

African American BMI associated with severe COVID-19 and ICU admission

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Body mass index (BMI) is associated with the development of severe coronavirus disease 2019 (COVID-19) and admission to intensive care units (ICU) in African Americans, according to a single center, retrospective cross-sectional study published online in *Obesity*, the flagship journal of The Obesity Society. This is the first study that focuses specifically on the risk factors within an African-American population.

Age and comorbidities such as hypertension and diabetes have been well identified as [risk factors](#) for the development of severe [disease](#). Obesity is also emerging as a risk factor for severe disease development. However, this study adds further evidence supporting the association that body mass index is connected with disease severity in the African-American population.

"It is of tremendous importance that we identify risk factors and those individuals who may be at increased risk for severe COVID-19 infection, so that we are able dedicate efforts towards supporting those most affected and in need," said Christine Bojanowski, MD, assistant professor in the Department of Medicine, Section of Pulmonary Diseases, Critical Care and Environmental Medicine at Tulane University Health Science Center in New Orleans, La. Bojanowski is the corresponding author of the study.

Bojanowski added "this study is of particular interest in response to emerging reports revealing the disproportionate impact of COVID-19 on

the African American community in our country. Further inclusive research aimed at optimizing clinical care relevant to the African-American population is critical to ensure an equitable response to COVID-19."

Researchers included 158 confirmed COVID-19 positive African-American patients who presented to Tulane Medical Center between March 12 and April 9, 2020 in their study. Participants were identified through reported laboratory testing during the aforementioned time period. Researchers obtained individual patient data through retrospective, electronic medical record review.

To define and determine severe disease, participants had to require [intensive care unit](#) admission for COVID-19 related complications. In the study, this closely aligned with [respiratory failure](#) requiring [mechanical ventilation](#).

Researchers found that 85 percent of the severe cases admitted to the ICU had respiratory failure requiring intubation and mechanical ventilation. ICU mortality for severe cases was 37 percent; however 21.7 percent of the participants were still intubated and requiring mechanical ventilation at the time of the study, which may impact and potentially increase this percentage.

In unadjusted and adjusted analysis, the factors most associated with ICU admission were age, BMI and lung disease.

The average BMI of participants was 33.2. The results also showed that participants with severe disease requiring ICU admission were older (62 years versus 55 years, $p = 0.003$) and had higher BMI (36.5 kg/m^2 versus 31.9 kg/m^2 , $p = 0.002$).

The results confirmed that obesity is a significant determinant of disease

severity in the African-American population. Researchers propose that a lower threshold be considered for BMI than the current Centers for Disease Control and Prevention recommendations that describe individuals with BMI greater than 40 as "high risk" for severe illnesses in COVID-19.

"Instead of stigmatization of black adults with obesity, this pandemic, a hopefully once-in-a-century health crisis, is a clarion call to decrease and eventually eliminate long-standing health disparities and underlying adverse societal structural factors," said Keith C. Ferdinand, MD, FACC, FAHA, FASPC, FNLA, FASPC, professor of medicine, Gerald S. Berenson Endowed chair in Preventive Cardiology, Tulane University School of Medicine, in a commentary about the study.

Provided by The Obesity Society

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