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## The intersection of depression, anxiety, and cardiovascular disease among black populations amid the COVID-19 pandemic

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I belong to a group of people who have been among the most severely affected by the virus. As a nurse, I am continually distressed, disheartened and disturbed to witness unmet health care needs in our society...

Ernest Grant (American Nurses Association (ANA)  
President)

Black people in the United States (U.S.) are dying at disproportionate rates from the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus, which causes Coronavirus Disease 2019 (COVID-19). Age-adjusted COVID-19 mortality rates for Black people are 2.8 times higher than White people (Prevention and (CDC), 2020). Black people are at higher risk for COVID-19 due to social factors, (i.e. structural racism and its manifestations including mortgage redlining, employment discrimination, healthcare provider bias, etc.), the politicisation of COVID-19, and poor access to testing facilities (Poteat et al., 2020; Williams & Cooper, 2020). Due to these structural and social factors, Black people are more likely to develop risk factors for cardiovascular disease (CVD)

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CONFLICT OF INTEREST

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such as hypertension and diabetes, which are major risk factors for COVID-19 than any other racial/ethnic groups (Sims et al., 2020). For some Black people, these same structural and social factors, along with lifelong exposure to the chronic stressors of racial discrimination, low socioeconomic status, and prolonged lifetime traumas contribute to underlying psychological traumas and stress manifesting as mental health disorders, including depression (major depressive disorder [MDD]) and anxiety disorders (Novacek et al., 2020). However, among Black persons, there has been insufficient attention focused on both anxiety and depressive symptoms in conjunction with pre-existing or incident CVD risk factors resulting in increased morbidity and mortality, particularly with COVID-19. Therefore, given the ongoing COVID-19 pandemic, mental health disorders among Black persons requires immediate attention.

## 1 | DEPRESSIVE SYMPTOMS AND CARDIOVASCULAR DISEASE

Stress negatively impacts health and health outcomes. Chronic exposure to stressful events and psychosocial stress over time has led to accelerated biological deterioration and weathering, which can contribute to an increase risk of CVD development and associated sequelae (Sims et al., 2020). Elevated cortisol levels in response to chronic stress are strongly associated with depressive symptoms (Sims et al., 2020). Persons with severe depressive symptoms are more likely to have CVD (Sims et al., 2020). Black persons in the U.S. are disproportionately affected by CVD (Virani et al., 2020; Yancy, 2020). Furthermore, compared to their White counterparts, Blacks are more likely to experience serious, chronic, and severely debilitating depression (Bailey et al., 2019). Although research supports that Black persons bear a heavier burden of MDDs than Whites, Blacks often go underdiagnosed due to their tendency to somaticise psychological disorders and unconscious biases, including the assumption that Blacks are more resilient (Woods-Giscombé, 2010). As a result, Blacks are often perceived to have lower rates of depression (Bailey et al., 2019). However, between 2008–2017, the prevalence of major depression increased from 4.7%, anxiety almost doubled in the same period from 3.2–8.9%, with the largest increase in anxiety was observed among Blacks (Sreenivasan et al., 2021). Blacks also had the largest increase in post-traumatic stress disorder (PTSD) among all races (0.1–0.5%) (Sreenivasan et al., 2021). Persons with CVD and depressive disorders are reported to have larger waist-to-hip ratios, higher per cent body fat, higher triglycerides. (Virani et al., 2020). In effect, the odds of meeting criteria for comorbid CVD and depression are markedly increased for Black persons (Ettman et al., 2020; Yancy, 2020).

## 2 | ANXIETY SYMPTOMS AND CARDIOVASCULAR DISEASE

Anxiety often occurs due to early life adversities, such as trauma. About 46% of individuals diagnosed with MDD are also diagnosed with one or more anxiety disorders such as panic, PTSD, or generalised anxiety disorder (Kalin, 2020). A meta-analysis revealed that persons without existing cardiac disease, having an anxiety disorder increased the risk of developing CVD by 26%, with a 48% increased risk for cardiac mortality (Roest et al., 2010).

Anxiety disorders are also potentially associated with the development or progression of CVD via behavioural and physiological mechanisms (Celano et al., 2016). These

behavioural mechanisms may include lifestyle habits such as poor diet, and physical inactivity (Celano et al., 2016). Physiological mechanisms associated with anxiety and CVD include autonomic, endothelial, and platelet dysfunction, and inflammation. Anxiety disorders are associated with low heart rate variability, an early subclinical manifestation of cardiac autonomic dysfunction (Celano et al., 2016; Shah et al., 2019). Individuals with anxiety disorders also have endothelial dysfunction with impaired flow-mediated vasodilation (Celano et al., 2016). Specifically, individuals diagnosed with panic and generalised anxiety have decreased endothelial progenitor cells, essential for healthy endothelial function and prevention of coronary artery disease. PTSD and panic disorders also play a major role in inflammation (Celano et al., 2016) and increased CVD risk. These disorders contribute to higher von Willebrand factor antigen and clotting factor VIII that influences inflammation, thrombosis, and atherosclerosis development (Celano et al., 2016; Edmondson & von Kanel, 2017; Grenon et al., 2016). Furthermore, circulating catecholamines, homocysteine levels, nitrous oxide, and platelet aggregation, which all play a role in thrombosis formation and myocardial ischaemia are impacted by anxiety and panic disorders (Celano et al., 2016). Underlying CVD conditions and anxiety disorders have been exacerbated by the COVID-19 pandemic, contributing to worst outcomes for those affected (Novacek et al., 2020; Yancy, 2020).

### 3 | IMPACT OF COVID-19 ON ANXIETY, DEPRESSION, AND CVD

Environmental factors and social determinants of health play a critical role in the trajectory of health outcomes among Blacks; having a greater influence during times of disaster (Arnett et al., 2019; Yancy, 2020). Research indicates natural disasters and pandemics have grave effects on Black communities, resulting in negative physiological and psychological outcomes (Boscarino et al., 2005; Galea et al., 2020; Yancy, 2020). The COVID-19 pandemic has both created acute and exacerbated chronic stress, specifically among minority populations (Sims et al., 2020; Yancy, 2020). Psychological distress leads to a threefold increase in the number of people reporting new-onset depression (Ettman et al., 2020). Limited access to essential resources (i.e. hospitals, testing centres, medications, and personal protective equipment), extended quarantine, inadequate information, or disinformation from government leaders, healthcare bias and/or discrimination, as well as death of a loved one or one's own mortality can lead to depressive symptoms (Mattioli et al., 2020). Depressive symptoms noted among Blacks during the pandemic include, but are not limited to anger, chronic stress, anxiety, and fear for personal and familial health and wellbeing. During times of increased stress, the adrenergic system is activated, leading to increased systemic inflammation, exacerbating underlying CVD, increasing the risk of adverse cardiovascular events (Sims et al., 2020; Yancy, 2020). Cardiovascular events seen among Blacks during the pandemic include increased incidence of myocardial infarction and thrombosis with COVID-19 infection (Baptiste et al., 2020; Dennison Himmelfarb & Baptiste, 2020; Yancy, 2020). Despite the resilience of the Black community spanning centuries of oppression, the chronic and mental health consequences of the COVID-19 pandemic demand a closer look and timely implementation of interventions as Black fatalities continue to rise by the day (Bousquet et al., 2019).

## 4 | INTERVENTIONS TO IMPROVE HEALTH CARE AND ACCESS

All clinicians are encouraged to implement multilevel interventions aimed at optimising prevention and treatment outcomes related to CVD, depression and anxiety in Black communities. This process begins with the acknowledgement of two facts. First, racism, and not race, is a risk factor for health conditions (Boyd et al., 2020). Racism is a structural and ubiquitous system that drives underlying health inequities (Bousquet et al., 2019; Boyd et al., 2020). Second, there is a long history of clinicians and researchers abusing their power at the expense and lives of the Black community, which has created a historical mistrust between Blacks, governmental leaders, and clinicians, all which impact patient buy-in (Novacek et al., 2020). Hence, recognising the need for cultural sensitivity, cultural humility, and collaborative treatment for the health of the Black community is a vital approach (Foronda et al., 2016; Greene-Moton & Minkler, 2020; Tervalon & Murray-García, 1998). Identifying at risk Black persons and promoting specific, measurable, attainable, relevant, and time-bound (SMART) goals through the ‘teach-back’ patient education method will promote health equity as well as improve health literacy of CVD and mental health (Valdiserri & Holtgrave, 2020). To do this, providers and other healthcare professionals will need to gain a better understanding of the Black community and their health needs. This should involve talking with community members and leaders to gain insight into the concerns and needs of the community and structural barriers.

Further evidence suggests that Blacks are less likely than any other ethnic group to be tested for SARS-COV-2 (Rentsch et al., 2020). Recent analysis shows that doctors may be less likely to refer Blacks for testing when they present with signs of infection (Farmer, 2020). This could be attributed to the subjectivity of COVID-19 symptoms or the disparities Blacks experience in healthcare. Dr. Georges C. Benjamin, Executive Director to the American Public Health Association said it best: ‘experience has taught all of us that if you’re poor, if you’re of colour, you’re going to get services second’ (Farmer, 2020). Hospitals in more affluent White areas are receiving more testing equipment and resources, despite not carrying the greatest burden of this illness (Farmer, 2020). The distribution of testing sites shows a long persisting disparity in access to medical care (Farmer, 2020). Therefore, one of the vital interventions for reducing this health disparity must include establishing free-of-charge COVID-19 testing centres that target specific counties at elevated risk for COVID-19. This will address health disparities for Blacks and alleviate stress from those with limited access to care and no health insurance ((CDC), 2020; Bousquet et al., 2019).

Studies have found that telehealth interventions can improve access to underserved areas and populations (Hollander & Carr, 2020; Seto et al., 2019). Recent policy changes have reduced barriers to telehealth access as a way to provide healthcare ((CDC), 2020; Bousquet et al., 2019). Telehealth sessions can be geared towards addressing physical and mental health, both of which have been affected by Covid-19. The availability of care extends to both physical and mental health care, but most importantly it increases the rate of preventative care, by improving care access (Poghosyan & Carthon, 2017; Purnell et al., 2016). This inclusion can be one of the first steps to level the playing field of access and utilisation of available care and decrease the negative physical and mental health outcomes. This allows for a reformed supportive network of community healthcare workers and patient

advocates to seek non-traditional measures to increase access among those who previously are excluded due to physical access to care.

Expansion of telehealth access also serves the Black community, while simultaneously having continued access to health care. There are multiple structural and economic barriers that still influence the delivery of care; however, the use of telehealth can break down some of those barriers (Seto et al., 2019) for healthcare in previously inaccessible rural areas and for those who had difficulties with transportation for in-person appointments. The use of telephone or web-based services has gained more utilisation during the pandemic and should be leveraged to extend this mode of delivery to communities who most desperately need it ((CDC), 2020; Bashshur et al., 2020). Increasing access to services will be critical in mitigating the negative effects COVID-19 has on the Black population.

## 5 | CONCLUSION

The Black community has been disproportionately impacted by COVID-19. Largely, there has been little attention focused on the role anxiety disorders and depressive symptoms exacerbate CVD risk for Black populations, thereby resulting in increased morbidity and mortality during the COVID-19 pandemic. Throughout this public health crisis, marginalised groups have been subject to disinformation and limited access to care. All of which has increased psychological and physiological stress. Systemic racism has been embedded and intricately woven into the fabric of the U.S. through policy, procedures, and most extensively through our healthcare systems. This unjust but normalised practice has affected Black populations. Disparities experienced during COVID-19 are exacerbating CVD, depression and anxiety. Hence, to support said vulnerable groups, both cardiovascular nurses and psychiatric-mental health nurse practitioners must step up and discover ways to offer support. Additionally, nurses must work to dismantle and reimagine our healthcare system providing health equity and equality for all seeking health care services. Specific actions should be taken to bolster Black populations who are impacted at disproportionate and alarming rates amid the COVID-19 pandemic. Imagine, if immediate action is taken to address the underlying psychological stressors and comorbid conditions, perhaps thousands of Black lives can be spared from future loss. As cardiovascular nurses and psychiatric-mental health nurse practitioners working in the midst of the COVID-19 pandemic, we say Black Lives Matter.

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