more syringes, and offering meals and emergency case management services. Most participants wished telehealth services would remain post COVID-19, and even explained that the pandemic allowed us to see that SUD care delivery can indeed be more flexible:

> We've been convinced that there is no alternative … to the things that we do and the way we do them. And what COVID is laying bare is there are alternatives, and they work. (P8)

4 | DISCUSSION

The COVID-19 pandemic exacerbated economic stress for low-income people living with SUD who already have many unmet social needs and register within numerous domains of structural vulnerability.[23] These intersecting disparities are not coincidental, but rather a direct byproduct of structural and inequitable systems that disproportionately affect low-income communities of color.[24] Specific to low-income individuals with SUDs, financial security, one of the structural vulnerability domains, became more precarious during the COVID-19 lockdowns due to sudden unemployment, and could have affected recovery and the SUD care trajectory. Risk mitigation strategies to prevent COVID-19, such as stay-at-home orders, caused more than one third of emergency food pantries in NYC to shut down,[25] which disrupted food access, another critical structural vulnerability domain, for low-income individuals with SUDs. However, the Bronx experienced a disproportionate number of these closures with 50% of emergency food pantries being shut down, even though it was the borough needing the most food assistance.[24] Despite community and state level efforts to address food insecurity,[26] access to affordable food and other basic necessities remained a significant public health problem. Considering that community-based organizations played pivotal support roles, funding needs to be diverted to these organizations so that they are better equipped to mitigate structural inequities.[27]

Although previous studies reported that the pandemic may bring about psychiatric decompensation and increased substance use among low-income people living with SUDs,[28] participants in our study described adjusting well despite increased stressors. Coping resources predominantly stemmed from community and interpersonal resources was consistent with prior studies.[29,30] The importance of family networks as a protective for people with SUD and for sustaining SUD treatments has been widely promoted for improved SUD outcomes.[30] Participants in this study also described their limited social networks and efforts to socially distance as protective against the triggers of substance use. Isolation and solitude comprise important, both positively and negatively, aspects of the lives of substance users.[31] Social distancing can be particularly dangerous for individuals with opioid use disorders because overdoses are more likely if other people are not around to administer naloxone.[28,32] Nonetheless, our findings that social distancing was protective against substance use seem counterintuitive and may be influenced by unobserved factors that helped participants sustain recovery during the height of the pandemic, such as less pressure to share drugs or exposure to triggers that exacerbate substance use. Further investigation is needed to fully understand the impact of social distancing for individuals with SUDs, particularly in light of the fact that states have observed increases in opioid overdoses during COVID-19.[33]

Despite relaxed MOUD dispensing regulations that allowed increased take-home treatments,[15] most participants in our study did not obtain additional doses of methadone. Regulations and reimbursements surrounding methadone dispensing remained highly regulated despite COVID-19, including requiring in-person initial visits.[34] Methadone, in comparison to buprenorphine, may have riskier pharmacological properties and are more likely misused.[35] However, others have argued that strict methadone dispensing regulations are guided by structurally racist systems of social control and institutionalized stigma for individuals with opioid use disorders.[36] Methadone clinics themselves can therefore be seen as risk environments for ongoing illicit use if dealers maintain proximity to the sites, which was also an issue before the COVID-19 pandemic. Allowing for more take-home doses from methadone clinics can therefore be seen as a way to structurally intervene to help patients with opioid use disorders avoid environments that could trigger use or destabilize recovery efforts. Relying strictly on providers' judgment of "stable" patients eligible for take-home methadone dosages[15] can tap into provider bias[37] and deter quality of opioid use disorder treatment. Having clear, consistent guidelines for who should receive more flexible regulations of methadone dispensing should be backed by evidence.

With more flexible regulations surrounding telehealth for buprenorphine treatment[15] allowed participants in our study greater access to medications and reduced risk of COVID-19 exposure while also positively impacting their sense of power and increasing their agency and perception of illness management. Flexible regulations and policy change around allowing for telehealth can help reduce structural inequities and vulnerabilities for this population. Despite decades of discussion of transitioning behavioral health care to telehealth delivery,[38] few SUD centers had implemented these changes prior to the pandemic.[39] We provide some evidence that individual treatments (e.g., pharmacological and behavioral) via telehealth are preferred and have the potential to reduce structural vulnerability for patients. COVID-19 provided us an optimal opportunity to study the long-term feasibility and acceptability of continuing aspects of SUD care via telehealth.

This study has several limitations. We used purposeful and snowball sampling approaches in NYC and our sample was limited to those receiving outpatient care. While we tried to include participants from diverse genders, included participants is limited in that it has a reduced number of women and no non-binary participants. Future studies should include larger number of participants who are not men, as their experiences could be diverse from the ones reported here. We also did not explicitly ask about participants' length of treatment, living conditions, and partnership status, which are important factors to consider when understanding social support and recovery efforts. In addition, we conducted phone interviews and may have excluded those without phone access. However, phone interviews are an accepted approach to qualitative data collection[40,41] and may even be a preferred mode of data collection for particular populations or sensitive topics.[42]

From a structural competency lens, it is crucial to examine the patient's social domains that can lead to relative risk or resilience. The COVID-19 pandemic exacerbated existing disparities by heightening existing economic and food precarity for individuals with SUDs, who experienced disproportionate stress due suboptimal living conditions and ongoing disruptions to SUD care. On the other hand, community and interpersonal resources fostered resilience by drawing on social networks to address structural inequities and mend social connections that can help participants better cope. Mobilizing resources for community-based organizations to tackle the structural inequities in food, basic necessities, and housing supports seems paramount, as they provide reserves for those in greatest need. Opportunities for improving SUD care include remaining with individual telehealth delivery, proactively checking in on patients, and loosening MOUD restrictions to address structural inequities, and to provide a crucial safety net for those structurally vulnerable. Retaining flexible regulations and training to expand the lessons learned from COVID-19 should be our next step.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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