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Contributing Factors to Obesity in African American Children within the United States

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Abstract

From 2007 to 2011 obesity has shown an increased prevalence among children within the United States. According to a report by Bell et al., childhood obesity affects approximately 12.5 million children aged 3 years to 12 years of age. Since the 1980s childhood obesity within the United States has tripled with the rate starting at 5% of African- American children (AA) and now it is 15%. According to the latest statistics from the United States Department of Health and Human Services, Office of Minority Health Report, the percentage of obese African American children between the ages of 6 to 17 years old between 2007-2008 was 22.4%. The health impact on African Americans regarding childhood obesity has sparked increasing concerns about the future health and well-being of this population.

Causes of African-American childhood obesity are complex and vary considerably in nature. Childhood obesity has attracted the attention of many researchers who have investigated the relationship between childhood obesity and a variety of related factors Davis et al. A review of literature on the causes and driving force behind African American childhood obesity will provide a strong foundation in which researchers may utilize in the development of population specific interventions.

Keywords: Obesity; African-Americans; Children

Introduction

Childhood obesity has become a great concern in the society. The instances of obesity amid preschool as well as school-aged kids have almost tripled in the last three decades. Currently, around 14 percent of African American children aged between 2 and 5 years and 19 percent of African-American children aged between 6 and 11 years are obese. The augmented cases of obesity have turned out to be a public health alarm since obesity is linked to chronic illness and unfavorable health results. Being overweight and suffering from obesity are linked to increased risk of heart disease, type 2 diabetes, high blood pressure, certain cancers, and other chronic conditions. Research has shown that obese children are more likely to be overweight or obese as adults [1-3].

Purpose

The purpose of this manuscript is to review the current literature as it relates to the common causes of childhood obesity within the African American population of boys and girls ages two to twelve. The manuscript will also highlight management strategies and their effectiveness as well as identifying relevant research gaps. The target population for this literature review is African American children with an age range of two to twelve years. The female African American children will be compared with the males as well as the race of the Non-Hispanic Whites. Discussion regarding how family attributes and income vary amongst African-Americans and whites, the impact on consumer behavior Podolsky et al. [4].

Methodology/Literature Search

The methodology for this review of literature involved utilizing several databases containing scholarly, peer-reviewed journals. The search term used for this research review initially was, "Prevalence of obesity in American Children". Since this review uses secondary sources in entirety, all the articles were obtained through searching in online libraries and on Google. The online libraries that some of the articles were obtained include EBSCOhost, Emerald, BMC Public Health and Proquest. Additional data bases included Science Direct, Sage Journals Online and CINHAL. Using the initial search term, many articles (over one-hundred thousand studies) were found. A goal of thirty significant articles was targeted, thus, the search term was changed to "Prevalence of obesity in African American children". Other key terms used were obesity, African American children and childhood obesity. Thirty articles were chosen for this review form 300 articles that addressed the topic comprehensively. A final choice of thirteen articles are included in this literature review. This review covers a comprehensive exam of data reviewed between the years of 2007 to 2011.

The review of the literature studies has shown that African American childhood obesity is impacted by physical inactivity, parental influence, family functioning, socioeconomic status, media influence, and availability of nutritional food. This manuscript will assist to fully evaluate and understand the common causes of childhood obesity as it relates to the African American population and clarification. This review will highlight management strategies and their effectiveness as well as identify relevant research gaps.

Results

Physical inactivity

Sedentary behavior among children has resulted in an increased prevalence of obesity. Research indicates that children are spending more leisure time engaging in sedentary activities such as playing video games and watching television Brandes [5]. Decreased childhood activity has shown that there is a need for more research regarding the association between leisure time and childhood obesity.

Brandes [5] conducted a descriptive-correlational study that was aimed at determining if there is an association between leisure time activities of school-aged African American and Hispanic children and BMI scores. Brandes [5] found that among the given population the most common reported activities were television watching, homework, and video games. According to the United States Risk Behavior Surveillance report of 2009, physical inactivity belongs to the six categories of priority health risk behaviors causing leading morbidity and mortality among youth within the United States Eaton et al. [6]. Eaton et al. found that the overall prevalence of children not participating in sufficient daily vigorous activity was higher in African American and Hispanic children verses Caucasian. Childhood inactivity can transfer into adult inactivity also. When considering the future of the child who is inactive and obese, chronic disease such as diabetes and hypertension is a great risk. McNeil et al. [7] utilized a "being active "intervention for African Americans with diabetes.

Parental influence

Current research has suggested that there are several parental factors associated with childhood obesity within the African American population. Evidence has also shown that current research has not provided insightful understanding of African American obesity due to limited number of studies. Previous studies have focused on the obesity epidemic within the Caucasian population, overlooking the underrepresented. With examination of the issue at hand, "most studies lacked external validity for African American children who were heavily represented among the obese childhood population" Davis et al. [3]. Parental depression, family dietary attributes, family functioning/parenting, cultural considerations, and socioeconomic status are all common factors that have been investigated as it relates to childhood obesity.

Davis et al. [3] conducted a study aimed at exploring the relationship between family functioning, parental depression, and childhood obesity. The study was conducted among African Americans whom resided in an urban community with a sample that consisted of 44 African American parent-child dyads however this sample is small. Significant derived results indicated that the average weight of the parents studied was 204.23 pounds with an average BMI of 33.9 whereas the average weight for the children was 152.41 pounds with an average BMI of 28.86 and average age of 10. Davis et al. [3] found that family variables are shown to be important factors in the development of childhood obesity. Davis et al. [3] also found that parental factors had a positive correlation to child body mass index; however, on the other hand family functioning did not surface as a strong predictor but rather "contributed to the shared variability for parental depression and body mass index" (p. 53). Based on this study, one implication for advanced nursing practice is to further investigate family functioning and develop appropriate interventions to increase coping and decision making among the parents.

The nutritional patterns of the family unit greatly dictate the prediction of childhood obesity within a family. Previous evidence has indicated that dietary attributes are established in early childhood Anderson [8]. Anderson examined the "relationship between African American parents' habits and beliefs about nutrition and the likelihood of obesity in their children" (p. 4). The researcher found that the participants' beliefs about nutrition directly correlated with food they provided for their children and most believed nutrition rather than genetics played a role in their children's weight. Furthermore, parents from lower income families consumed more home cooked meals per week and those with higher incomes did not consume more fast food per week.

On the other hand, another study conducted by Horodynski et al. [9] examined mealtime television viewing and dietary quality among low-income African American and Caucasian mother toddler dyads. As previously mentioned, childhood obesity has a direct correlation with the establishment of adequate nutritional habits earlier in life Anderson [8]. Research has shown that children with healthier eating patterns are less likely to become overweight while also reducing their risk factors "for co-morbidities, such as diabetes and hypertension" Horodynski et al. [9]. This study found an indirect association between television viewing and unhealthy food consumption among toddlers. Horodynski et al. [9] also found a direct association between maternal television viewing and unhealthy food consumption. Based on this research, implications for future work indicate the need for interventions aimed at positively influencing the nutritional habits of low-income mothers.

Socioeconomic status

In Chesterfield County Virginia, researchers investigated if there was a correlation between high risk youths and low socioeconomic status in school aged children. This study was conducted during the academic school years of 2002-2003 and 2003-2004. High risk youths include those with a body mass index between the 85^{th} and 95^{th} percentile. The sample population in this study included students in kindergarten, third, and tenth grades. Overall, 36 elementary schools, 12 middle schools and 10 high schools, were involved in the evaluation process. A cluster sampling technique was utilized, examining the height and weight of the students Vieweg et al. [10].

Public health nurses completed anthropometric measurements using electronic scales for student weight and stadiometers for height. The Nustat module of Epi Info was utilized in order to enter the data. The database utilizes information based on the 2000 CDC growth charts. Once calculated students were placed into one of the following categories: underweight ($<5^{th}$ percentile), normal weight ($>5^{th}$ and $<85^{th}$ BMI percentile), risk for overweight ($>85^{th}$ and $<95^{th}$ percentile, overweight$>95^{th}$ percentile. The data was examined by further categorization based on age, sex, race, grade, and race stratified by sex. Elementary and middle school children who received free or low cost lunches were identified as low socioeconomic status. High school students were assessed as low socioeconomic status, based on their family per capita income data from the 2000 Census Vieweg et al. [10].

Between the academic years of 2002-2004 a total of 29, 824 Chesterfield County public schools' students were assessed. The demographics of the students include ages ranged from 4.3 years to 19.7 years, with a median age of 12.1. The students can also be examined by race and gender: 51.07% female, 48.93% male, 68.02% white, 24.55% black, 4.25% Hispanic, 2.69% Asian or Pacific Islander, and 0.49% American Indian Vieweg et al. [10].

Researchers found that 28.4% and 38.3% of Chesterfield County students were in the high risk group. The high risk group included 38.3 in the seventh grade, 35.4% in the third grade, 32.5% in the tenth grade and 28.4% in kindergarten. Hispanics were noted to have the highest overweight status, followed by blacks. Whites overall, had the lowest overweight status. Researchers found correlation between the high risk group and low socioeconomic status Vieweg et al. [10].

Media influence

The Institute of Medicine committee examined research studies that found the influence of marketing on health and diet of American children. Results from this research showed that food and marketing influences the choices or requests of children. In addition, food marketing may cause less healthy diets and negative health outcomes for children (Grier et al. [11]).

The marketing environments of African American consumers are less likely to support the development and maintenance of healthy eating. Marketing that target African Americans may cause an increase caloric intake and poor food choices. African Americans may respond more readily to ethnically targeted marketing than white consumers Grier et al. [11].

There may be a greater exposure to marketing due to higher use of the media such as television, by African Americans. Factors that influence the media's depiction of the African American community include unemployment, lack of transportation, low incomes and decreased work flexibility Grier et al. [11].

Food availability

Children in the United States are living in neighborhoods that have been termed as "obesogenic" (Odoms-Young and Fitzgibbon). This termed is used loosely, to describe neighborhoods that provide economical, tasty and calorie-dense foods with insignificant resources available for physical activity. In neighborhoods located near supermarkets residents are eating more foods that are wholesome and higher quality. These two factors help to decrease the probability of obesity in neighborhoods located in close proximity to supermarkets. These positive results can be examined in a study after controlling for such circumstances such as family and individual economic level. Studies have shown that some African American neighborhoods have limited access to businesses that advocate eating healthy, such as full service restaurants and supermarkets. In comparison to Caucasian neighborhoods, there is a higher rate of fast food restaurants and convenience stores in African American communities Odoms-Young et al. [12].

According to Odoms-Young and Fitzgibbons study a correlation has been found between physical activity of youth and their environment. This study conducted by researchers examined factors such as available programs, equipment, and recreational facilities et al. [12].

Management strategies

School based health centers (SBHCs) are considered to be the one of the primary solutions to reduce health care disparities amongst school aged children. School based health care centers provide mental health treatment, well-child checkups, and dental care for students. Due to their convenient location they can assist with providing health care to students who are uninsured, lack transportation, living in underserved areas or are unable to make appointments do to a parent's busy schedule Guo et al. [13].

Greater than 1,980 SBHCs are established nationwide with the support from Medicaid, federal government foundations, other programs. The majority of student enrolled in SBHCs include those who are low income or uninsured. Various studies have shown that SBHCs have assisted these students in obtaining the healthcare that they need Guo et al. [13].

Researchers conducted a study to determine the impact of school based health centers in providing health care by eliminating barriers to health care access. The study was conducted in greater Cincinnati, Ohio with a sample that consisted of seven schools with new school based health centers matched with six other schools. The participants included students in kindergarten through the twelfth grade. Medicaid reimbursement costs for 5056 students in non-SBHC and SBHC groups from 1997-2003. The benefits versus the cost of the SBHC programs were compared in each group. Researchers found that Medicaid could potentially save $35 dollars per student per year and that school based health centers are cost beneficial and help to close health care disparity gaps. Based on this research one implication is that health centers can help to close health care disparities such as obesity. School based health centers should be considered as a health care delivery model to help with health care access in disadvantaged students [13,14].

A particular study investigated the effects of treatment dose on the treatment outcome among African American youth. The study was conducted in a major Midwestern metropolitan area with a sample size that consisted of 49 adolescents and their families.

According to MacDonnell, obese youth who received more sessions of therapy had a greater weight loss. The youth that attended more sessions lost 10 pounds versus the youth who attended fewer sessions gaining 12 pounds. They also found that youth motivation factors also were associated with successful treatment outcomes. Examination of the literature highlights the importance of incorporating motivation into weight loss treatment, particularly in the youth as it has been proven to be the best way of engaging this population.

Recommendations

African American childhood obesity has increasingly become a topic of concern requiring more investigation regarding its cause. Within the United States obesity has disproportionately affected the minority population. With obesity emerging in childhood, chronic illnesses such as diabetes, hypertension, and cardiac disease has increased morbidity and mortality later in life.

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Conclusion

Current research has shown there are multiple causes for African American childhood obesity. Although many causes have been presented, there still remains a lack of knowledge regarding

correlational associations making it hard to develop appropriate interventions to prevent and treat obesity within this population. Implications from current research also indicate the need for more research surrounding the genetic components regarding obesity. When examining the literature, the focus on African American childhood obesity is exceptionally limited in its scope. Minorities as a whole have been underrepresented by researchers thus stagnating improvements in healthcare. Recommendations for further research is made by the writers to aid in closing the gaps in understanding the impact in dietary patterns, family functioning, and genetics as it relates to African American childhood obesity.

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