Confronting COVID-19 in under-resourced, African American neighborhoods: a qualitative study examining community member and stakeholders' perceptions

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Abstract

Objective: The purpose of this study was to examine perceptions of COVID-19 related to prevention, coping, and testing of African American residents in under-resourced communities in Alabama.

Design: Guided by the PRECEDE-PROCEED model, virtual focus groups were conducted in five urban and rural Alabama communities using secure Zoom meetings. Community residents and stakeholders (N=36 total) participated; meetings were audio- and video-recorded, transcribed, and analyzed according to Thematic Analysis. Themes were organized by the PRECEDE portion of the model in Predisposing, Reinforcing, and Enabling barriers and facilitators in three focus areas: prevention, coping, and testing.

Results: Prevention barriers included apathy, difficulty with social distancing, lack of information, mixed messages from authority figures, and lack of personal protective equipment (PPE). Prevention facilitators included concerns about contracting COVID-19, clear and consistent messages from trusted sources, contact tracing, and the provision of PPE. Coping barriers included food insecurity, mental health issues, isolation, economic hardships, lack of health care access, and issues with virtual schooling and church services, which were exacerbated by inability to connect to the internet. Facilitators to coping included religious faith, increased physical activity, and a sense of hope. Testing barriers included misunderstanding, fear, mistrust, testing restrictions, and location of testing sites. Facilitators to testing included incentives, clear information from trusted sources, convenient testing locations, and free tests.

Conclusion: Gaining community members' perspectives can identify barriers and facilitators to prevention, coping, and testing and potentially improve outcomes. While addressing the social determinants of health (e.g., income, education, medical trust) would be an effective path by which to diminish health disparities related to COVID-19, there is an urgent need to mitigate the spread and severity of COVID-19 in vulnerable populations. Interventions should focus on downstream determinants, such as those emerging from our study.

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Keywords

COVID-19; African American health; social determinants of health; health disparities; qualitative research; coping; barriers to COVID-19 testing

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Introduction

Speculations of probable racial disparities in COVID-19 incidence and mortality early in the pandemic (Yancy 2020, Van Dorn, Cooney, and Sabin 2020) were confirmed within weeks (Mahajan and Larkins-Pettigrew 2020). African Americans, in particular, were disproportionately affected with higher rates of infection and death from the virus, compared to White counterparts (Mahajan and Larkins-Pettigrew 2020). These disparities have continued; as of early August 2020, 20% of the 4.7 million individuals infected with COVID-19 in the U.S. were African American as well as 23% of deaths (Centers for Disease Control and Prevention 2020b), despite their only comprising 13% of the population (U.S. Census Bureau 2019). Predictably, Deep South states, Alabama in particular, have experienced more pronounced disparities among African Americans relative to their percentage of the state population, with morbidity at 27% of the population but mortality from COVID-19 at 42% (Alabama Department of Public Health 2020a). COVID-19 appears to have joined a long list of health conditions demonstrating unequal health outcomes among individuals living in disadvantaged areas, indicating that the inequalities in outcomes are associated with inequalities in social conditions (Marmot and Allen 2020).

Several obesity-related health conditions increase risk of contracting severe COVID-19 illness; among these are cancer, serious heart conditions, diabetes, lung disease, and kidney disease (Raifman and Raifman 2020, Centers for Disease Control and Prevention 2020a). Unfortunately, African American populations are already disproportionately vulnerable to cancer and obesity-related chronic diseases (Cunningham et al. 2017, Latino-Martel et al. 2016, Robert Wood Johnson Foundation 2019), placing them at greater risk of disparate outcomes in yet another health condition. To understand obesity-related health disparities associated with COVID-19, and to inform future interventions, it is crucial to examine their drivers – the social determinants of health (SDOH), which include social, economic, environmental, and cultural factors (Marmot and Allen 2014, Cockerham et al. 2017). These factors (e.g., education, income, employment status, neighborhood conditions, and social connections) influence population health as well as differences in health status between groups and individuals (Marmot 2015). SDOH, such as education, resources, or discrimination, can be considered to be "upstream," which, in turn, impact "downstream" determinants such as knowledge, attitudes, beliefs and behaviors (Braveman, Egerter, and Williams 2011). Acknowledging Braveman and colleagues' (2011) position that short-run interventions can effectively address downstream determinants, it is important to examine upstream factors associated with poor health and the mechanisms linking upstream and downstream determinants.

SDOH have the potential to impact health positively or negatively depending on how they manifest. For example, higher income is typically associated with better health by providing

access to more resources including health care, better living/working conditions, and greater social capital, while lower income can lead to worse health due to lack of these same resources. Thus, poverty is considered a social risk factor, a term used to describe a SDOH that impacts health negatively (Alderwick and Gottlieb 2019). Social risk factors impacting COVID-19 outcomes among African Americans include limited access to healthy food, low income, service-oriented employment increasing exposure to the public, and lack of health insurance. Limited access to grocery stores selling affordable produce was already an issue for African Americans living in under-resourced communities (Thibodeaux 2016); however, the pandemic exacerbated shortages of necessary goods due to supply chain issues early on (Cullen 2020). As well, African Americans disproportionately represent low-wage, blue-collar and service jobs (U.S. Bureau of Labor Statistics 2020). With stay-at-home orders in most U.S. states, many businesses either shuttered, moved to a work-from-home model, or restructured their service delivery models to comply with mandates (Tomer and Kane 2020). Although some in service-sector jobs continued, prevention measures such as social distancing were difficult for many in this group of workers and working from home was not an option for many racial and ethnic minorities, including African Americans (Kantamneni 2020). These changes resulted in mass layoffs and unemployment for those not able to work within these models or increased exposure risk for vulnerable front-line service workers (Mongey, Pilossoph, and Weinberg 2020). And finally, there is evidence that lack of health insurance coverage is associated with increased COVID-19 incidence among African Americans (Millett et al. 2020). As the majority of health insurance coverage in the U.S. is obtained through employment (Berchick, Hood, and Barnett 2019), loss of a job means losing access to health care, which can be particularly problematic in states like Alabama that did not expand Medicaid under the Affordable Care Act (Garfield, Orgera, and Damico 2020).

While handwashing and covering sneezes are manageable behaviors, some prevention strategies to mitigate transmission of COVID-19 could present challenges for those living in lower socioeconomic conditions. These include complying with state mandates regarding stay at home orders (for those working in essential jobs), the financial cost associated with wearing face coverings in public, and maintaining distances of six feet between oneself and others (crowded working/living conditions) (Centers for Disease Control and Prevention 2020c). Despite widespread dissemination of these measures to the public, there have been frequent updates as scientists learn more about the disease. Individuals, particularly African Americans who have a history of medical mistrust (Brandon, Isaac, and LaVeist 2005, Jacobs et al. 2006), may regard these seemingly contradictory or confusing health messages from government officials at local, state, and federal levels with mistrust and skepticism, possibly resulting in their disregarding safety measures (Berger et al. 2020, Yancy 2020). Further, prevention measures may be more difficult for African Americans living in disadvantaged neighborhoods due to a greater likelihood they live in high density spaces (Yancy 2020). A single home where multiple generations live together introduces barriers when isolating a family member infected with COVID-19, particularly when the family has low income and cramped living conditions (O'Conor et al. 2020).

It is crucial that public health professionals understand how COVID-19 is perceived collectively in African American communities before designing and implementing virus

mitigation interventions. Understanding residents' needs and concerns will provide clearer details of what issues are most important to address. Therefore, this study examined the virus-related perceptions related to prevention, coping, and testing of African American residents living in under-resourced urban and rural communities in Alabama.

Methods

Study design

We qualitatively assessed the perspectives of the COVID-19 pandemic on African Americans living in five urban and rural low-income communities in Alabama using focus groups, each consisting of 7-8 community residents and stakeholders (local government, church, school, and business leaders within each community). In May 2020, a virtual focus group, approximately 90 minutes in length, was held with members of each of the five communities. Focus groups were audio- and video-recorded and led by trained African American moderators. Recent research has shown that utilizing online or virtual methodology can be an effective way to conduct focus groups (Reisner et al. 2017), and this method was appropriate in a time of social distancing, when the Alabama stay-at-home order was in effect (Alabama Department of Public Health 2020b). The study was approved by the Institutional Review Board of the University of Alabama at Birmingham (UAB). Informed consent was obtained by each participant prior to the commencement of the focus group. Participants were compensated $50, sent through the mail.

Participant recruitment and settings

Focus group participants were recruited by staff from the UAB Minority Health and Health Disparities Research Center (MHDRC), established in 2002 (University of Alabama at Birmingham 2020). The MHDRC generates and disseminates research from biomedical, behavioral, and social sciences in order to reduce health disparities experienced by vulnerable populations and disadvantaged communities. Community Engagement is a key component of the MHDRC, and through the Building Healthy Community (BHC) coalitions, staff work with community members to build community capacity for the implementation of health-related initiatives that support improvements in minority health and the reduction of health disparities. Our community engagement team accessed 63 potential participants through email and phone calls to recruit for community-specific focus groups. Participants were either members of the respective coalition or a resident of the community recommended by a coalition member. Focus groups lasted approximately 90 minutes, took place through a secure Zoom virtual meeting (Zoom Video Communications 2020), and were led by MHDRC staff trained in moderation skills by the Principal Investigator (LB). The Zoom video conferencing platform has been determined to be an effective, cost-effective tool in qualitative health research (Archibald et al. 2019).

Each of the five BHC coalitions represent under-resourced communities with large African American populations, high concentrations of poverty, and lower levels of education as these particular SDOH factors tend to drive disparate health outcomes (Marmot 2015). The five communities that were involved included three communities in Birmingham (Jefferson County), one in rural Alabama (Dallas County), and another near the Gulf Coast (Mobile

County). Each community had a poverty rate (defined as below 100% of the federal poverty level) of greater than 30%, a rate of residents without a high school diploma of 20% or greater, and a 75% or greater African American population (Institute for IP3 2020). Eligibility criteria included 18 years of age or older, access to the internet, and resident of the community or member of the respective coalition.

Theoretical framework

Based on the SDOH Framework (Solar and Irwin 2010), our study design was guided by the PRECEDE- (Predisposing, Reinforcing, and Enabling Constructions in Educational, Environmental Diagnosis and Evaluation) – PROCEED (Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development) Model (Green and Kreuter 1991). We chose this model, in short, because the perspectives gained from the focus groups will inform future COVID-19 mitigation interventions. Specifically, we utilized the PRECEDE component of the model, which focuses on predisposing, enabling, and reinforcing factors inherent in health behaviors and interventions, and assists in the development of the objectives for interventions, to organize emergent themes. Predisposing factors include intrapersonal knowledge (beliefs and values that influence behavior at the individual level); reinforcing factors refer to the interpersonal, including family or social influences on health care decision-making; and enabling factors include the structural, logistic, or policy factors that are involved in engagement in the target behaviors. The PROCEED component, which focuses primarily on implementation and evaluation, will be utilized at a later date once interventions are designed and implemented.

Procedures

A semi-structured focus group guide was developed based on the PRECEDE model in relation to general perceptions of COVID-19 to be used during the focus groups. Topics included the impact of COVID-19 on the community, transmission and prevention, barriers to following prevention guidelines, and barriers to testing and treatment.

Data analysis

Focus groups were audio- and video-recorded and transcripts were transcribed and analyzed according to the guidelines of Thematic Analysis (Braun et al. 2019) using Nvivo 12 (QSR International 2018). Transcribed data were read by two investigators (LB, YS) to identify underlying concepts and develop an initial coding structure. The investigators then independently coded the transcripts and met to discuss and reconcile divergent coding. During this process, codes were deleted, trimmed, renamed, and elevated into themes. The two coders independently recoded the data according to final coding structure. Intercoder reliability using Cohen's Kappa was calculated to be 0.922 with the assistance of the Coding Comparison Query function in Nvivo. Finally, the investigators examined how well the themes fit with the PRECEDE model, by examining predisposing, reinforcing, or enabling barriers and facilitators to the prevention of, coping with, and testing for COVID-19.

Results

Five focus groups were conducted between May 20 and May 28, 2020 and included 36 total participants (n=7-8 participants in each group). See Table 1 for demographic information. Barriers and facilitators emerged relating to prevention, coping, and testing for COVID-19. High-frequency themes (those discussed by three or more focus groups) for each of the applicable PRECEDE constructs are presented below.

Prevention of COVID-19

Barriers and facilitators to prevention of COVID-19—Focus groups discussed each community's difficulties with following guidelines for the prevention of COVID-19 as set forth by the Centers for Disease Control (CDC), such as social distancing, staying at home, wearing masks, washing their hands (and frequently-used objects and surfaces) often, and using hand sanitizer. Predisposing, reinforcing, and enabling barriers and facilitators to following guidelines were identified.

<u>**Predisposing barriers to prevention.:**</u> All focus groups discussed the theme of apathy as a predisposing barrier related to prevention. For example, one participant from Community 2 described his fellow residents, '…we're not really dealing with the fact that this is a catastrophic disease' (female, age 64). Reasons for this indifference included the fact that many people did not know anyone with COVID-19 and were not aware how widespread infection was within their specific communities. The apathy was particularly poignant among younger people, as mentioned by four focus groups. Participants indicated that younger people were not following guidelines and not worried about COVID-19. "I actually heard one of them verbalize, 'Well I'm not worried about it because it doesn't affect me,'" stated a participant from Community 1 (female, age 50).

<u>**Reinforcing barriers to prevention.:**</u> An important barrier, which may impact the predisposing barrier of apathy, was the lack of information and mixed messages received from authorities about prevention guidelines. Participants from four focus groups mentioned that they felt residents of their communities did not have the information they needed to practice prevention guidelines. For example, '… I just feel like they're giving us some of the information on how to prevent this instead of all,' from a participant in Community 4 (female, age 69), and another from Community 3, 'They need to be more educated on what they need to do, the dos and don'ts' (female, age 58).The problem with the lack of information was magnified by mixed messages they received from authorities, in particular government officials, as mentioned by all five groups. As an example, a member of Community 2 mentioned, '…we're getting conflicting information. It starts with the president and then it filters down. We don't know who to believe…we need the facts' (female, age 64). Another reinforcing barrier mentioned by all focus groups was social distancing. Younger people in particular were not practicing social distancing, as they were gathering in large groups with friends. One participant from Community 4, a public housing community, mentioned that,

> …they don't stay home because ain't nobody visiting them, so they…come back to where they grew up at just to see their family and friends and hang out (male, age 44).

A specific concern repeatedly noted was that younger people might bring the virus home to their parents and grandparents, who may be in a worse position to fight the infection.

Enabling barriers to prevention.: The theme of social distancing can also be considered an enabling barrier when it had to do with crowded conditions in which people lived, especially when it concerned public housing communities. For example, one participant from Community 4 mentioned,

> Because of the way the projects are built, there's not a lot of room for social distancing. There's people on top of people, which lends to my fear that if this thing peaks again, we're—our folks are exposed (male, age 48).

Three focus groups also mentioned that a lack of PPE, especially masks, was a barrier to following guidelines and suggested that these, along with hand sanitizer, be made widely available to their community members.

Predisposing facilitators to prevention.: Individual fear or concern about contracting the coronavirus was mentioned as a driver for following prevention guidelines, and this was mentioned in conjunction primarily with older people by three of the focus groups. For example, a participant from Community 4 stated that the senior citizens on her street,

> …will come outside and sit outside on the porch for a moment, but they're really uncomfortable with you coming up towards them (female, age 69).

This behavior contrasted with younger people who were not following guidelines.

Reinforcing facilitators to prevention.: As the lack of information and mixed messages were identified as barriers to prevention guidelines, participants suggested that clear and comprehensive information from trusted sources was a critical reinforcing facilitator to following guidelines. All five focus groups suggested that the news media (primarily local) and social media (in particular Facebook) were trusted information sources. News media were suggested as being more important for older people, while younger people preferred social media. Participants also suggested that city-level local government officials were trusted, although they expressed frustration that information and mandates from local authorities were often in conflict with those from state and national leaders. Word of mouth, or communication from friends and family, were also mentioned as trusted sources of information, as were scientists and frontline healthcare workers, all of whom were mentioned in three of the focus groups.

Enabling facilitators to prevention.: An important enabling prevention facilitator to following guidelines was contact tracing. Participants in all focus groups were overwhelmingly positive about contact tracing and indicated they would be happy to share names of all people with whom they had been in contact over a period of time, 'If it's gonna save my life and others' (male, age 60, Community 3) and 'to help prevent the chances of

anybody else being affected by it or giving them a heads up' (male, age 32, Community 1). In terms of other enabling facilitators, participants in three focus groups mentioned that the availability of PPE, especially masks and sanitizers for hands and surfaces, was important.

Coping with COVID-19

Barriers and Facilitators to Coping with COVID-19—Participants were asked about how COVID-19 had impacted their communities. Their responses focused on the idea of coping or lack thereof. Themes related to predisposing, reinforcing, and enabling barriers to coping were revealed, while predisposing facilitators to coping were identified.

Predisposing barriers to coping.: Across all focus groups, an emerging theme discussed as a predisposing barrier to coping with the outcomes of COVID-19 was lack of technical knowledge impacting access to the internet. Without knowledge of how to access the internet, community members could not connect with many important institutions such as churches and healthcare. Older people were singled out as a group with the least knowledge about connecting to and effectively using the internet. A participant from Community 2 stated,

> A lot of the older generation, that's including myself, are not computer savvy enough to do it (female, age 60).

Food insecurity was considered a barrier to coping in all focus groups. Although a few comments were made about how some people were eating better because they were not eating out as much and cooking more, when it came to nutrition, the focus was on lack of access to food due to loss of jobs and income and children who may miss meals from closed schools. For example, a participant from Community 1 stated,

> My biggest fear is that the limited access to the things in the community and people in the community…When school was canceled—they tried doing lunches in various places for free—for free, to give them away, but people didn't take advantage of this opportunity for whatever reason…some kids just could not benefit from the different sites for whatever barriers… (female, age 50).

Three focus groups also mentioned that individuals of all ages may be suffering from more difficult mental health issues as a result of the pandemic due to a variety of stressors, and that '…it seems like the perfect storm for people that are prone to mental illness' (female, age 60) as a participant from Community 2 stated.

Reinforcing barriers to coping.: Several participants mentioned isolation from others in relation to reinforcing barriers to coping. Three focus groups discussed the impact that isolation was having on their communities and themselves. For instance, a participant from Community 2 stated, 'I think most people feel like, and I can speak for myself, disconnected' (female, age 71). Another participant from Community 5 suggested,

> I think it is emotionally taxing, and I think quarantining and some of the social distancing guidelines can make you feel isolated (male, age 42).

Further, many comments, from all five focus groups, focused on the impact that school closures were having on children with respect to boredom and isolation. As a participant from Community 4 mentioned,

> …the little structure in their lives that they have was interrupted, so they seem to have been struggling with that and trying to find things to do other than just hang out on the corner (male, age 53).

Participants from four focus groups mentioned church gatherings and the dissonance they felt about missing their fellow parishioners, but also feeling that church buildings being closed were in their best interest for safety. A participant from Community 3 expressed,

> Oh, it has impacted me greatly because I miss church a lot. I miss socializing with friends and other family members (female, age 59).

Enabling barriers to coping.: All focus groups mentioned concerns over the economy and job loss as major barriers to coping, admitting that the worse may be yet to come. As described by a participant in Community 2,

> Even the persons that go back to work, they have been set back enormously with their finances (male, age 72).

In addition to missing out on school meals, participants also believed that children were going to suffer from lost learning due to the lack of in-person school attendance. Many of the schools in the neighborhoods were already considered to be failing (Alabama State Department of Education 2020), and students from these low resource environments were having difficulty adjusting to online learning. Students, as well as others in the community, may not have had access to Wi-Fi or a device, despite the best efforts of school systems, which may exacerbate learning difficulties. For example, a participant from Community 5 stated,

> The school system did provide laptops and hotspots, but a lot of the students, for whatever reason, did not pick them up (male, age 50).

Not only children, but older adults who lack Wi-Fi access and/or a device, were also mentioned as being isolated from institutions such as church and health care during the pandemic. As telehealth was often the only way to see a medical provider, access issues due to connectivity were discussed by all five focus groups.

Predisposing facilitators to Coping.: Participants from three focus groups mentioned their faith as a way of coping with the pandemic. They shared messages such as, 'Have faith not fear' (female, age 65, Community 1), 'God is speaking to all of us and we need to listen' (female, age 50, Community 1), and '…God got it all in control' (female, age 59, Community 3), which helped them deal with fear and uncertainty of the present situation. Participants from four groups also mentioned their hopes for a post-COVID world that helped with coping, such as, 'I'm hoping something very positive comes out of this' (female, age 68, Community 1), and 'I hope something happens…that we end up better for it…I hope we learn from it' (male, age 48, Community 4). Finally, engaging in increased physical activity during the pandemic was mentioned and could contribute to coping, such as 'I'm

doing better because I force myself to walk at least 30 minutes a day' (female, age 72, Community 1).

Testing for COVID-19

Barriers and Facilitators to testing for COVID-19—In addition to prevention and coping, PRECEDE themes related to predisposing, reinforcing, and enabling barriers and facilitators to testing were identified.

<u>Predisposing barriers to testing for COVID-19.:</u> Participants from three focus groups mentioned that misunderstanding, which led to fear on the part of community members, was a barrier to testing. For example, a participant from Community 1 reflected,

> …from what I've heard people say, they're afraid that if they get the test, they gonna get it (female, age 50).

Community members seemed to fear that they may get COVID-19 as a direct result of getting a test for it, akin to having flu symptoms after getting an immunization for influenza. Much confusion within communities about what the test for COVID-19 entailed, and the difference between a test and a vaccine, were also discussed.

<u>Reinforcing barriers to testing for COVID-19.:</u> A deep mistrust of health care was a common theme discussed among three focus groups. For example, a participant in Community 1 stated,

> To be very honest—and it's getting back to a whole lot of things that have happened to our people back in the day. They don't trust doctors. They don't trust people…I haven't taken the test. I don't know if I'll take the test (female, age 68).

In fact, the word 'Tuskegee' was mentioned by three focus groups, each invoking the term to describe the community memory of the unethical Tuskegee Syphilis study conducted by the Public Health Service that spanned 1932 to 1972 in the town of Tuskegee, Alabama (Washington 2006).

> To go back to—a lot of our people—as was said earlier—can recall how people of color were used as experimental beings rather than humans for testing (female, age 65, Community 1).

> I think that's the reason why they don't even take advantage of in the communities where the testing sites are, they're not taking advantage of that because of what happened back in the Tuskegee incident (female, age 60, Community 2).

<u>Enabling barriers to testing for COVID-19.:</u> Participants in four communities mentioned that it was important that testing be brought into their communities as many residents did not have access to reliable transportation or did not trust going to other communities. For example, a participant from Community 2 stated,

> There's concern about the testing sites being accessible still in all communities…If you are a senior, and you don't have your own car, and you aren't able to take a bus

to that location… the logistics of the testing situation are just not amenable (female, age 72).

Although some participants mentioned that testing was becoming more available in their communities, many were concerned with restrictions to availability. For example, even if tests were being offered in a specific location, if individuals were asymptomatic, they could not get a test. Finally, cost was mentioned as a barrier across four focus groups. A participant from Community 5 suggested that it was important that people trusted that the test was free as well, if it indeed was,

> …even though it is publicized that you can get tested for free, but I do think it is concerns that community members have that, is this gonna be a bill on the back end (female, age 49).

Predisposing facilitators to testing for COVID-19.: Participants from three focus groups mentioned providing incentives as being a facilitator to testing. A participant from Community 1 stated '…I guarantee you, if you give some type of incentive, they will get there and test' (female, age 50), and '…the truth is, we've had a legacy of people coming into our communities sprinkling trinkets, and our folks have gotten used to it' (male, age 48, Community 4). Incentives mentioned were free masks, $25 gift cards, or a raffle of something larger like a microwave.

Reinforcing facilitators to testing for COVID-19.: In contrast to the aforementioned misunderstanding, considered a predisposing barrier to testing, information that is clear and trustworthy was considered a reinforcing facilitator. For example, a participant from Community 4 suggested,

> We need to have places positioned in our communities where folks can walk up and get tested and maybe be educated on exactly what's gonna happen when you're tested. You're not being vaccinated. You're being swabbed. It needs to come from folks that look like them… (male, age 48).

Enabling facilitators to testing for COVID-19.: Finally, enabling barriers to testing, included a convenient location and free cost. For example, a participant from Community 1 suggested,

> Provide it right there inside the neighborhood to cut out some of the barriers as far as transportation, and then make it free and accessible as well (male age 32).

Discussion

African American participants in our study were not in a unique situation; COVID-19 health disparities occur across the U.S., and other racial/ethnic minority groups are also affected, particularly Latinx residents (Raifman and Raifman 2020, Mahajan and Larkins-Pettigrew 2020). As the purpose of this study was to examine community members' and stakeholders' perspectives related to COVID-19 in low-resource, African American communities in our immediate area, our approach yielded valuable findings applicable to other states. Participants described multi-level barriers that were related to SDOH, and it is clear that

these underlying social risk factors may serve as mechanisms to further exacerbate health disparities among this population. The SDOH alluded to in focus groups, i.e. education, income, employment and occupation, neighborhood/living conditions, and social connections, were intimately associated with emergent themes in this study.

Prevention of COVID-19

Challenges in adhering to preventive measures were seen in the related themes of *apathy*, *information*, *social distancing*, and *lack of PPE*. Participants described individuals, especially younger people, as being apathetic to following guidelines primarily because they lacked or misunderstood information regarding the severity and prevalence of COVID-19 in their communities. Participants suggested that this misunderstanding of the importance of following guidelines possibly stemmed from mistrust of medical personnel and government officials, who were providing inadequate information and mixed messages. A lack of commitment from the public has been found to be a significant barrier to following measures to prevent the transmission of COVID-19 (Maqbool and Khan 2020) and reasons for this lack of investment may be misunderstanding and mistrust. Education is an important SDOH and, although mixed messages and incomplete information stemming from public health and political leaders may impact people of all educational levels, higher education attainment generally leads to better health knowledge and literacy (Braveman, Egerter, and Williams 2011), enabling people to better interpret health messages and weigh correct information against incorrect. People living in communities who experience the social risk factor of low education attainment, such as those represented in this study, may be more likely to be confused if information is incomplete or unclear.

The difficulty with social distancing and PPE represented enabling barriers to prevention. Participants described crowded conditions in public housing communities that made social distancing nearly impossible, providing evidence that neighborhood living conditions are a risk factor for this population (Braveman, Egerter, and Williams 2011). The lack of PPE, especially masks, was also described and could be related to the SDOH of income, but also neighborhood living conditions where stores were not adequately stocked with supplies necessary for prevention of COVID-19.

Coping with COVID-19 related challenges

Many coping-related themes that emerged (*mental health, isolation/decreased community ties, children, church gatherings, education/children*, and *healthcare access/telemedicine*) were related to the theme of *technology*, which included access to the internet, a device, and skills and knowledge needed to connect. Access to social connections, as well as work, school, church gatherings and health care providers, relies heavily on technology during times of social distancing (Benda et al. 2020). Therefore, access to broadband, closely associated with income, has been called a SDOH during COVID-19 because of its impact on accessing the health care system, the potential to work from home, the ability to apply for unemployment benefits, and educational opportunities for all ages (Benda et al. 2020). Since the beginning of the pandemic, it has been clear that internet access has the potential to increase health disparities as the elderly, racial/ethnic minorities, and people with low socioeconomic status are less likely to be able to connect (Benda et al. 2020, Bakhtiar,

Elbuluk, and Lipoff 2020). Improving broadband, ensuring that individuals have internet-capable devices, and providing training in using the technology effectively are important factors in decreasing disparities that may emerge or continue during the pandemic.

Emergent themes of *nutrition (*food insecurity*), mental health (*difficulties), *education* and *economy and jobs* are closely related to the SDOH of income, neighborhood living conditions, education and occupation, and social connections. All focus groups described food insecurity as a barrier to coping with the COVID-19 pandemic, which is linked to the social risk factors of job loss and poverty. School closures impacted not only children's ability to learn in their educational setting (theme of *education*) but also their ability to receive meals at school (theme of *nutrition*) and interact with other children. Mental health challenges were discussed by focus groups resulting from multiple stressors such as job loss, poverty, fear and uncertainty, and isolation from others. Coping is particularly difficult for individuals with inadequate financial and social assets and chronic stress links many social risk factors to poorer health outcomes through multiple pathways (Pearlin and Bierman 2013). With participants describing the pandemic as exacerbating stress in community members, COVID-19 has the potential to impact long-term health outcomes through lasting effects of pandemic-related coping difficulties (Garfin, Thompson, and Holman 2018).

Testing for COVID-19

Finally, barriers to testing due to themes of *misunderstanding, fear, mistrust, availability, cost,* and *location/lack of transportation* to fixed-site testing locations, indicate that the SDOH of education, income and neighborhood conditions may serve as important underlying mechanisms of testing barriers that will ultimately lead to disparities in COVID-19 outcomes. If low income African Americans do not seek testing in a timely manner, COVID-19 has the potential to spread more broadly and become more severe. As discussed previously, higher educational attainment is positively associated with health literacy enabling the interpretation of health education messages (Braveman, Egerter, and Williams 2011). Conversely, low educational attainment, is related to misunderstanding with regard to both prevention and testing as well as associated with fear. Participants described hesitancy in getting tested because of misunderstanding and fear among community members, such as the fear of contracting COVID-19 by getting tested.

As well, the themes of mistrust and misunderstanding were woven into many of the testing discussions. Medical mistrust is an ongoing issue among African Americans (Jacobs et al. 2006, Brandon, Isaac, and LaVeist 2005), and it has been suggested by some academics that mistrust may affect their beliefs in the seriousness of COVID-19 and, ultimately, their decisions to get tested or seek treatment (Wells and Gowda 2020). As such, medical mistrust may be an important social risk factor (Williamson and Bigman 2018), that must be considered in relation to COVID-related health disparities. Given that our study took place in Alabama, it is not surprising that three focus groups referenced the Tuskegee Syphilis Study. However, mistrust must be taken into account within the context of dissemination of public health prevention information. The fact that the messages coming from government and health officials were not consistent exacerbate mistrust (Berger et al. 2020).

Finally the SDOH of income and neighborhood conditions underpin emergent themes classified as enabling barriers—*availability of testing*, *cost,* and *location/lack of transportation*. Participants discussed that the lack of access to reliable transportation, lack of testing locations in communities, and perceived cost of the test were deterrents in obtaining a test, even when indicated by exposure or presenting symptoms.

Themes related to testing, in addition to those corresponding to prevention and coping described above, have the potential to impact health disparities related to COVID-19, highlighting the importance of consideration of SDOH factors in the design and implementation phases of interventions.

Facilitators to Prevention, Coping and Testing

Ultimately addressing SDOH, such as income, education, and medical trust, would be the most effective path by which to diminish health disparities related to COVID-19. The virus has brought to the forefront the reality of health disparities impacting African Americans and other racial/ethnic minorities. Unfortunately, due to the urgency of the pandemic, there has not been adequate time to effectively address COVID-19's underlying, upstream SDOH. Therefore, we believe results from our study can provide valuable insight into the development of mitigation interventions.

Trust in medical procedures and personnel are important adherence facilitators when introducing a new health education and virus testing intervention (Williamson and Bigman 2018). Our study results pointed out that facilitators regarding trust were evident at multiple levels. To encourage prevention behaviors related to COVID-19, facilitators included themes of *trusted information sources*, clear, accessible, and comprehensive *information*, the provisions of PPE, and contact tracing. With regard to facilitators to coping, themes such as *religion, hope* and *physical activity* emerged, and, in terms of facilitating testing for COVID-19, the same themes facilitating prevention behaviors again emerged, as well as *testing incentives, increasing availability*, and *offering testing at no cost*.

Three vital findings that might inform COVID-19 prevention and care interventions emerged: 1) the need for access to clear, accurate, targeted, and visible educational materials available to communities; 2) access to testing via walk-up or drive-through access within the most vulnerable communities negating transportation barriers; and 3) individuals, perhaps a patient navigator or community health advisor, trusted by the community, to guide residents through the process of identifying symptoms, accessing testing, explaining results, and connecting those with positive test results to a healthcare provider for follow-up care.

Strengths and Limitations

We have a few limitations to this study to note. Access to the internet and the ability to participate in a Zoom call were required. Although, theoretically, this means we may have omitted the perspectives of people without access, all of the participants we contacted during the recruitment phase had the capability to connect via zoom, although some required lengthy training sessions to get set up. Further, our focus groups included community stakeholders and residents together. Segmenting stakeholders and residents in each community may have enabled us to gain richer perspectives of both groups. Finally, we had

one rural and four urban focus groups. Although we did not find any noticeable differences between the groups (except that the rural group lost their internet access during the focus group due to a storm), including more rural focus groups may have enabled us to detect differences in perspectives between rural and urban settings.

We had two specific strengths to note. While several scholars published commentaries speculating that the medical mistrust commonly felt by African Americans would also be present in COVID-19 perceptions (Wells and Gowda 2020, Krishnan, Ogunwole, and Cooper 2020), we could not identify any research study that specifically reported that finding at the time of this paper submission. Our study provides evidence that, in relation to COVID-19, a mistrust of medical providers may exist among African Americans living in low-resource communities, possibly impacting perspectives of messaging regarding virus preventive measures or treatment. Our second strength was the use of the Zoom platform. It enabled us to access our participants during a time of social distancing in a convenient and effective way. Although it took our community engagement staff extra time to work with participants individually to make sure they were set up before the focus group was conducted, the virtual focus group format proved to be a feasible way to collect qualitative data. Participants were unilaterally positive about the virtual Zoom format of the focus groups and used words such as 'wonderful' and 'great' to describe it. Other research substantiates the viability of Zoom as a tool for collection of high quality qualitative data, as it is simple to use, convenient, cost effective, and secure (Archibald et al. 2019).

Conclusion

Because COVID-19 outcomes appear to be very closely related to current health status, it is imperative that we continue to focus our attention on mitigating the upstream SDOH exacerbating health disparities that impact African Americans, such as poverty, access to education, and access to health care, all of which are related to prevention, coping, and testing for COVID-19. These SDOH impact other racial and ethnic minority groups in low resource settings in the U.S., such as Hispanic/Latinos and Native Americans, leading to health disparities among these groups as well (Marmot and Allen 2020, Mahajan and Larkins-Pettigrew 2020). Eventual downstream interventions to address barriers to adherence to prevention guidelines, coping, and testing must also consider medical mistrust and misunderstanding, as they are woven throughout the perspectives of African American community members and stakeholders. Urgently needed educational and behavioral interventions can benefit vulnerable populations in the short-run while, while continuing to address disparate SDOH, such as income, education, neighborhood living conditions, and medical trust, will be crucial to decreasing health disparities more broadly among African Americans and other racial/ethnic minority groups in the U.S.

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Table 1.

Characteristics of Participants in Focus Groups

	Total	Community 1 (Urban)	Community 2 (Urban)	Community 3 (Rural)	Community 4 (Urban)	Community 5 (Urban)
N	36	7	7	8	7	7
Age[a]	54.3 (12.3)	57.4 (14.9)	59.3 (13.4)	51.4 (10.9)	51.9 (9.2)	52.0 (13.6)
Age Range (years)	29 - 77	31 - 71	35 -72	29 - 60	44 - 69	35 - 77
African American[b]	94	100	86	86	100	100
Female[b]	67	71	71	75	43	71
Coalition Member[b]	92	100	57	100	100	100

[a]Mean (SD)

[b]Percentage

Table 2.

Predisposing, Reinforcing, and Enabling Barriers and Facilitators to Prevention of COVID-19

PRECEDE Construct	Themes
Predisposing Barriers to Prevention	• Apathy • *Young people* –not worried about COVID

Reinforcing Barriers to Prevention	• *Social Distancing* (lack of due to gathering in groups, especially younger people)
	• Information
	  – mixed messages (government officials)
	  – lack of information

Enabling Barriers to Prevention	• *Social distancing* (lack of due to crowded conditions, essential jobs) • Lack of PPE
Predisposing Facilitators to Prevention	• *Fears* (of getting the virus) • *Older people* – following guidelines (concern with contracting virus)

Reinforcing Facilitators to Prevention	• *Trusted information sources*
	  – word of mouth
	  – *news* (local)
	  – frontline workers and scientists
	  – *social media* (Facebook)
	  – *Government officials and agencies* (local)
	• *Information* (accessible, clear and comprehensive)
	• Ways to get information to people

Enabling Facilitators to Prevention	• PPE • Contact tracing

Table 3.

Predisposing, Reinforcing, and Enabling Barriers and Facilitators to Coping with COVID-19

PRECEDE Construct	Themes
Predisposing Barriers to Coping	• *Technology* (lack of knowledge to access internet) • *Nutrition* (food insecurity) • *Mental health* (difficulties)
Reinforcing Barriers to Coping	• *Isolation/decreased community ties* (especially among older people) • *Children* (lack of activities, boredom) • *Church gatherings* (cessation of)
Enabling Barriers to Coping	• Economy and jobs • *Education/Children* (Schools closed, decreased learning, difficulty with online learning) • *Technology* (lack of Wi-Fi, devices). • *Healthcare* access/telemedicine (lack of access due to COVID-19)
Predisposing Facilitators to Coping	• *Religion* (helps people cope and provides hope due to faith). • *Physical activity* (increased) • Hope

Table 4.

Predisposing, Reinforcing, and Enabling Barriers and Facilitators to COVID-19 Testing

PRECEDE Construct	Themes
Predisposing Barriers to Testing	• Misunderstanding • Fear
Reinforcing Barriers to Testing	• Mistrust
Enabling Barriers to Testing	• *Availability* (Restrictions on who can get a test, even if available) • Cost • Location/Lack of transportation
Predisposing Facilitators to Testing	• Incentives
Reinforcing Facilitators to Testing	• *Trusted information sources* - Word of mouth (could apply here) • *Information* (accessible, clear and comprehensive)
Enabling Facilitators to Testing	• Availability (locations made available in neighborhoods) • Cost (free)