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# Cancer Health Disparities Among African Americans: A Socioecological Perspective

*By Seth Spitzley*

**Abstract:** Research shows that health outcomes are influenced by race or ethnicity, socioeconomic status, education and literacy levels, and the physical environment (U.S. Department of Health and Human Services, 2014). The health status of minority groups such, as African Americans, are adversely impacted by inequality (Randall, 2009). In Kalamazoo, Michigan, the leading cause of death for all residents in Kalamazoo County was cancer, where black individuals have the highest death rate among any other racial or ethnic group. Considering that African Americans compose less than 11% of the population in Kalamazoo County suggests that African Americans are disproportionately impacted by cancer compared to other race or ethnicities (Wendt et al., 2010). In this paper the Socioecological Model of Health, as described by McLeroy, Bibeau, Steckler, and Glanz (1988), will be used to analyze the complex relationships between health behavior and socioecological factors of cancer rates among African Americans. In addition, cancer health disparities will be compared to the inequalities that exist in Kalamazoo and evidence-based recommendations for public health interventions will be provided to address these disparities.

## Background

Health disparities are characterized by differences in health outcomes between populations. Specifically, health disparities are differences in the incidence, prevalence, mortality, and burden of diseases among explicit population groups (Wendt, Ready, & Miles, 2010). Health outcomes are often influenced by race or ethnicity, socioeconomic status, education and literacy levels, and the physical environment (U.S. Department of Health and Human Services, 2014). Inequality plays a direct role in health status, particularly for minority groups such as African Americans (Randall, 2009). In Kalamazoo, Michigan, cancer is the leading cause of death among black populations compared with white populations (Wendt et al., 2010). An analysis of the cancer disparities among African Americans in Kalamazoo will be thoroughly examined, as well as the causes of this health difference.

Poverty and racial minority status are compounding factors that often contribute to greater health disparities (Braveman, Cubbin, Egerter, Williams, & Pamuk, 2010). According to the *Kalamazoo County Health Indicators Disaggregated by Race, Place and Socioeconomic Status and Key References for Understanding Health Disparities and for Building Healthier Communities*, in 2007, 16% of Kalamazoo residents are poor and 35% live in poverty. Of the poor in Kalamazoo, 52% of them are black, compared to 30% of white residents. In addition, the poverty rate for black populations is 40% compared with 13% of whites (Wendt et al., 2010). This shows that African Americans far outnumber the number of whites who are poor and living in poverty. The health consequences of poverty in Kalamazoo can translate to worse health status, as seen in a survey conducted by the CDC in 2004-2005. As income decreased among residents, the more likely they reported poor overall health status, which was seen more frequently among black populations than white populations (Wendt et al., 2010). These disparities can have devastating consequences on the African American community's health.

According to the Office of Minority Health, in 2012, African American men were more likely to develop cancer than any other racial group, while African American women were the second leading racial or ethnic group to develop cancer (U.S. Department of Health and Human Services, 2016). As stated by the Michigan Department of Community Health, from 2006 to 2008, the leading cause of death for all residents in Kalamazoo County was cancer, where black individuals had the highest death rate among any other racial or ethnic group (as cited in Wendt et al., 2010). In 2010, black populations only made up 10.9% of the population in Kalamazoo County while white populations composed over 81.7% of the population (U.S. Census Bureau, 2010). This suggests that

African Americans were disproportionately developing cancer compared to other races.

According to Wendt et al. (2010), prostate cancer among black men has an incidence rate that is 1.6 times higher than white men and a death rate that is 2.4 times higher than white men in Kalamazoo. Although certain cancers affect white populations more than black populations, black individuals have a higher cancer mortality rate than white individuals. For example, black women are 10% less likely to be diagnosed with breast cancer; however, black women die from breast cancer at a rate 1.3 times higher than white women. The lower cancer survival rates among African Americans suggests there are other factors that contribute to the outcome of this disease (Wendt et al., 2010). Using the Socioecological Model of Health, as described by McLeroy, Bibeau, Steckler, and Glanz (1988), the subsequent sections will analyze the contributing factors to cancer rates among African Americans and then recommend interventions to address this health problem.

### **Intrapersonal Influences**

McLeroy et al.'s (1988) description of the Socioecological Model of Health includes intrapersonal factors that impact an individual's perception of health. These may include a person's knowledge, skills, attitudes, and beliefs of a health behavior or condition (McLeroy et al., 1988). An individual's knowledge about a given health condition may be a predictor of the outcome of that condition. Gwede's et al. (2010) study of colorectal cancer screenings among African Americans displays the intrapersonal relationships between individual knowledge and behaviors, and its association with cancer rates among this population.

Colorectal cancer (CRC) is the second leading cause of cancer deaths among Americans, with black individuals having a 20% higher incidence rate in comparison to white individuals (American Cancer Society, 2008). In addition, black populations have a 40% higher mortality rate and a lower five-year survival rate compared to whites. This can largely be attributed to differences in access and delivery of screenings and treatment, which contributes to the diagnosis of cancer at a later stage (Kelly, Dickinson, Degraffinreid, Tatum, & Paskett, 2007). Screenings, such as sigmoidoscopy and colonoscopy, are commonly used by doctors to detect signs of ulcers or tumors, which are less likely to be used by black populations. According to the CDC (2006), in 2004, the number of sigmoidoscopy and colonoscopy procedures black individuals received had only risen from 53% to 54% in 2006. In contrast, white individuals receiving these screenings increased from 55% to 59% respectively. This evidence indicates that

black populations are receiving these life-saving screenings less frequently in comparison to white populations (as cited in Gwede et al., 2010).

Theories for the decreased use in sigmoidoscopy and colonoscopy screenings among black populations include a variety of sociocultural and demographic factors. According to the study by Gwede et al. (2010), the surveyed black populations had less knowledge and awareness of cancer screenings. This study showed that black individuals had low levels of awareness, risk perception, and worry about CRC, with 91% of participants believing they were less likely to develop colon cancer compared to the average man or woman. Furthermore, most participants stated that their physician failed to mention blood tests, sigmoidoscopy, or colonoscopy procedures. The low screening referrals by physicians, paired with low screening behaviors from the participants, suggests a reason why the CRC mortality rate is higher among black populations (Gwede et al., 2010).

The higher rates of incidence and mortality among black populations for CRC in Gwede et al.'s study (2010) is a reliable indicator of barriers individuals may generally experience when accessing screenings. The lack of awareness and knowledge of available preventative measures for cancer reveals a disproportionate burden of disease among black individuals. In this case, the intrapersonal factors of black populations' knowledge, skills, and beliefs affected their awareness of cancer screenings, contributing to the higher incidence and mortality rates among this population (Francois, Elysee, Shah, & Gany, 2009; Gany, Shah, & Changrani, 2006; Gwede et al., 2010). This evidence can be applied to the African American residents in Kalamazoo because of the socioeconomic and education barriers they may face. The African American dropout rate in Kalamazoo was 17.5% compared to the 7.2% dropout rate among white individuals. Lower education attained by African Americans impacts their ability to engage in preventative behavior actions and recognize the signs and symptoms of a disease (Cullum, Ornee, Warner, Mullins, & Brooks, 2013).

### **Interpersonal Influences**

McLeroy et al.'s (1988) Socioecological Model of Health states that social networks of individuals influence their health-related behaviors. These social influences include family members, friends, neighbors, colleagues, and other social groups that an individual may be a part of. Furthermore, these social relationships provide resources to the individual, such as information or emotional support (McLeroy et al., 1988). The interpersonal relationships of African Americans play a direct role in health behaviors associated with cancer mortality (White-Means, Rice, Dapremont, Davis, & Martin, 2016).

In a study conducted by White-Means et al. (2016), the relationships of African American women who have breast cancer were analyzed to determine how those relationships impacted their prognosis. Although white women are more likely to develop breast cancer, African American women are more likely to die from it than any other racial or ethnic group. In addition, African American women's five-year survival rate is 79% compared to a 90% five-year survival rate among white women (American Cancer Society, 2014). This fact explicitly demonstrates how African American women are disproportionately affected by breast cancer (White-Means et al., 2016).

Whitman, Orsi, and Hurlbert (2012) argue the higher mortality ratios for African American women are highly correlated with low median household income in areas that are highly segregated. This suggests that financial and geographical barriers largely contribute to this population's survival rate with breast cancer (as cited in White-Means et al., 2016). Additional barriers associated with low socioeconomic status and living in segregated areas are the perceptions of the inadequate support and care African American women receive. Living in areas of racial segregation results in disparities in access to mammography screening and contributes to late diagnosis of breast cancer (Kramer & Hogue, 2009; Acevedo-Garcia, Lochner, Osypuk, & Subramanian, 2003). When diagnosed with breast cancer, African American women often reported that they experienced obstacles that included a lack of information from doctors, insurance limitations, and lack of knowledge (White-Means et al., 2016). Among the population in White-Means et al.'s (2016) study, many of the women reported that having positive physician interactions was central to their treatment and cancer outcomes. When a patient's trust and belief in their provider's ability to seriously consider their health concerns, it prevented delays in diagnosis and treatment of cancer (White-Means et al., 2016). In addition, Mollica and Nemeth (2015) note that African American women diagnosed with breast cancer often experience insurance restrictions that may result in missed or delayed treatments, as well as fewer treatment options. Furthermore, they argue that African American women with breast cancer are often unprepared for the financial and social burdens that can be experienced during and after the disease (as cited in White-Means et al., 2016). The relationship between physicians and patients within this study demonstrates the interpersonal factors that contribute to African Americans' survival rate with breast cancer.

Social support is critical in the prognosis and outcome of any disease. In White-Means et al. (2016) study, the African American women diagnosed with breast cancer often lacked social and emotional support from their peers. Participants in the study reported that they were unable to adequately care for their children, which resulted in their children acting out at school or having to

live with another relative. This can often be attributed to a person's socioeconomic status, as many patients had to find a second or third job or were no longer able to afford childcare. Additionally, employers also gave the women a hard time by changing either their employment status, which affected their health care coverage, or the roles they performed, which often required less cognitive skills (Mollica & Nemeth, 2015; Russell, Von Ah, Giesler, Storniolo, & Haase, 2008; Hamilton, Powe, Pollard, Lee, & Felton 2007). The interpersonal relationships between the patients and their physicians, families, and co-workers have a direct impact on their prognosis and overall health outcomes (White-Means et al., 2016). Again, these findings by White-Means et al. (2016) mirror what African Americans are experiencing in Kalamazoo because of the socioeconomic barriers they face when receiving screenings or treatment for cancer.

### **Organizational Influences**

In McLeroy et al.'s (1988) Socioecological Model of Health, the authors argue that environmental characteristics can influence health behaviors. In addition, organizational factors can also promote behavioral change (McLeroy et al., 1988). Churches are often the centerfold to the black community and, according to Foluke (1999) and Sutton (1992), they are often referred to as "black churches", even though they may consist of the same Christian denomination as other churches (as cited in Giger, Appel, Davidhizar, & Davis, 2008). The apparent distinction the African American community has made by labeling its churches signifies the cultural and religious unity that is shared among its members. McNeill et al. (2018) analyze how the culture of black churches can influence the health outcomes of community members.

Analyzing the social, economic, and physical environment in which an individual interacts in, plays a vital role in their health outcomes. In a study by McNeill et al. (2018), the authors develop a partnership with black churches in areas of low socioeconomic status in order to study the cancer disparities that exist within this population. Their results conclude that several socioeconomic factors and other barriers exist preventing African Americans from seeking care. As a consequence of experiencing more barriers accessing care, African Americans have increased mortality and morbidity rates in regard to cancer (McNeill et al., 2018). Giger et al.'s (2008) study supports these findings by linking socioeconomic status with an increased likelihood of being a single parent, sole head of household, and living in areas that lack adequate access to care, affecting one's ability to obtain care. These conclusions translate to African Americans in Kalamazoo, as the trends for unmarried mothers of all races steadily

increased since 2000 and was at 42% in 2011 (Cullum et al., 2013). The increased socioeconomic barriers to health care that African Americans encounter explains why cancer health disparities exist and can be applied to the black community living in poverty in Kalamazoo (Giger et al., 2008).

Historically, African Americans have received subpar medical care and, according to Cherry and Giger (2008), the Hill-Burton Act provided medical facilities, which aimed to serve underprivileged areas to address health disparities that resulted from segregation laws. This unintentionally created African American hospitals that were shorthanded and lacked funding. As a result of poor services, the Hill-Burton Act caused many African Americans to avoid health care facilities (as cited in Giger et al., 2008). In McNeill et al.'s (2013) study, many African Americans noted that cultural insensitivity and institutional racism were compounding factors that contributed to their lack of use of the healthcare system. The lack of trust and cultural sensitivity African Americans experience by health care organizations has resulted in decreased access to services (Giger et al., 2008). This research contributes to increased cancer morbidity and mortality rates for this population and parallels with experiences African Americans face in Kalamazoo. African Americans are less likely to seek medical services if there is an inadequate quality of care, and if socioeconomic or cultural barriers exist, all of which result in worse health outcomes (McNeill et al., 2013).

### **Community Influences**

The Socioecological Model of Health suggests that communities refer to a geographical area in which individuals reside, groups to which individuals belong, and relationships between organizations and groups within an area (McLeroy et al., 1988). As previously discussed, the environment in which one lives, works, and plays in, contributes to one's overall health outcomes. An individual's residential environment can have both positive and negative impacts on their health at a neighborhood-level. For the purpose of this analysis, the effects of neighborhood chronic toxic stress will be examined as it relates to cancer disparities (DeGuzman & Schminkey, 2016).

According to Epel et al. (2004), inner-city African Americans have higher rates of cancer than other races (as cited in DeGuzman & Schminkey, 2016). These differences in incidence rates among African Americans occur in racially concentrated communities with low socioeconomic status. In U.S. urban areas, blacks are more likely to live in racially concentrated areas of poverty, which increases their susceptibility to adverse health consequences (DeGuzman & Schminkey, 2016). For example, Groth and D'Cunha (2010) note that blacks with lung cancer living in segregated areas of poverty have larger tumors than whites



from a similar socioeconomic status (as cited in DeGuzman & Schminkey, 2016). African Americans consist of 75.9% of the residents in the Northside of Kalamazoo, an area where more than half of the population lives in poverty. This densely racially segregated area is often associated with less cancer prevention and treatment options that contribute to worse cancer outcomes (Cullum et al., 2013).

There are several disadvantages of living in low-income neighborhoods and residents have reported higher levels of stress that are associated with violence and crime (DeGuzman & Schminkey, 2016). The biological effects that chronic stress has on the body can exacerbate health issues, such as cancer. For example, van Loon, Markkanen, and Hübscher (2010) argue that exposure to chronic stress can irreversibly damage DNA, causing increases in genetic mutations that can lead to cancer (as cited in DeGuzman & Schminkey, 2016). The causes of chronic stress within low socioeconomic areas vary but are largely attributed to violent crime and noise (DeGuzman & Schminkey, 2016). Crime rates in racially concentrated areas tend to be higher as opposed to less segregated areas, and these concentrated locations can cause increased stress levels among residents, affecting their overall health. Furthermore, this high amount of stress can cause unhealthy behaviors such as smoking, drinking, and improper nutrition (DeGuzman, Merwin, & Bourguignon, 2013). The unhealthy behaviors paired with chronic stress can increase the risks of cancer (DeGuzman & Schminkey, 2016).

Racially concentrated areas of poverty have higher percentages of people on public assistance and who are unemployed (DeGuzman & Schminkey, 2016). As previously explained, these factors can adversely impact cancer rates among African Americans due to socioeconomic barriers. In Kalamazoo, the Northside has one of the highest rates of poverty and the lowest rates of people in the labor force. Furthermore, this racially segregated area is among one of the highest areas with 35% - 50% of the population receiving food stamps or SNAP benefits within the past year (Callum et al., 2016). This data suggests a geographic explanation for the cancer disparities that exist for African Americans in Kalamazoo.

### **Societal Influences**

Policies, procedures, and laws have direct positive and negative impacts on the health of a population (McLeroy et al., 1988). Through their policies, the U.S. government and corporations play a large role in the health outcomes of people. Behaviors of corporations essentially influence the behaviors of populations and can, therefore, explain incidence rates and the distribution of cancer. More specifically, tobacco, alcohol, and food industries are key

participants in the development of many types of cancers (Freudenberg, Galea, & Fahs, 2008).

The corporate practices of advertising, pricing, and product design all influence what the general public consumes; however, marketing experts have tailored products to specific populations, which partly explains differences in cancer rates among socioeconomic and racial groups. African Americans are consistently more likely to develop cancers related to tobacco use, alcohol, and diet than whites (National Cancer Institute, 2005; Slade, 2001; Givel, 2001; Freudenberg et al., 2008). As Dr. Samuel Broder (1991), former Director of the National Cancer Institute, said, “poverty is a carcinogen” (as cited in Freudenberg et al., 2008). This can be applied to the incidence rates of certain types of cancers for African Americans that are attributable to their socioeconomic status. For example, tobacco and alcohol use is much more common among those who live in poverty. In addition, African Americans and low-income populations are more likely to be obese than groups from higher income levels (Brownell & Horgen, 2004). Furthermore, blacks are less likely to seek help for these problems (Freudenberg et al., 2008).

Tobacco, alcohol, and food industries have contributed to disparities in cancer by directly targeting populations of low socioeconomic status and racial minority groups across the U.S. (Brownell & Horgen, 2004; Landrine, Klonoff, Campbell, et al., 2000; Moore, Williams, & Qualls, 1996; Williams & Jackson, 2005). Tobacco companies have focused on young people, corporate sponsorships, and lobbied against clean air laws and tax laws in order to increase sales (Slade, 2001). The alcohol industry also targets young people, sponsor events to create social norms, lobby against excise taxes, and make alcohol more available in low-income and black communities (Foster, Vaughan, Foster, et al., 2006; Alaniz, 1998; Giesbrecht, 2000). Finally, the food industry influences dietary behavior that supports profit, not human health, through product design, advertising, pricing, and lobbying (Brownell & Horgen, 2004; Vigneri, Frasca, Sciacca, et al., 2006). These industry practices are linked with cancer morbidity and mortality among low-income and African American communities (Freudenberg, 2008).

The tobacco, alcohol, and food industries’ advertising, pricing, and opposition to health prevention policies further contributes to cancer disparities. Through the targeting of advertising toward African Americans and other racial minorities of low socioeconomic status, these industries cause more exposure to negative health messages (Brownell & Horgen, 2004; Landrine, Klonoff, Campbell, et al., 2000; Moore, Williams, Qualls, 1996; Williams & Jackson, 2005). In addition, the strategic placement of retail outlets that offer unhealthy products like tobacco, alcohol, and nutrient-deficient foods are determined by

income status and race (Reidpath, Burns, Garrard, et al., 2002; Schneider, Reid, Peterson, et al., 2005). Also, current policies and laws, such as bans on smoking, advertising, or food safety rules, might be enforced differently, and to a lesser degree, in black communities than in white ones (Givel & Glantz, 2001; LaVeist, 2005). Finally, these low-income and racially concentrated communities may have less access to health information through health promotion campaigns (Naff, Cote, Wenzlaff, et al., 2007). The above are examples of how the tobacco, alcohol, and food corporations contribute to increased consumption of cancer-causing products in the U.S. The effects of these corporation practices reach to Kalamazoo, Michigan and impact the cancer disparities that are occurring within this community.

### **Interventions**

The Socioecological Model of Health provides a structure for analyzing how environmental factors influence behaviors, thus allowing for specific interventions to be formed (McLeroy et al., 1988). Interventions from the individual levels to the policy levels will help address cancer health disparities and work to eliminate them. For an intervention to be successful in addressing the cancer differences among African Americans, an evidence-based, patient-centered, and culturally sensitive involvement must be considered. In addition, interventions need to focus on primary prevention and work toward health promotion practices (White-Means et al., 2016).

The individual, interpersonal, and organizational levels of the socioecological model can be grouped together to form successful interventions that focus on an individual and the interplaying environmental factors that surround them. First, it is critical that African Americans are educated and aware of cancer prevention and management. These skills can be improved by increasing community participation in cancer screenings and developing community-based participatory research. Access to free and low-cost cancer screenings are a direct result of cancer inequalities among African American communities (Gany, Herrera, Avallone, & Changrani, 2006; Shokar, Nguyen-Oghalai, & Wu, 2009; Gwede et al., 2010). In addition, providing support to African Americans with cancer will allow for greater survival rates and help address mortality rates among this population. Creating support groups is a great intervention technique that provides social support and education to an individual undergoing cancer treatment (White-Means et al., 2016). Finally, creating partnerships among community members and organizations such as community centers, churches, universities, and government agencies will address gaps in care that African Americans are facing (Mollica & Nemeth, 2015). Giger

et al. (2008) noted that individuals who attended church had better health outcomes, suggesting the church has a positive influence on the community's health. It also encourages cooperation, communication, and commitment once partnerships have been developed, creating a trusting relationship between this population and the healthcare system that has continually failed them (Ammerman & Corbie-Smith, 2004). Another benefit of creating partnerships is to promote co-learning that facilitates knowledge, skills, and abilities to be transferred and used among community members (Goldman & Roberson, 2004). The benefits provide immediate positive results for participants, which reinforces behaviors to continue a program along with the program's ultimate success (Giger et al., 2008).

Community and policy-level interventions focus on a broader aspect of the cancer disparity that affects African Americans and attempts to make changes to systems that contribute to these health inequalities. These interventions call for advocacy among community members, organizations, and representatives to address unjust policies and practices by corporations or government agencies. Specifically, having companies withdraw unhealthy products that contribute to cancers or cancer disparities, require companies to fund health promotion campaigns, raise taxes on unhealthy products, restrict access, and restrict influence (Givel, 2001; Dorman, Wallack, & Woodruff, 2005; Pertschuk, 2001). These measures will ensure that access and exposure to cancer-causing products are decreased in hopes of eliminating the disparity. Other interventions include land-zoning laws that can help deter the number of convenient stores that sell tobacco, alcohol, or unhealthy food products from coming to a racially concentrated low-income area and counter-advertising to bring awareness to the public have proven to be effective (Givel, 2001; Freudenberg, Galea, & Fahs, 2008). Having a health-in-all policy perspective will allow for the consumer health to be prioritized over the profits of private corporations.

For these intervention methods to be successful, advocacy groups and organizations need to have methods that are culturally competent to the population in focus. All interventions to address cancer inequalities among African Americans should have cultural advisors that can be trusted by the community (Gwede et al., 2010; Mollica & Nemeth, 2015). Furthermore, creating partnerships with organizations that are pillars of the community is essential. These organizations include churches, barbershops, ethnic restaurants, grocery stores, and clinics that are in underserved areas (Mollica & Nemeth, 2015). Having a culturally sensitive intervention allows for trustworthy relationships to be built among the African American community and healthcare facilities. When the target population believes and trusts in the intervention, a snowball effect may occur where community members begin to educate and refer their peers to join

the health behavior change. These methods will ensure cancer disparities among African Americans are addressed in a culturally competent, patient-focused manner (Mollica & Nemeth, 2015; White-Means et al., 2016).

### **Conclusion**

Using McLeroy et al.'s (1988) Socioecological Model of Health, cancer health disparities were analyzed for African Americans and related them to inequalities that exist in Kalamazoo, Michigan. Examining all five levels of McLeroy et al.'s (1988) model demonstrates how the different factors have caused increased rates in cancer mortality and morbidity among this population. Furthermore, this research establishes that a disparity does exist and should be addressed by implementing evidence-based interventions at all levels of the socioecological model. It is important that interventions are patient-centered, culturally competent, and create trustworthy relationships between the community and the healthcare system for it to be successful in eliminating the disparity.

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