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Clinical Trials and Cardiovascular Health

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What is the problem?

When a variety of racial/ethnic groups are represented in clinical trials, valuable information about certain diseases, treatments, and medications are revealed. This information helps to improve how we treat and prevent illnesses in different communities.

Cardiovascular (heart) disease is one particular illness where we see major differences among different groups of people. Heart disease is the leading cause of death for most racial/ethnic groups in the United States, and is especially common among vulnerable populations, such as ethnic minority groups and low-income populations (Walton et al.). Major disparities in the rates of obesity and high blood pressure - risk factors for heart disease - are also very apparent. The American Heart Association reported that roughly 43% of Black adults are living with high blood pressure, compared to 33% of White adults living with this health issue (Hicken et al). Death rates from high blood pressure also show major differences between Black and White adults. There are about 15 deaths per 100,000 White adults; and over 50 deaths per 100,000 Black men and women (Hicken et al).

Understanding the cause of these differences is critical for developing an effective way to reduce these alarming numbers. Clinical trials, with volunteers from diverse groups, can provide information on how these differences occur, under what circumstances, and how to treat them most effectively.

Who's at risk?

Although heart disease is the leading cause of death for men and women in the United States, certain ethnic groups have a higher risk of getting this disease. Nearly 50% of all Black adults have some form of heart disease and have suffered from a stroke, compared to about 33% of White adults living with heart disease. (CDC, 2014; Harvard, 2015). Also, every year, more women die from heart attacks compared to men (NPR, 2017).

Heart disease is responsible for 23.8% of deaths among Caucasians and African Americans, and 22.2% of deaths among Asian Americans and Pacific Islanders (CDC, 2015). It is also the main cause of death among Hispanics/Latinos, American Indians, and Alaska Natives (CDC, 2016ab).

The reason behind these differences could stem from a variety of factors, such as genetics, ethnic differences, cultural differences, economic factors or geographic location. In order to tease out the main cause, clinical trials are needed. More importantly, clinical trials that involve people from a range of

backgrounds can provide important information on the ways we can reduce differences seen in heart disease risk and deaths among different ethnic groups.

Can it be prevented?

The first step in reducing these major differences in heart disease risk and deaths among ethnic groups is culturally appropriate outreach and education about this health issue. Also, education about ways their communities can help solve this problem, such as volunteering for clinical trials, is equally important.

Developing culturally relevant education materials about health issues, including heart disease, and research (clinical trials) can make people feel more comfortable about participating in this type of research, and also help dispel myths that are common in some communities.

Specifically, many people hold certain myths about heart disease and are simply not aware that they are at risk for the disease. For example, some African Americans believe that a sudden heart attack or stroke can be caused by a scary experience, getting bad news, or having strong feelings like anger (NIH, 2008).

Similarly, some South Asian immigrants in the US believe that heart attacks are not preventable. Many also were unaware of the most common risk factors for heart disease, such as high blood pressure and diabetes. According to a study *American Journal of Preventive Medicine* (2010), the proportion of South Asians that knew any one of these risk factors (38%) was lower than other populations in the US.

Addressing these myths and beliefs about heart disease when outreaching to underserved populations can be an effective strategy for preventing greater burden on ethnic groups that are at higher risk for this disease. Similarly, addressing myths and misconceptions about clinical trials could help encourage more communities of color to participate.

Bottom line

- Particularly for heart disease, there have been cases where certain ethnic groups have responded poorly to medications that have been approved and marked as safe for the public.
- One study found that African Americans who were taking ACE inhibitors (a type of blood pressure medication) were at higher risk for a heart attack or stroke, compared to Caucasians who were using the same medication (Ogedegbe, 2015).
- In this same study, African Americans using this blood pressure medication (ACE inhibitors) were more likely to develop congestive heart failure, compared to Caucasians using ACE inhibitors (Ogedegbe, 2015).
- Without representation of a variety of groups in clinical trials, important information about certain medications and illnesses, such as heart disease, would not be uncovered.

Case example

Michael and Roy have been friends since college, and have always looked out for each other. When they both were dealing with high blood pressure, Michael and Roy decided to be more physically active and made a pact to walk around the local track every morning. After a few follow-up visits, their doctors decided to put them on blood pressure medication. As they usually do, Michael and Roy made sure that they were both taking their medications on time. After about six months, Michael noticed a big change. He was feeling much stronger and becoming more active. But Roy seemed to be feeling worse, and suffered from a heart attack while he was walking along the track one morning. The main perceivable difference between these two men is that Michael is Caucasian and Roy is African American. Unfortunately, the doctors were unaware of a new research study that could help bring some insight to Roy's health status. The study found that African Americans on blood pressure medication were more likely to have a stroke or a heart attack.

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