Black Immunity: Racial discrimination or genetic susceptibility?

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Coronavirus disease 2019 (COVID-19) pandemic continues to sweep across the world, and while it does, disturbing associations between race and disease have gone even more viral. On social media, theories of black people's immunity to COVID-19 spread rapidly and widely, with the initially small number of cases in Africa often cited as evidence. Since then, the virus has spread to the continent and has already exacerbate already compromised health systems. This article tries to find the association between black race and immunity.

Keywords:
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Introduction

All human beings share the very same physiology. We are all vulnerable to similar illnesses, and we respond to the same medications. However, responses to treatment differ from person to person. Yet, there are unique medical issues that affect the race of color. Lately there is the growing consciousness that the health of black community is not a racial issue but a human issue. In this paper, we try to dispel a few myths about black immunity, and the science and research on the same.

Racial disparities in blacks – humanitarian aspect

We are frequently prejudiced by the race, which is characterized by superficial trait factors like skin color, hair color, form, etc., Furthermore, race is often substituted for the deeper inherent differences, including vulnerability, immunity to diseases, and response to drugs (Braun *et al.*, 2007; Gravlee, 2009; Fausto-Sterling, 2010).

The issue that blacks and whites are fundamentally different is highly debatable, however, its attestation, at least in medical practice, can be dated back to physician John Lining during the 1748 yellow fever epidemic in Charleston, South Carolina (Gravlee, 2009). This belief was further consolidated during the 1793 yellow fever epidemic in Philadelphia, Pennsylvania by Rush (1794). Rush (1794) further related the black color, big lips, and flat nose as symptoms of leprosy (Society BR-T of the AP, 1799).

Hoffman and Trawalter (2016) pointed out the permanency of opinions that hold blacks and whites to be fundamentally and biologically diverse. Their study highlighted that this understanding roots in privileges made by 'scientists, physicians, and slave owners alike to justify slavery.' In some disturbing and alarming findings stated in the study, one includes about the widespread belief among white medical residents and lay people 'that blacks have thicker skin than do white people or that black people's blood coagulates more quickly than white people's blood.'

Even more unfortunate is that these beliefs, which originated in the slavery era, have got deeply embedded into the ethos of medical education, practice, and research. This could further lead to an in-depth scrutiny of the lives of black people, including their customs, rituals, habits, etc., and thus would further strengthen the assumption that blacks are indeed different from the rest.

The most infamous recent example of racism in medicine was the Tuskegee study that consisted of a longitudinal nontherapeutic trial (1932–1972) with the knowledge of US Public Health Service involving deliberate nontreatment of African–American men

with late-stage syphilis to study the natural course of disease in and around Tuskegee, Alabama (Reverby, 2008).

The disparities are stark when even the Center for Disease Control and Prevention website acknowledges that racial disparities exist and black women are three to four times more susceptible to pregnancy-related deaths. Although statistically, these figures must be correct, these could have been portrayed in some other manner (Clinics CM-G-CCN, 2019).

The Food and Drug Administration in 2005 approved a combination of isosorbide dinitrate and hydralazine hydrochloride (BiDil) for congestive heart failure as the first race-specific drug with the peculiar tag of special efficacy in blacks (Bibbins-Domingo and Fernandez, 2007).

This gave rise to the notion as if the basic pathophysiology of congestive cardiac failure in black people is somehow different than that of whites although the manufacturers of the drug were never clear of the exact mechanism behind the difference in efficacy. Nevertheless, it strengthened the assumption that blacks are genetically different than whites (Reverby, 2008).

Ebola virus disease was also considered to be a disease among the blacks (Sasidharan, 2020; Sasidharan and Dhillon, 2020). This rooted from the fact that among the latest health issues, a total of 28 616 cases of Ebola virus disease and 11 310 deaths were reported, and the maximum cases were in DRC, Guinea, Liberia, and Sierra Leone (Sasidharan and Dhillon, 2020; Sasidharan and Singh, 2020).

The fundamental question is whether race-specific medical conditions exist and if it is, does it divide humankind into biologically distinct entities? It is difficult to answer but at the same time, equally important to decipher as its ramifications have caused racial disparities and inequalities in health care and medical treatment.

Implications

Higher mortality in black – age-adjusted death rates from the following illnesses was two times higher among African–Americans than among whites (Fogo *et al.*, 1997):

(1) Diabetes.
(2) Septicemia.
(3) Kidney disease and hypertensive renal disease.
(4) Hypertension.

Black–white difference is staringly evident when we take into account cardiovascular disease for their contribution of the largest share in mortality (34.0%). The other diseases that contribute into this list are infections (21.1%), trauma (10.7%), diabetes (8.5%), renal disease (4.0%), and cancer (3.4%) (Wong *et al.*, 2002).

Comparable dissimilarities exist in infant mortality and life expectancy. In 2004, the infant mortality rate among African–Americans was 2.4 times the rate of other groups, as compared with 2.3 in 1990 (Keppel *et al.*, 2007).

There is increasing discussion about this increased prevalence of disease in blacks to genetic susceptibility. Experts use the term 'genetic susceptibility' to refer to genetic factors that may make someone more or less vulnerable to different diseases. Some diseases, such as cystic fibrosis and alpha-1 antitrypsin deficiency, are caused entirely by genetic factors. In most other diseases, such as asthma and COPD, it is interactions between a person's genes and environmental factors, such as allergens, irritants, smoking, diet, nutrients, drugs, infections, and injuries, that can lead to the conditions.

Diseases and racial disparity in blacks – risk factors and immunity (genetic susceptibility):

(1) Diabetes is 60% more common in black Americans than in white Americans. Blacks are up to 2.5 times more likely to suffer a limb amputation and up to 5.6 times more likely to suffer kidney disease than other people with diabetes.
(2) African–Americans are three times more likely to die of asthma than white Americans.
(3) Deaths from lung scarring – sarcoidosis – are 16 times more common among blacks than among whites.
(4) Despite lower tobacco exposure, black men are 50% more likely than white men to get lung cancer.
(5) Strokes kill four times more 35–54-year-old black Americans than white Americans. Blacks have nearly twice the first-time stroke risk of whites.
(6) Blacks develop high blood pressure earlier in life – and with much higher blood-pressure levels – than whites. Nearly 42% of black men and more than 45% of black women aged 20 and older have high blood pressure.
(7) Cancer treatment is equally successful for all races. Yet black men have a 40% higher cancer death rate than white men. African–American women have a 20% higher cancer death rate than white women.
(8) Sickle-cell anemia affects African–Americans far more than it does white Americans.

(9) Peripheral arterial disease is more common in African–Americans than any other racial or ethnic group in the United States (DeNoon, 2020).

A 2005 report from the American Lung Association shows that black Americans suffer far more lung disease than white Americans do.

(1) Black Americans have more asthma than any racial or ethnic group in America. Blacks are three times more likely to die of asthma than whites.
(2) Black Americans are three times more likely to suffer sarcoidosis than white Americans. The lung-scarring disease is 16 times more deadly for blacks than for whites.
(3) Black-American children are three times as likely as white-American children to have sleep apnea.
(4) Black-American babies die of sudden infant-death syndrome 2.5 times as often as white-American babies.
(5) Black-American men are 50% more likely to get lung cancer than white-American men.
(6) Black Americans are half as likely to get flu and pneumonia vaccinations as white Americans.

Recommendations

(1) We need to consciously address the contexts, which have portrayed the phylogenetic differences as genotypically different.
(2) Rather than relying on the association between disease and race, which is at best arbitrary, more attention should be directed toward understanding social and economic factors, which often in the first place, lead to disparate disease burdens in different races.
(3) Empowerment programs – empowerment programs aiming at emboldening patients to proactively participate in the health care along with cultural competency programs for healthcare providers can be the key.

Conclusion

While it is tempting to find associations between diseases and races to facilitate generalization of efforts, a critical appraisal of the sociopolitical contexts can give better perspectives.

The theories of black immunity are a product of centuries of inequality, racial violence, medical racism, and experimentation, and the medical system being predominantly governed by whites. The ground reality is, regardless of the diagnosis, Blacks are at least equally if not more, susceptible and vulnerable.

The racializing of diseases might worsen the already-at-risk black communities to enhanced risks by diverting attention and funds from the appropriate authorities. Finally, COVID-19 has proved that viruses do not discriminate (Sasidharan *et al*., 2020).

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