

Multilevel, Multidisciplinary, Faith-Based Participatory
Interventions to Reduce COVID-19 Related-Risks
among Underserved African Americans

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SPECIFIC AIMS: This *multilevel*, multidisciplinary, theoretically-based, culturally sensitive, community participatory intervention addresses two major COVID-19 related challenges in underserved and under-resourced African American (AA) communities. One major challenge, at the community level, is preventing outbreaks of COVID-19 at faith-based gatherings. A recent Morbidity and Mortality Weekly Report (MMWR) highlights the potential for widespread transmission of COVID-19 at group gatherings during faith-based events. This report revealed that 38% of 92 parishioners at one church developed COVID-19, along with three deaths.¹ The Center for Disease Control and Prevention (CDC) takes the position that “***faith-based organizations should work with local health officials to determine how to implement the U.S.***

Government guidelines for modifying activities during the COVID-19 pandemic to prevent transmission of the virus to their members and their communities. Among AAs, religion and its institutions have been integral to their culture for centuries, as AAs are more religiously engaged than the general US population.² Higher levels of religiosity are documented among AAs, including prayer, religious service attendance, and involvement of religion in daily life routine.³⁻⁵ The high levels of religious service attendance may present a major challenge in protecting the health and safety of AAs with underlying chronic conditions.⁶

In addition to the risks of COVID-19 infection among AAs, another major challenge is the negative impact of this pandemic on the ***management of chronic conditions***, particularly older adults with co-morbidities and underlying conditions. AA older adults, specifically those managing comorbidities and social isolation, are one of the most vulnerable groups susceptible to COVID-19 infection and have the most severe and critical consequences of this pandemic.⁷⁻⁹ AA older adults with co-morbidities, who heavily rely on county-based safety-net facilities, have had to change their *patterns of seeking required medical care to manage their chronic conditions*, including delaying, reducing, or stopping visits to primary and specialty providers, or to a pharmacy to obtain medication and treatment. Reduced routine access to health care providers and prescribed medications, coupled with risky health behaviors during the pandemic, may substantially exacerbate existing disparities in healthcare utilization, non-adherence to management of chronic conditions, unhealthy lifestyles, and poorer health outcomes among underserved AA older adults.

Restrictions due to COVID-19 have also negatively affected peoples' dietary and lifestyle behaviors¹⁰⁻¹³ and worsened the health of older adults. A recent international study reported that the COVID-19 restrictions had a negative impact on the amount, frequency and type of food and snacks eaten. Physical activity had reduced, with daily sitting time increasing from 5 to 8 h per day.¹¹ It is plausible that older adults in South LA adopted similar behaviors. Many adults in South LA willingly or unwillingly lost employment, lowering their ability to purchase healthy foods. Opportunities for obtaining meals in community settings reduced. Fear of interacting with others reduced the ability to shop for food or exercise outside or in communal settings. It is not yet known how these factors affected dietary intake, access to quality foods, and participation in physical activity among older adults in South LA.

Through our well-established collaboration with AA church leaders in South Los Angeles, we continually ensure that AA ministerial leaders are at the forefront of our efforts to assist in the development of a healthy community. With over 50 years of close partnership and interaction with AA faith-based organizations in Los Angeles, the strong partnership and mutual trust Charles R. Drew University of Medicine & Science (CDU) has developed within the community stands out as one of the defining characteristics of the university.

The specific aims of this study are:

1. ***Community Strategizing:*** To collaborate with 10 AA church leaders on implementing Federal and State (California) public health guidelines for churches for reducing COVID-19 risk in predominantly AA churches in South Los Angeles;
2. ***Community Building and Sustainability:*** To collaborate with 10 AA churches to train 30 church-based AA young adults as health advisors to master information about COVID-19 and its impact on the daily life of underserved AAs, particularly, older adults with underlying multimorbidity or social isolation; and
3. ***Individualized Management of Care:*** To jointly implement and evaluate a telehealth-based, multidisciplinary, culturally-sensitive intervention with 265 AA older parishioners: (i) To mitigate the negative impact of COVID-19 on the management of chronic health conditions, and (ii) to reduce healthcare avoidance behaviors and psychological distress.

There are at least three substantial outcomes that will result from this proposed intervention. **First**, as a result of this community participatory intervention, ten predominantly AA churches in South Los Angeles (one of the most challenged underserved and under-resourced areas in California with a population of over 1 million), will fully adopt Federal and State of California guidelines for COVID-19 preventative practices within their church. By fully implementing these guidelines, we expect that over **3,000 parishioners will be impacted**. **Second**,

this study will recruit and train young church-based health advisors to support AA older adults with underlying conditions for COVID-19 to safely manage their chronic conditions during the COVID-19 pandemic. This intervention is targeting underserved AA older adults, one of the most vulnerable populations impacted by COVID-19. **Lastly**, this proposed project will recruit 265 AA older parishioners to receive a telehealth-based culturally and spiritually sensitive intervention that will provide health coaching and support. This study builds sustainability for the AA community with the training of 30 AA church-based health advisors who will continue to be a valuable community resource as they can continue to provide coaching and support after the intervention. This proposed study is strongly endorsed by the California Black Health Network.

Administrative Supplements for Community Interventions: This proposed application directly linked to one of the four research aims of the Accelerating Excellence in Translational Science (AXIS) program, the *Community Engagement Core* (U54 program **Award #:** 2U54MD007598 - PI: JV Vadgama). This core is specific in its design to develop partnerships and collaborations with community organizations and institutions that will integrate community knowledge and experience in the exploration of reducing health disparities and mitigating disease risk and burden in underserved communities. The project will fulfill the objective of the *Community Engagement Core* by establishing new community collaborations in this shared academic-community collaborative grant proposal.

RESEARCH STRATEGY

1. Significance: COVID-19 among African Americans (AAs): COVID-19 death rates are disproportionately higher among AAs compared to the general population.^{8,14-19} COVID-19 outcomes are worse in US counties that are predominantly AA, with AA infection rates three times higher and death rates five times higher than predominantly White counties.²⁰ Dr. Fauci, director of the National Institute of Allergy and Infectious Diseases reported in a press conference that COVID-19 is 'shining a bright light' on 'unacceptable' health disparities for AAs. He attributed these inequalities to a higher burden of underlying medical conditions among AAs.²¹ The susceptibility for COVID-19 is heightened among AAs due to increased rates of CVD, diabetes, hypertension, and obesity.²²⁻²⁴ These underlying conditions and outcomes are rooted in structural racism via increasing exposures to risks, increasing biological vulnerability, and decreasing access to protective factors.²⁵⁻²⁸

COVID-19 and AA Churches: AA churches have played a role in ameliorating the impact of structural racism for centuries, with religious and spiritual worship being embraced as an essential part of life. However, the COVID-19 pandemic has interrupted the functions and impact of the church, with the cancellation of services and activities. With both the CDC and the State of California releasing guidelines to reopen community institutions, churches must modify their own faith traditions and policies in preparation of reconvening in-person gatherings to reduce the spread of COVID-19. The CDC "scaling up operation" **strongly recommends** that faith-based organizations establish and maintain communications with local authorities and **work closely with health organizations** to determine how to effectively implement their guidelines. The CDC recommends that **all clergy and staff members in the church be trained** with implementing and maintaining safe practices for COVID-19 risk reduction. Safety actions includes the following topics: 1) promotion of [healthy hygiene practices](#), 2) personal protective equipment, 3) cleaning, disinfection, and ventilation protocols, 4) social distancing measures, 5) minimizing sharing of worship materials, and 6) increasing preventative practices against spread of COVID-19 in childcare setting and youth and summer camps. The guidelines provides detailed information on "Monitoring and Preparing" when staff or parishioners get infected including 1) recognizing signs and symptoms, 2) plan for when a staff member or parishioner becomes sick, 3) promotion of communication and messaging by posting cultural competent signs and media and 5) disinfecting areas and the building before resuming activities.²⁹

COVID-19 and AA Older Adults: COVID-19 related hospitalization and death rates increase with age and are highest among older adults, with the majority of hospitalized patients having underlying conditions.³⁰ In addition to older age, underlying health conditions, including cardiac and respiratory diseases, will lead to more severe and aggressive management of COVID-19.³¹ Older AA adults with comorbidities are strongly encouraged to practice social distancing and isolation as a prevention measure. Yet, this may lead to *decreased healthcare utilization and treatments which is required for management of their chronic conditions*. Risk reduction of COVID-19 and chronic disease management for AA older adults with multimorbidity are highlighted as difficult challenges due to the high vulnerability of this group, a fact which warrants critical attention.^{20,32-35}

Collaborating with AA Churches: Historically, AA churches support their families economically, spiritually, socially, and culturally, through programs unmatched by other social institutions.³⁶ Studies show that the church and its leaders in the AA community can increase effectiveness of health programs.^{37,38} AA church leaders perceive that their endorsement of health information and communication can empower positive health behaviors and promotion among AA populations.³⁹ Several studies show that the church and its leaders in the

AA community can increase the effectiveness of health programs.^{37,38} Using church-based health advisors for community health outreach studies is strongly recommended for AAs due to medical mistrust and institutional racism in healthcare settings.⁴⁰ Community health advisors are highly regarded as trusted members and stakeholders in minority communities, especially since they are trained to improved facilitation of care, and cultural appropriateness of service delivery.⁴¹ These types of roles have been effective in closing gaps of unmet needs and decreasing health disparities for minority communities in post-disaster environments.⁴²

Intergenerational Collaboration in AA Church to Reduced Risk of COVID-19: Numerous studies show that AA consistently report higher levels of mistrust in their providers and the health care system than Whites.⁴³⁻⁴⁹ It is also well-documented that AA older adults have significantly less trust in their own physicians and greater trust in informal health information sources than their White counterparts. Greater mistrust in one's own physician is associated with lower level of utilization of health care utilizations.⁴⁷ AA churches promote intergenerational collaboration and empower young adults in AA churches.⁵⁰ Incorporating AA young adults in intergenerational contact to improve the health of older adults is entirely welcomed by church leaders.¹⁷ In addition, older people willingness to modify their adherence behaviors are influenced by the communication skills of, and the degree to which they trust their providers.⁵¹ Therefore, using AA church-based health educators for community health outreach is strongly recommended.⁴⁰

2. Innovation: This *multilevel, multidisciplinary, theoretically-based, culturally sensitive, community participatory intervention to mitigate the risk of COVID-19 at faith-based community and parishioner levels (particularly among older AAs)* is innovative in several ways. **First**, we will collaborate with ten predominantly AA churches in South Los Angeles (one of the most challenged underserved and under-resourced areas in California with a population of over 1 million), to fully adopt Federal and State of California guidelines for COVID-19 preventative practices within their church which could easily impact over **3,000 AA parishioners**. **Second**, this study *empowers young adults in African American churches* and promotes intergenerational collaboration between young and older AA adults, which is strongly supported by church leaders, community advocates, and families. **Third**, this project incorporates the collaboration of both academic and church leaders for a community partnered participatory intervention that builds community capacity. This proposed project will build *sustainability* for the AA community with the training of young adult church-based health educators, who can continue providing health coaching and support that is culturally and spiritually sensitive following this intervention. **Fourth**, it addresses the national call for studies focused on assessing the health status and care of minority older populations during the COVID-19 pandemic, with particular attention to improving health equity. **Lastly**, the proposed project team integrates both experienced researchers and established community stakeholders and leaders for a strong collaborative study that can inform various sectors of the AA population. Moreover, by engaging AA churches in South Los Angeles, this project adds a pioneering aspect of chronic disease management by assessing the types of support older AA adults need during an infectious pandemic.

3. Approach: Overview - *This study includes two parts that will be implemented concurrently. Part one includes assisting church leaders to fully implement the CDC/State guidelines and part two includes training 30 church-based advisors to mitigate the negative impact of COVID-19 on the management of chronic health conditions, and reduce healthcare avoidance behaviors and psychological distress among AA older parishioners.*

3.1. The ongoing or potential future public health restrictions (e.g., closures, physical distancing) has no impact on the research approach.

3.2. Multidisciplinary Investigators: One unique feature of this application is that the intervention be will implemented by a multidisciplinary team of community-faculty, church leaders, academic scholars, and health care providers. Our research team includes: an experienced gerontologist; an **AA community faculty** (who also is a church leader); **six AA** health care practitioners and researchers (an infectious disease specialist, a family medicine physician, a nursing specialist, a pharmacist, a community health prevention specialist, and a public health specialist).

3.1. Part One: Specific Aim 1 - Community Strategizing: To collaborate with 10 AA church leaders on implementing Federal and State (California) public health guidelines for churches for reducing COVID-19 risk in predominantly AA churches in South Los Angeles.

Implementation of Aim 1: We will employ various strategies to assist predominately AA churches with implementing and adhering to federal and state public health guidelines, which include 1) create a multidisciplinary taskforce with clergy members and church leaders to develop a surveillance protocol focused on COVID-19 infection prevention and measure progress of COVID-19 prevention efforts, 2) conducting environmental assessments and scans of churches to identify high risk infection areas, 3) developing culturally sensitive communication media and messages with clergy members to deliver to church parishioners, 4)

hosting six monthly seminars to discuss COVID-19 updates for church parishioners, and 5) creating a telephone hotline for church leaders and parishioners to call or text COVID-19 related questions. All of these strategies will occur online, with the exception of the environmental assessment and scan, which will occur in-person with clergy leaders with members of our research team. The development of the surveillance protocol will also be created between the research team and clergy members, with continual updating based on COVID-19 infection rates and federal/state guidelines. The workshops and seminars will be conducted online and involve distance-learning activities and classroom-based discussions for clergy members and church leaders, staff, and parishioners. The six workshops will be conducted by the members of our multidisciplinary research team who will lead 1-2-hour workshop sessions based on their expertise and content area (i.e. geriatric conditions, mental health challenges). Flyers and emails for the workshops will be distributed throughout the digital environment, faith-based organizations and churches, and local community organizations. At each workshop, there will be invited guests who are experts of the workshop topic that will provide additional information about COVID-19. We will work with clergy and church leaders to ensure that the guidelines are adapted to the needs of each participating church. To address any challenges to adopting these guidelines, whether lack of acceptability, adoptability, or understanding of their necessity, we will collaboratively engage the church community's concerns in order to brainstorm ideas and methods of implementation that fit their unique needs (i.e. townhall meetings).

Recruitment of Church Leaders was already conducted by Rev. Waller an AA church and community leader in South Los Angeles who has worked on various projects to reduce risky behaviors and improve health outcomes for the AA population as community faculty ([See the Letter of Support from Watts Area Ministers](#)).

Evaluation: There are various strategies we will employ to conduct evaluation and quality improvement for implementation of guidelines. We will work with clergy members to conduct bi-monthly assessments of church services by scoring specific elements of recommended guidelines for churches by surveying church leaders and observational assessment of each church's environment. Based on the environmental scans and the multidisciplinary taskforce, we will develop a checklist that will include, but not limited to assessment and observation of: 1) social distancing during worship services (i.e. no hugging, close seating), 2) use of face coverings by everyone in the church, 3) disinfection of facilities, 4) personal use of worship hymnals, Bible, and other items, 4) church staff preparedness of staff to identify signs and symptoms of infected individuals, 5) messaging during service regarding COVID-19. The results of bi-weekly checklist and survey will be shared with church leaders for modification of operations and analyzed after 6 months to evaluate adherence of COVID-19 prevention practices. As a result of this intervention, it is expected that the participating churches will meet or exceed 80% of the checklist criteria for the 6-month duration. Additionally, all questions received during the monthly seminars and telephone hotline will be ranked based on the quality as a criterion for improvement of COVID-19 knowledge and practice.

3.2. Part Two: Specific Aims 2 & 3 - Community Building and Sustainability and Individualized

Management of Care - Aim 2: To collaborate with 10 AA churches to train 30 church-based AA young adults as health advisors to master information about COVID-19 and its impact on the daily life of underserved AAs, particularly, older adults with underlying multimorbidity or social isolation; and Aim 3: To jointly implement and evaluate a telehealth-based, multidisciplinary, culturally-sensitive intervention with 265 AA older parishioners: (i) To mitigate the negative impact of COVID-19 on the management of chronic health conditions, and (ii) to reduce healthcare avoidance behaviors and psychological distress. This part includes two phases. **Phase 1** will utilize a community partnered participatory approach that will be specifically tailored to the education of church-based advisors. **Phase 2** will implement "one group pretest–posttest" design to improve COVID-19 associated health outcomes of AA older parishioners in collaboration with trained health advisors. Due to the disproportionate burden of COVID-19 on the AA community, every older adult who participates in this study would be identified as being at high risk for COVID-19 diagnosis and poor health outcomes associated with the disease. We cannot deprive or prevent this intervention for anyone at risk for COVID-19. Moreover, conducting a non-equivalent or a quasi-experimental design would be unethical.

Preliminary Studies: Our team has conducted similar intervention studies among AA older adults focused on reducing non-adherence to medication regimens, polypharmacy, and inappropriate use of medication among underserved 740 AA older adults. Dr. Bazargan has conducted several community-based cross-sectional surveys and interventional studies among older AA adults and specifically 47 out of his 170 manuscripts directly examine the health status and health care utilization of underserved older AA adults.⁵²⁻⁹⁸ The co-investigators of this proposed project have worked together for the last four years and collectively published numerous manuscripts, which 63 of which focused on health disparities and 19 manuscripts focused on health

care utilization, physical and mental health, medication-related challenges, and management of pain and chronic conditions among older AA adults.^{52,54,57-59,61,63-71,73,74,81,99}

Theoretical Framework: We propose to use the *Information, Motivation, and Behavioral Skills (IMB)* framework.¹⁰⁰ We selected the IMB model because there is significant empirical evidence demonstrating its effectiveness.¹⁰¹⁻¹⁰⁷ Specifically, this model is an appropriate, comprehensive health behavior change framework for management of chronic conditions and self-care.¹⁰⁸⁻¹¹¹ This model hypothesizes that information, motivation, and behavioral skills, are the critical elements of behavior change. According to the IMB model, adherence to management of chronic conditions is determined by the extent to which an individual is informed about his/her conditions and needs, is motivated to adhere, and possesses the necessary behavioral skills to adhere in a variety of situations. Providing facts, advice, and guidance about chronic conditions and adherence strategies, is seen as capable of bolstering older adults' self-efficacy and knowledge of their chronic health conditions.¹⁷ The IMB model provides a multivariate explanation of non-adherence and guide to promoting self-care and health care utilization, such as physician visits and adherence to drug regimens and life-style modifications, among people with chronic conditions.¹¹⁰

Design for Phase One of Part Two: 3.3.1. Target Population: We will enroll 30 AA young adults from 10 predominantly AA churches in South Los Angeles to be trained and become a church-based health advisor with expertise in COVID-19. It is expected that 30 young AA advisors to: 1) master information about COVID-19; 2) understand its impact on the daily life of AA older adults, particularly, those with underlying comorbidities; and 3) support older AA adults to reduce COVID-19 risk and improve management of their chronic conditions. For recruiting AA young adults, we will give special focus to 1) those AA young parishioners who regularly attend the church and work closely with health ministry leaders; 2) college student or graduate in health care field; 3) those with strong commitments to the program and are willing to work and support older adults; and 4) have a laptop/desktop computer or iPad to manage telehealth.

Strategies to Train AA Advisors: The workshop training will occur bi-weekly over a 3-month period to prepare them for delivering the intervention to AA older adults. Detailed information on the content areas are described in **Table 1**. The training curriculum will cover the following components: 1) minimize risk of COVID-19 infection and transmission; 2) utilizing remote learning platforms to train older adults on effective use of telehealth; 3) gain extensive knowledge regarding COVID-19 and its impact on individuals with underlying chronic conditions; 4) identify over-reacting (obsessive) and under-reacting behaviors to COVID-19, physical and social distancing, and other measures; 5) assessment of social needs and consequences of long-term social isolation; 6) delivery of extensive knowledge regarding the importance of adherence to medication refills and regimens, as well as adherence to lifestyle recommendations for older adults with chronic conditions; 7) providing functional support to older adults, particularly those who are socially isolated, to manage their activities of daily living; 8) assisting older adults in the use of online services for making medical appointments, obtaining medication refills, etc. and finally, 9) learn administering survey and collect data from older adults. In addition, we will discuss the functions and role expectations of health advisors, including care coordination, health coaching, education, and assessment, social support, and case management and resource linking.^{112,113}

Evaluation of Training: Following each training session, health advisors will complete a standardized survey that assesses the knowledge, self-efficacy, and skills for every workshop. If there are areas that are concerning to the research team based on the answers from health advisors, the subject topic will be repeated further explanation to the group. Within the last session, health advisors will demonstrate their training through a role-playing exercise. In addition, a structured survey lasting about 30 minutes which will be conducted at two time points (pre- and post- trainings) to evaluate church-based advisors' knowledge, attitude, and skills gained from the bi-weekly workshops over the period of 3 months. We will arrange the bi-weekly workshop sessions at times that are convenient to the trainers and trainees. All health advisors will be provided a monetary incentive (a total of \$200 for attending six 2-3 hours workshops) for participating in the program and completing study responsibilities for both phase 1 and 2 (see below). In addition, they will receive a certificate of completion and community recognition as church-based young adult health advisors for minority faith-based institutions. During the program ceremony commencement, three church-based young adult health advisors with the highest satisfaction scores will receive a \$1,000, \$500, and \$300 credit card gifts, respectively. Remediation will be conducted for those advisors who need additional assistance. As a result of this training, it is expected that AA advisors will: 1) score 90-100% on tests that assesses COVID-19 disease, transmission, symptoms, treatment prevention, and its impact on older adults with co-morbidities; 2) understand the use and application of telehealth, apps, and computer-based software to help AA older adults use telehealth and on-line services; 3) gain additional knowledge regarding the importance of adherence to medication refills and regimens, as well as adherence to life-style recommendations for older adults with chronic conditions; 4) support older adults,

particularly those with comorbidities or socially isolated, to manage their activities of daily living and assist them in the use of online services for making medical appointments, obtaining medication refills, etc.; and 5) learn to conduct survey and collect health-related data from older adults as a young adult health educator.

Research Strategies for Phase Two: Recruitment: Recruitment of participants will be from the 10 collaborating churches in South Los Angeles. Recruitment will be conducted by our research team and church-based health advisors trained in phase 1 of this study. We aim to recruit a total of 265 AA aged 65 years and older parishioners. In addition to digital announcements publicizing the proposed project at respective churches, our research team member who is church leader (Reverend Joe Waller) will assist clergy member to convene pre- or post-Sunday sermon meetings to introduce the program to the parishioners. They will also offer the contact information or referral to the church-based health educator, which will allow potential

Table 1. Group Intervention (IMB Framework)

Information	
<ul style="list-style-type: none"> Explain COVID-19 sign & symptoms & treatment. How to minimize risk of COVID-19 infection & infecting others. Skills for COVID-19 self-assessment. When to seek medical advise. Explain connection between age, chronic conditions & COVID-19 risks. Discuss OTC, COM, & Alternative medicine. Timely screening for COVID-19 	<ul style="list-style-type: none"> Explain risks of non-adherence to disease surveillance & monitoring (i.e., lab tests, routine & required screening procedures, etc. Discuss high risk of non-adherence to medications Discuss new initiatives for home-based health care delivery Discuss Telehealth and its importance Discuss internet-based & mail order services (medication etc.)
Attitudes	
<ul style="list-style-type: none"> Reduce anxiety & fear about COVID-19 Recognize & modify over-reacting (obsessive) & under-reacting behaviors to COVID physical & social distancing & other requirements. Discuss health status with nonadherence to medications (stroke, amputation, etc.). Appreciate social needs & consequences of long-term social isolation among older adults 	<ul style="list-style-type: none"> Modify cultural beliefs about testing, vaccination, & adherence to drug regimens & focus on culturally acceptable points that promote adherence. Enhance communication with providers in order to understand relevant information. Encourage the involvement of companions & family in illness management.
Motivations	
<ul style="list-style-type: none"> Invites participants to identify their own challenges & find solutions for their concerns in preventing COVID-19 infection. Enhance self-efficacy of management of chronic health conditions. 	<ul style="list-style-type: none"> Self-identified support for self-management (such as religion or spirituality) Motivate to discuss the medication-related options, & their benefits & risks, with both physicians & pharmacists.
Behavior Skills/Facilitators	
<ul style="list-style-type: none"> Provide skills for specific needs regarding telehealth & online access to services Objective & perceived abilities for minimizing risk of contracting COVID-19 while performing daily activities Train self-monitoring for COVID-19 symptoms Connect patients with community resources. 	<ul style="list-style-type: none"> Develop skills & habits to visit providers continually using telehealth. Promote adherence to a healthy life style. Objective & perceived abilities for acquiring, self-cueing, & conducting tasks for self-management of chronic conditions.
Adherence Behaviors	
<ul style="list-style-type: none"> Getting prescription filled/refilled on time. On-time surveillance & monitoring (i.e., lab tests, routine & required screening procedures, etc.) Access to pharmacies & getting prescription filled/refilled on time Safe & effective use of primary care services 	<ul style="list-style-type: none"> Use of on-line services for making medical appointments, obtaining medication refills, etc. Adhere to special instructions for life-style modification, diet etc. Adhere to vaccination schedules for older adults Adhere to COVID-19 testing

participants to sign up for the study or provide the contact information of other potential AA older adults (parishioners' parents, siblings, etc.) who would be eligible and benefit from this intervention. **Exclusion**

criteria: A resident in a care facility and those with cognitive deficits (identified by short version of mini-mental state examination instrument). In addition, we will assess the participants' physical ability in terms of sight, hearing, and literacy (good, fair understanding, illiterate), which is necessary since this intervention will be conducted online and we will need to assess which participants may need additional support. Participants will be informed that this intervention will be conducted over three months and will involve three broad activities: 1) participation in pre-intervention (made up of Parts A and B) and post-intervention (made up of Part A only) surveys lasting about 100 and 50 minutes respectively. Part A will include validated measures of health, health

behaviors, healthcare utilization and other COVID-19 related variables. Part B will solely focus on dietary intake, access and physical activity utilizing validated instruments from DHQ-III, Food Insecurity (FI) and Yale Physical Activity (PA) surveys, respectively. (copies of the three additional questionnaires to be used in Part B of the pre-intervention survey are provided in **Appendices 1, 2 and 3**). Participants will be paid \$25 for each of the 2-part pre intervention survey and \$ 25 for the post-intervention survey; totaling a possible \$75 payment for completion of all three parts. Research staff will be trained and properly instructed to administer both parts of the survey.; 2) attendance at six bi-weekly online workshops that will provide targeted information on reducing risk for COVID-19; and 3) participation in individualized online visits with AA health advisors to discuss management of chronic conditions, in addition to receiving timely health assessment, coaching, and education.

Intervention Strategies: We collaborate with AA church-based advisors trained in Phase 1 to deliver three-month longitudinal intervention to 265 older AA Parishioners. This intervention is composed of six 2-hour bi-weekly sessions that include lectures, discussions, followed by one-on-one “problem solving” consultations. Instead of an in-person approach, this intervention will be provided via telehealth. **Table 1** shows the curriculum of the proposed bi-weekly seminars/ intervention. This intervention uses a participatory, culturally sensitive, theoretical based (IMB), and multidisciplinary approach to reduce risk and enhance health for AA older adults. The longitudinal intervention includes: 1) Telehealth training; 2) COVID-19 risk reduction and testing; 3) health screening; 4) adherence to disease surveillance and monitoring (i.e., lab tests, routine and required screening procedures, etc.); 5) promoting adherence to medication refill and regimens; 6) promoting adherence to recommended life style behaviors; and 7) flu, pneumonia, & COVID (once available) vaccination.

Individualized Meeting: Trained health advisors will offer individualized monthly meetings to an assigned caseload of AA older participants, in addition to bi-weekly seminars, for individualized health assessments, coaching, and support meetings with the participants. The health advisors will assess the older participant's management of their chronic conditions by utilizing a standardized visit form during these meetings (for example, a diabetic patient must see and ere specialist every year – depending on type of chronic conditions, there is a standard recommendation for physician visits. They will also encourage and assist the participants in making appointments and/or facilitating communication with their primary care provider, getting their medication refilled, and getting tested for COVID-19. If the participant does not have a physician, we will provide a referral located in close proximity to the participant.

Informing Primary Care Providers: The primary care provider of participants will be notified in case of positive depression or high anxiety severity following screening; non-adherence to treatment or inability to access their treatment; and clinical presentation warranting emergent care. If the participant does not have a primary care provider, they will be referred to a one that is located in proximity of their location.

Church-based Health Advisors and our Health Practitioner to Deliver Seminar and Workshop (Phase 2): The bi-weekly seminars will be peer-led and conducted by each church-based health educator within their church. In each seminar, one of our specialists will participates in delivering the main component of intervention. For example, the infectious disease expert will help individuals reduce the risk of acquiring COVID-19; the pharmacist will work with participants to enhance their medication adherence and remove barriers related to their refills; and the lifestyle coach will help improve participants' lifestyles; etc.

Hypotheses: As a result of this intervention, it is expected that: 1) A 30% improvement of chronic physical and mental disease management among AA older adults; 2) A 80% increase in knowledge, attitude, and behaviors of COVID risk among AA older adults; and 3) a 40% increase in COVID-19 testing and 4) a 70% increase in uptake of influenza and pneumococcal vaccinations among participants.

Survey Instruments: Per the instruction of this NOSI, we will adopt survey instruments recommended by the **phenX Toolkit and Public Health Emergency and Disaster Research Response**.¹¹⁴ The survey (developed by the Aging and Geriatric Research Institute on UF) includes Covid-19 related measures and Health status and health care utilization, quality of life, and other related variables. In addition, we will include several validated survey instruments that our research team has recently used among AA older adults to investigate health status, health care utilization, and adherence to drug regimes in South Los Angeles.

Sample Size and Data Analysis (Phase 2): We will use a pretest–posttest design, comparing our outcomes before and after the intervention, with a three-month interval. Since our outcomes are binary (COVID infection

status, use of services, medication non-adherence, etc.), we will use the McNemar test, the test of choice for analyzing binary matched-pairs data.¹¹⁵ For our power calculation, we assume that our primary outcome (poor adherence) will show a 36% relative change (considering a 22% baseline

TIMELINE: Activities & Timeline (Months)	1-3	4-6	7-9	10-12
Church leaders recruited	X			
CDC/States Guideline Implementation	X	X	X	X
Health Advisors recruited & trained	X	X		
AA older adults recruited		X	X	X
Baseline data collection (older AA)		X	X	X
IRBNet # 1663247-2 Approved by: CDU IRB				
Older AA Intervention implemented		X	X	
Post intervention data collected & analyzed			X	X
Final reports & RO1 preparation				X

Approval Period: April 23, 2021 to

status). Assuming an alpha of 0.05, we calculate that a total sample of 240 study participants will be necessary to achieve 80% power.¹¹⁶ With 10% drop-out,^{117,118} we will need to enroll 265 individuals. We will conduct longitudinal follow-up assessments to document changes to compare with baseline measures. At the descriptive level, the distribution and frequency of all items will be examined. The main hypothesis of this study is significant improvement of binary and continuous outcomes from pre- to post- tests. In bivariate analysis, we will apply McNemar's test as well as paired t-test to examine improvement of the outcome over the course of the study. Conducting multivariate analysis, when outcome variables are dichotomous/binary, to explore the role of potential confounders and baseline health status, as determinants of response (change), we will apply logistic regression. However, for corresponding dependent variables that appear to be ordinal a logit link will be used in polytomous or ordinal logistic models. Additionally, for continuous outcomes, we will use GLM to determine statistical differences in the primary outcome measures, while controlling for potential confounders and covariates associated with the selected outcomes. It should also be noted that missing results over time will be accounted for in the analysis using an inverse probability weighting scheme based on a logistic regression model.

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