Reflection

I wrote this literature review for my Determinants of Health Behaviors course, analyzing diet-related behaviors in African American and Hispanic populations. Completing this project taught me how to examine health disparities from a holistic perspective, utilizing Social Cognitive Theory and the Theory of Planned Behavior. I gained the skills necessary to interpret scholarly articles and make recommendations for future interventions. These skills will be necessary as a future doctor, because I will need to think critically about the diverse factors that impact the health of my patients and help them overcome barriers to their wellbeing. I will also need to synthesize data from the latest medical research to give my patients the highest quality of care.

Diet-Related Behaviors in African American and Hispanic Populations

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Introduction

Many people seek to have a healthy diet and desire to live a healthy lifestyle, yet the amount of people who manage to achieve this decreases year after year. There are many different views on what is considered a healthy diet, many of which are not based on scientific research. However, the USDA defines healthy eating as dietary behaviors that align with their clear, measurable guidelines. For example, the USDA recommends that adults consuming a 2000-calorie diet should intake 2 ½ cups of vegetables and 2 cups of fruit daily (USDA, 2020). Although these guidelines may seem simple to follow, many factors impact diet-related behaviors. A person's race, ethnicity, age, gender, socioeconomic status, access to transportation, and acculturation are all factors that influence food choices (Caswell & Yaktine 2013).

In countries such as the U.S., diet-related disparities continue to impact the health outcomes of minority populations negatively. According to the NIH, diet-related disparities are "differences in incidence, prevalence, morbidity, and mortality of diet-related diseases and conditions" (Brown et al., 2022). In the U.S., minority populations, especially African Americans and Hispanics, have significantly poorer nutrition and much higher rates of diet-related diseases than Whites. In 2022, a cross-sectional analysis of African American and Hispanic adults 55 years and older found that 77% of the 505 study participants did not consume at least five servings of fruits and vegetables per day, which is a guideline set by the United States Department of Agriculture (Kibe & Bazargan, 2022). Additionally, African Americans have the lowest mean Healthy Eating Index Score (followed by Whites and Hispanics), with the lowest adequacies in whole grains, greens and beans, and total vegetables (USDA, 2015). Consequently, African Americans and Hispanics have the highest percentages of obesity in the U.S., as well as high rates of heart disease, stroke, type 2 diabetes, and colorectal cancers (CDC, 2022a). Without targeted interventions to improve the nutrition of African Americans and Hispanics, these communities will continue to suffer from diet-related diseases.

Poor nutrition in African Americans and Hispanics not only leads to serious health problems but may also have fatal effects. In 2017, 11 million deaths were attributed to dietary risk factors such as high sodium intake and low intake of whole grains and fruits (Symonds, 2019). Additionally, obesity accounted for 4.7 million deaths and 148 million disability-adjusted life years in the U.S., with African Americans and Hispanics dying at younger ages from obesity

than Whites (de Cosio et al., 2021). When it comes to diabetes, African Americans and Hispanics have significantly higher death rates than Whites and Asians (CDC, 2022b), with African Americans and Hispanics making up 23.9% of diagnosed diabetes in the U.S. (ADA, n.d.). Additionally, African Americans are 30% more likely to die from heart disease than Whites, with 208.6 heart disease deaths per 100,000 for African Americans compared to 166.4 heart disease deaths per 100,000 for Whites (U.S. Department of Health and Human Services, 2023b). Likewise, African American men and women are 1.2 times more likely to have colon and rectum cancer with 52.4 colon & rectum cancer deaths per 100,000 for African American men and 38.6 deaths per 100,000 for African American women compared to 43.5 and 33.3 for White men and women (U.S. Department of Health and Human Services, 2023a). Hispanics are 1.3 times more likely to die from diabetes than Whites, with 24.6 diabetes deaths per 100,000 for Hispanics compared to 18.6 diabetes deaths per 100,000 for Whites (Department of Health and Human Services, 2021a). Similarly, Hispanic men and women are nearly twice as likely to have liver cancer and inflammatory bowel disease than Whites, with 20.4 cases per 100,000 for Hispanic men and 8.1 cases per 100,000 women compared to 11.3 and 4.0 for White men and women (Department of Health and Human Services, 2021c). The Office of Minority Health states that improvements in nutrition and weight management, increases in exercise, and reductions in smoking and alcohol intake can improve disease outcomes for these communities (U.S. Department of Health and Human Services, 2023a). These disparities illustrate a serious need for programs that aid in diet-related disease prevention.

To improve diet-related behaviors, the Healthy People 2030 Initiative has several objectives related to nutrition. Some relevant objectives in the Nutrition and Healthy Eating section (which focuses on raising the quality of nutrition and increasing healthy eating habits) include: NWS-08 “Increase consumption of dark green vegetables, red and orange vegetables, and beans and peas by people aged 2 years and older”, NWS-09 “Increase whole grain consumption by people aged 2 years and older”, NWS-06 “Increase fruit consumption by people aged 2 years and older”. Objectives in the Health Conditions section (which focus on reducing the prevalence of diet-related diseases such as obesity, heart disease, stroke, diabetes, and cancer) include: NWS-05 “Increase the proportion of health care visits by adults with obesity that include counseling on weight loss, nutrition, or physical activity”, NWS-03 “Reduce the proportion of adults with obesity”, HDS-02 “Reduce coronary heart disease deaths”, HDS-03

"Reduce stroke deaths", and C-06 "Reduce the colorectal cancer death rate". Creating interventions around these objectives can help improve the health and nutrition of people in African American and Hispanic communities.

Theory

Theories are often used to understand health behaviors and create effective interventions. When it comes to healthy eating habits, theories are used to understand the factors that influence dietary behaviors and create ways to help people make healthier food choices. Understanding key theories used in medical research is crucial to making interventions that are effective and long-lasting. The Social Cognitive Theory and the Theory of Planned Behavior are helpful when analyzing dietary behaviors in African American and Hispanic populations.

Social Cognitive Theory

The Social Cognitive Theory, an interpersonal-level theory created by Albert Bandura, describes how personal factors, environmental factors, and human behavior affect each other (Perelman School of Medicine, n.d.). The SCT has grown over time to include constructs such as observational learning, self-efficacy, and self-regulation. Observational learning involves the acquisition of behavior by observing the actions and consequences of others' behavior. Self-efficacy is a person's confidence in their ability to overcome a barrier. Self-regulation, better known as self-control, is the process by which a person manages goal-directed behaviors to achieve their goals. In this case, SCT can be used to investigate how African American and Hispanic populations can use self-regulation to eat healthily. It will also analyze how personal factors, environmental factors, and human behaviors related to diet influence each other.

In a 2018 study titled '*Using Social Cognitive Theory to Predict Obesity Behaviors in Hispanic American Children*', the constructs of the SCT were used to predict behaviors related to obesity including television viewing, water consumption, fruit and vegetable intake, physical activity, and portion size (Anyikwa, 2018). Hispanic cultural values, neighborhood food environment, and family activities were identified as factors that influence food choices. The study participants were Hispanic American youth aged 11-15 located in Georgia. The researcher implemented lessons about healthy eating, increasing physical activity, and reducing tv viewing to the experimental group, while the control group did not receive such lessons. The results of this study indicate that increasing expectations and self-control for consuming fruits and

vegetables led to increased consumption of fruits and vegetables. Increasing expectations for small portion sizes and self-control for meal portion size decreased the likelihood that a child would consume a large portion size. Suggestions for future interventions include involving a multi-theory approach and increasing health education in Hispanic American youth.

Theory of Planned Behavior

According to Icek Ajzen, The Theory of Planned Behavior (TPB), a Value Expectancy theory, focuses on the impact of a person's intentions on their behavior. Value Expectancy theories state that a person's judgment of potential risks and benefits impact their behavior. The TPB was originally named the Theory of Reasoned Action (TRA) when it was created by Martin Fishbein in 1967. TRA proposes that the best way to predict one's behavior was to ask them if they intended to do that behavior. TRA states that motivational factors, which include an individual's attitude and subjective norms, direct their intentions. Attitude is an individual's opinion about a behavior. Subjective norms are an individual's beliefs about whether or not important people in their life would approve of a behavior. The TRA was later expanded upon (and renamed to the TPB) by Fishbein and Icek Ajzen to include perceived behavioral control. Perceived behavioral control is how confident a person feels that they can perform a behavior (Ajzen & Albarracín, 2014).

A recent study titled '*Do ethnicity and gender matter when using the theory of planned behavior to understand fruit and vegetable consumption?*', sought to determine if the TPB is constant between different ethnicities and genders as it relates to fruit and vegetable consumption. The researchers used 5 servings of fruits and vegetables per day as their standard for assessing fruit and vegetable consumption. The study, which consisted of 237 African Americans and 176 Whites, investigated its query with two questionnaires given to students from three universities across the United States over a period of 2 weeks. The first questionnaire assessed various factors of the TPB, including attitude, subjective norm, perceived behavioral control, and intention. The researchers divided attitude into two categories: instrumental (whether an individual perceives eating vegetables as beneficial or bad) and affective (whether an individual perceived eating vegetables as enjoyable or boring). The subjective norm questions asked participants to rank how well they agreed with the statements about whether or not important people in their lives think they should eat vegetables. The perceived behavioral control asked participants to rank how well they agreed with statements related to their confidence in

eating five servings of fruits and vegetables every day. The intention questions asked participants to rank how well they agreed with statements related to their intentions for eating five servings of fruits and vegetables every day. The second questionnaire asked students to identify how many servings of fruits and vegetables they consumed over the past 2 weeks. The study found that Whites had higher levels of instrumental attitudes and higher levels of intentions towards consuming fruits and vegetables than African Americans. Females had higher instrumental attitudes, subjective norms, and intentions towards consuming fruits and vegetables than males. This data provides us with a better understanding of the cognitions and beliefs about fruits and vegetable consumption among African Americans (Blanchard et. al., 2009). This data shows that African Americans have higher levels of affective attitudes, which other research shows are strong indicators of healthy eating behaviors (Conner & Norman, 2020). Interventions that target the attitudes and intentions towards healthy eating in African Americans are needed to improve healthy eating behaviors.

In a study titled *'Can the Theory of Planned Behavior Predict Dietary Intention and Future Dieting in an Ethnically Diverse Sample of Overweight and Obese Veterans Attending Medical Clinics?*', researchers sought to identify the relationship between elements of the TPB and dieting behaviors. The study participants included 139 patients at a veteran's hospital. 50% of the participants were Hispanic, 41.7% were White, 4.8% were African American, 2.4% were biracial, and 1.2% were Native American. The researchers calculated each participant's Body Mass Index (BMI) and gave them two questionnaires. The TPB questionnaire asked questions about attitudes, subjective norms, perceived behavioral control, intention, and perceived needs as it relates to dieting. The perceived need category focused on a participant's perspective on their need to diet and need to eat more healthfully. The Food Frequency Questionnaire (FFQ) was administered twice (in the beginning and three months later at the end of the study) and asked questions related to the frequency in which they ate certain categories of foods such as dairy, bread, meat, vegetables, and fruits. High scores in the FFQ indicated healthy food choices and low scores in the FFQ represented unhealthy food choices. Over the course of the study, 87% of participants attempted to make healthier dietary choices. Although BMI and FFQ fruit/veg scores did not improve significantly, overall FFQ scores improved significantly during the study. Ultimately, this study determined that the TPB was responsible for 51.9% of the variation in intention (Lash, Smith, & Rinehart, 2016). Similar results were replicated in a study titled 'Using

the theory of planned behavior to understand caregivers' intention to serve sugar-sweetened beverages to non-Hispanic black preschoolers', in which the TPB accounted for 45.1% of variation in intention (Tipton, 2014). Researchers determined that the TPB was effective in predicting intention, but not behavior itself. The study advises future research to evaluate participants more frequently between initial evaluation and the end of the study to determine and address potential barriers to behavior change (Lash, Smith, & Rinehart, 2016). This study indicates a need for counseling and guidance when attempting to change a person's dietary behaviors.

Intrapersonal Factors

Intrapersonal factors are related to a person's characteristics, including their SES, race, gender, prior experiences, personality, beliefs, attitudes, and knowledge. In African American and Hispanic populations, individual cognitions play an important role in food choices. Dietary behaviors are heavily impacted by a person's beliefs about healthy eating and their knowledge of how the food they eat affects them (James 2004; Sherman & Griffith, 2018).

For those with low income, their socioeconomic status affects their food choices. A study focused on the relationship between Supplemental Nutrition Assistance Program (SNAP) participation and eating a healthy diet. This study states that those with low-income often have little time to prepare meals, which leads to poorer dietary choices. They found that factors such as taste preferences, access to transportation, and knowledge, skills, and abilities affected dietary choices of SNAP participants (Caswell & Yaktine 2013).

For African Americans, dietary practices are often shaped by their attitudes about healthy eating. A study identified that African American study participants viewed healthy eating as "giving up part of their cultural heritage and trying to conform to the dominant culture" (James, 2004). Additionally, this study found that African American men "typically hold weaker beliefs on the importance of eating fruits and vegetables for health reasons, and they have traditionally been unmotivated to change eating practices until they are confronted with a health problem or condition" (James 2004; Sherman & Griffith, 2018). These findings indicate that effective interventions must involve culturally sensitive tactics that avoid the risk of completely cutting out foods that African Americans value.

In addition to one's attitude, one's personality can also affect their overall health and dietary behaviors. Personality traits such as neuroticism, a tendency to experience stress and

negative emotions, impulsivity, and sensitivity to reward were all risk factors for obesity (Gerlach, Herpertz, & Loeber, 2014). Conversely, traits like conscientiousness and self-control were shown to protect against obesity (Gerlach, Herpertz, & Loeber, 2014). Not only can personality traits affect one's risk for obesity, but they can also affect one's preferred foods. A 2021 study found that neuroticism was associated with a preference for sweets and lower fruit and vegetable intake while openness and agreeableness were associated with a lower preference for salty foods (Esposito, Ceresa, & Buoli, 2021). A 2019 study with over 1500 African American and White adults reported that "race and gender may exacerbate or attenuate…the impact of personality traits on health" (McClendon et. al., 2019). This study used the selective vulnerability hypothesis, which states that social marginalization can worsen the effect of "at-risk" personality traits, like neuroticism, and lessen the effects of beneficial personality traits, like conscientiousness, on health. After evaluating the participants for 2.5 years, the study found that neuroticism was associated with poorer physical and mental health, while traits such as conscientiousness and extraversion were positively associated with mental and physical health. Risk factors for developing neuroticism include a traumatic childhood, high-stress index, genetic predisposition, and environmental influences (Witmer, 2022). African Americans, Hispanics, and Asians report higher levels of stress yet represent the lowest percentages of mental health service use (Anderson & Bulatao 2004; SAMHSA, 2015). The combination of these factors may increase the chance of developing neurotic tendencies for African Americans and Hispanics. Future programs may need to incorporate therapeutic interventions to account for the effects of personality on dietary behavior.

Interpersonal Factors

Interpersonal factors involve one's relationships with others and exposure to the attitudes and behaviors of others. Who a person socializes with can influence their dietary behaviors. Studying the influence of relationships in African American and Hispanic communities can help researchers identify new strategies to promote healthy eating.

In African American and Hispanic communities, food is a significant part of socialization. However, culturally traditional foods may not always be the healthiest. A 2017 study investigated the relationship between culture and health behaviors. When conversing about cultural factors that contribute to deleterious health effects, one participant said: *"Soul food' is not the healthiest food; and the food people typically choose to eat, as a culture, isn't the most*

healthy. But there's strong family bonds that happen around this food. So it's kind of a disconnect. Family bonds are strong, but the nutrition typically isn't that great" (Swierad, Vartanian & King, 2017). This combination of lack of familial support and association between culture and unhealthy foods is a major barrier to changing dietary behaviors. Future interventions should target the interpersonal level to maximize the chances of long-term behavior change.

Community, Organizational, Environmental, Policy Factors

The Social Ecological Model (SEM) focuses on the interactions between factors that influence behavior. The SEM was inspired by Urie Bronfenbrenner's five ecological systems created in 1977 (Evans, 2023). The systems are said to be 'nested' because they start within the microsystem, which includes the individual and their immediate environment, and expand to the macro level, which includes societal norms and the economic system (Evans, 2023). According to the book, *Behavior theory in health promotion practice and Research*, the SEM states that there is not one single factor that explains why some individuals are at greater risk for certain behaviors or health issues, but rather many factors. The levels of the SEM include intrapersonal, interpersonal, organizational, community, public policy, physical environment, and culture. The organizational level focuses on social norms created in institutions such as schools, sports, and religious affiliations. The community level describes the influence of the social networks and standards at the local level. The public policy level contains the local, state, and federal laws and policies that impact behaviors. The physical environment level analyzes the effect of factors such as air quality, crime rates, and access to sources of healthy food (Simons-Morton, McLeroy, & Wendel, (2012). These levels of the SEM have been used in research to study the factors that influence dietary behaviors in African Americans and Hispanics.

At the organizational level, the institutions that one spends time in can impact their dietary behaviors. A recent study investigated the dining options available to college students attending two minority serving institutions in New Jersey. Out of the twenty-seven dining establishments analyzed, only 7.4% were classified as healthy, while 81.4% were classified as unhealthy (Begum & Tettey, 2020). Another study analyzing disparities in the nutritional quality of school lunches found that schools that had high proportions of poverty, majority African American, and majority Hispanic populations had less access to nutritious and healthful foods. Majority white schools had higher amounts of vegetables and lower amounts of sodium than in majority African American and Hispanic schools (Bardin, Washburn, & Gearan, 2020). The

impact of religious institutions on minorities has also been researched. Research shows that highly religious African American women have more self-control for consuming fruits and vegetables, more knowledge about appropriate daily servings, and a higher perceived importance for eating fruits and vegetables (Holt et. al., 2005). Additionally, perceived church support was associated with healthier eating habits in a population of African American church members in South Carolina (Baruth, Wilcox, & Condrasky, 2011). In a focus group of Hispanic church attending youths, data showed that the youths made a connection between health and believing that one's body is a temple for God (Wilmoth, Martinez, & He, 2018). Overall, this data shows that the institutions one attends frequently, such as schools and churches can impact perceptions and behaviors associated with healthy eating.

At the community level, the geography, resources, and programs around an individual can affect their dietary habits. A recent study focusing on healthy food access in minority communities found that Hispanic and African American communities had less access to grocery stores, supermarkets, and pharmacies than Whites (Ohri-Vachaspati et. al., 2019). Coupled with the data that shows the high prices and low affordability of healthy foods, it is easier to understand why so many African Americans and Hispanics struggle to meet USDA guidelines (Kern et. al., 2017).

At the public policy level, laws and regulations can influence dietary behavior. According to a study titled '*Food labels: A critical assessment*', most consumers are confused by the information provided on food labels. The laws concerning food labeling are often confusing or vague, allowing marketers to find loopholes and mislead consumers into believing that unhealthy foods are healthy. Terms such as "fat-free", "low-fat", and "sugar-free" might sound great, but their legal definitions can allow for variability in what these terms mean. Also, regulations and policies around how companies can define serving sizes impact how marketers promote their foods. Some companies list serving sizes that are significantly smaller than what the average consumer eats, leading to the misconception that the food is low-calorie (Temple & Fraser, 2014). Although many of these claims may mislead consumers into believing they are eating healthy foods, policies such as the commonsense consumption act prohibit individuals from filing lawsuits against a marketer for reasons of diet related health conditions that may arise from eating a company's products (Commonsense consumption act, 2023). This is disheartening, especially when data shows that fast food companies disproportionately market their products to

minority youth (Yao, 2021). Interventions are needed to educate African American and Hispanic consumers about the nutritional value of the food that they purchase to improve dietary behaviors.

At the physical environment level, the resources in one's built environment can impact one's ability to eat a healthy diet (Morland, Wing, & Roux, 2002). For every five African American households in the U.S., one is located in a food desert (McKinsey & Company, 2021). A food desert is a place with few options for affordable healthy food such as grocery stores, farmer's markets, and restaurants. Additionally, food swamps, areas with a high number of fast food restaurants and junk food, are a strong predictor of obesity (Cooksey-Stowers, Schwartz, & Brownell, 2017). Living in an environment where healthy food is scarce and yet unhealthy options are abundant can make eating healthy extremely difficult. According to the USDA, food deserts have higher rates of poverty, racial minorities, unemployed persons, and persons with no vehicle (Dutko, Ploeg, & Farrigan, 2012). These factors can make accessing the few options for healthy food a challenge. Interventions are needed to improve access to healthy food to individuals living in food deserts and food swamps.

Suggestions for Intervention

Interventions to improve dietary behaviors in African Americans and Hispanics need to be realistic, cost-effective, and sustainable in order to produce long-term behavior change in these communities. Creating interventions that involve the use of multiple theories as well as introducing elements such as counseling, educational resources, and improvement of the built environment could be promising.

Because studies have shown that a barrier to dietary change in African Americans is fear of losing part of their culture, teaching African Americans to recreate cultural dishes in a healthier way could be an effective intervention (James, 2004). Rather than trying to implement radical change all at once, interventions should be focused on the most pressing issues in each community. According to the CDC, diets high in fat (saturated fat, trans fat, and cholesterol) are associated with heart disease and diets high in salt can increase blood pressure, which can lead to heart disease (CDC, 2023). Because heart disease is a significant issue in the African American community, recipes with reduced fat and salt content are needed. For example, using salt-free seasonings can preserve the flavors of traditional recipes while reducing the sodium content.

On the other hand, Hispanics are 10% less likely to develop heart disease than Whites, so interventions should be tailored to address struggles that are applicable to their community (Department of Health and Human Services, 2021b). According to a study by Sanjay Basu, MD, PhD, a professor of medicine at Stanford, sugar consumption is directly associated with diabetes, along with factors such as obesity and caloric intake. His study also found that reductions in dietary sugar intake were correlated with reduced rate of diabetes (Stanford Medicine, 2013). Also, high levels of dietary fat can contribute to reduced function of insulin, a hormone that aids the transport of glucose out of the bloodstream and into the cells (Gadgil et. al., 2013). Because diabetes is a prevalent issue in the Hispanic community, recipes with reduced fat and sugar intake would be most useful. Sugar substitutes have many pros and cons, but can help those struggling with obesity in the short term. According to a study titled '*Using Social Cognitive Theory to Predict Obesity Behaviors in Hispanic American Children*', improvements in self control for eating healthy increased healthy eating behaviors. The author of this study states that counseling and the use of multi-theory approaches are needed for future dietary interventions in the Hispanic-American community (Anyikwa, 2018). A new intervention could use elements of the Social Cognitive Theory to improve self control regarding sugar intake as well as elements of the Theory of Planned Behavior to identify the knowledge, beliefs, and attitudes that Hispanics have about sugar.

Food deserts were also seen as barriers to accessing healthy food. There have been few interventions that sought to improve the food choices for populations living in food deserts. The inventions that have worked involved opening a new grocery store (Wrigley, Warm, & Margetts, 2003) or providing new, healthier options at existing stores (Smith, 2022). Data shows that the opening of a grocery store or addition of healthy options to an existing one in a food desert can not only improve access to healthy food options, but lead to improvements in overall dietary consumption of fruits and vegetables. Both of these strategies seem promising for improving the quality of nutrition in populations living in food deserts. However, to increase the chances for success in future interventions, providing healthier options in existing stores is more cost-effective.

In conclusion, many factors influence the dietary behaviors of African Americans and Hispanics. More research is needed to create effective interventions that are culturally-sensitive and sustainable. More interventions that address multiple levels of the SEM are needed as well.

In addition to modifying cultural recipes, providing health education, and modifying the built environment, addressing other areas such as partnering with institutions (such as schools and churches) and providing counseling resources to individuals that are going through dietary improvement programs could be beneficial.

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