

Physical Activity and Health in African American Youth

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Abstract. Promoting individuals' participation in physical activity (PA) holds significant significance in the field of public health due to the demonstrated preventative impact on diverse metabolic disorders, such as cardiovascular disease and type 2 diabetes. There is a lack of research on how race and ethnicity affect people's propensity to exercise and how to best encourage them to get moving. However, the research that is currently available suggests that a sizeable percentage of African American (AA) Youths do not achieve the levels of PA that are suggested. The primary objective of this study is to give a preliminary examination of the demographic features and health disparities that are experienced by AA adolescents. Additionally, it aims to explore the various factors influencing their engagement in PA and propose viable interventions to address these issues.

Keywords: Physical activities; AA youth; Intervention; health disparities.

1. Introduction

According to data collected by the United States Census Bureau over the course of the last four decades, the average life expectancy of people living in the US has grown noticeably because of the significant advancements made in medical treatment as well as in modern technology [1]. Although medical advances have resulted in extended life spans and improved health for the population, this improvement has not been felt equally by all, especially those with socioeconomic issues. In addition to socioeconomic factors preventing some individuals from receiving treatment, numerous epidemics persist today. Despite advances in health care, the United States is still impacted by high rates of cardiovascular disease, diabetes, obesity, and physical inactivity, and certain populations are more susceptible to these issues than others [2]. These disparities stem from a complex combination of variables such as poverty, inadequate access to healthcare, poor education, and unhealthy living conditions. Low-income residents and individuals of color have a higher chance to face these issues, resulting in a decreased life's duration. This article provides a basic overview of the health condition, PA patterns among young African American. The essay addresses what affects PA and the efficacy of prior attempts to increase it.

2. Current Health Data on AA Youth

2.1. Description of AA Youth

AAyouths (AAY) are one of the demographic groups that contribute to the United States' health crisis. According to the United State Census Bureau, 22% of the population, or 73,088,675 people, were under the age of 18. In those 73,088,675 people, 41,104,200 people, around 15% of the youth population are identity as AAyouth. Louisiana, Maryland, Mississippi, South Carolina, and D.C area had the highest proportions of Black adolescents in their respective populations in 2019. AAYouth only had a 42% chance of living in a two-parent household in 2019, compared to a national average of 70% and a non-Hispanic white average of 78%. In 2019, 48% of black youth live with only their mothers, compared to 17% of their white counterparts. It corresponds to 25% of AAYouth living in poverty [3].

2.2. Health Disparities of AA Youth

There are several health disparities that are well documented among the AA adolescent that prevent them from reaching their full potential to live an active life. The incidence of childhood

obesity has exhibited a significant increase, surpassing a double rise in children and a four times surge in teenagers within the last thirty years [4]. The National Youth Risk Behavior Survey in 2019 found [5] 21.1% of Black highschoolers are obese, compared to the 13.1% of their white peers and 15.5 percent of overall peers. The obese students were predominantly located in the South. Conditions related to obesity include diabetes, emphysema, and inactivity. In 2019, the prevalence of asthma diagnosis among black high school students, as reported by healthcare professionals, was recorded as 29.2 percent, compared to the overall percent of 21.8 and 19.8 respectively overall for white high schoolers [5]. Recent information on the occurrence rate of diabetes in AA adolescents are scarce. Based on the 2022 heart disease and stroke fact sheet, it was observed that the occurrence rate (per 100,000) of type 1 diabetes among black kids in the years 2014 and 2015 surpassed that of Hispanic and Caucasian adolescents. Among Black youth, the type 2 diabetes incident rate was 37.8, compared to 20.9 among Hispanic adolescents and 4.5 among white youth [6].

According to available data from 2018, the primary factors contributing to mortality among non-Hispanic black boys aged 1 to 19 in the United States were predominantly attributed to incidents of homicide, accounting for a cumulative percentage of 35.1%. The homicide rate of their white counterparts was 5.4% [7]. This is concerning because it eliminates opportunities for AA adolescents to engage in neighborhood-based physical activity.

3. Physical Activities and AA Youth

3.1. PA participation

Recent data from CDC suggests that AA adolescents' PA participation rate is lower than the general population overall. Based on information from the Youth Risk Behavior Surveillance System (YRBSS) in 2019, According to the study, a relatively low proportion of AA high school students, specifically 37.2%, engage in PA for the minimum of one hour per day on at least five days per week. It is the lowest compared to Hispanic and white populations. Additionally, the percentage of black high school students who did not engage in PA for at least an hour of for a minimum of one day out of seven days is the highest. YRBSS also gathered information on daily participation in PE among adolescents attending high school. and it revealed that AA students' involvement rate was just 23.8% comparing to the overall rate of 25.9%. Consequently, for high schoolers, the prevalence of black students is higher than Hispanic and white students for watching television for three or more hours [5]. More sedentary behaviors indicate less PA participation. Regarding physical activities in black high school students, females tend to have a worse outcome, and the level of PA declines with age. Before tailored and effective interventions may be established, several critical factors on PA among adolescents which is AA must be thoroughly studied.

3.2. The Impact Factor on Participation on PA among AA Youth

The levels of PA among AAY described above could be increased. The PA participant rate among these kids has consistently demonstrated the lowest rates compared to their White, and Hispanic counterparts [5]. Physical inactivity may contribute to the high metabolic and chronic illness rates among AA youths, including but not limited to obesity, diabetes, and hypertension. The explanation for physical inactivity in the AA youth population is complicated and multidimensional; nonetheless, research has been conducted from the individual level to the environmental level to better understand what factors contribute to the lower activity levels.

At the individual level, Dr. Baskin, and her colleagues conducted a study projecting the PA participation rate of AAY along with the factors that could influence the prediction in 2013 [8]. Using ecological framework, the present study involved the recruitment of a total of 54 male participants and 62 female participants, with an average age of 14 years, alongside their parents, to predict PA level. The assessment of self-efficacy for PA was conducted. by the authors through the utilization of an eight-item scale, emphasizing an individual's belief in their capability to participate in physical activities, even when faced with common obstacles. The study's findings indicate that self-efficacy

and moderate-to-vigorous weekend physical exercise are positively correlated. In addition to find out the correlation between gender, self-efficacy, and PA using sex-specific models, the study also finds that their personal efficacy for PA was the sole statistically significant predictor of moderate-vigorous PA (M-V PA) daily among boys. Another study published by Butt and colleagues in 2011 investigates the PA participation rate by age, sex, and ethnicity, the factors that entice and discourage adolescents from engaging in physical activity. [9]. A cohort comprising 1162 adolescents enrolled in high school, aged 13 to 16, participated in this study. The sample consisted of 702 female students and 460 male, the number who identifying as AA is 112 and 992 for Caucasians. Participants were given the Self-Administered PA Checklist to fill out in order to gauge their activity and sedentary habits. Additionally, their interest in PA was measured using the 25-item Children's Attraction to PA scale. Both the advantages and disadvantages of PA were also reported by the individuals. As the result, researchers has indicated that AA girls exhibit a higher tendency for participating in sedentary activities, while displaying a lower inclination towards engaging in active activities. The researchers also identified a correlation between gender, age, and physical activity. Specifically, in contrast to women, elderly men increased the time which they spent engaged in M-V PA, while women decrease. PA is less interesting for female than males. Similar research on the factors that influence a person's degree of PA has been conducted in both studies.

The percentage of PA among AA youth is also influenced by interpersonal aspects of importance. Numerous research studies have provided evidence indicating a beneficial correlation between family and friend networks of encouragement and the engagement of AAkids in physical activity. In 2015, Monica L. Baskin and her colleagues [10] conducted a study utilizing an ecological framework to investigate the elements at the interpersonal, societal, and environmental levels hat affect the rate of PA among AA youths. The study recruited 51 adolescents of African descent to engage in brainstorming focus groups. These groups were organized with the objective of exploring the components which inspire PA among the them, specifically within the context of their family, friends, and community. Then the next meeting, 56 participants (38 from the brainstorming group) were asked to sort statements from the previous discussion groups based on semantic similarity and rank the assertions according to their relevance, which was analyzed to represent relationships. In contrast to girls, boys are motivated to engage in PA by competition. This result is supported by research done by S.M. St George and D.K. Wilson in 2012 [11]. Furthermore, boys indicate that reinforcement and encouragement for physical exercise from both peer and family influences are motivating. In contrast, girls rate parental reinforcement and support as being more significant than that obtained from peers. This result indicates that both boys and girls seek assistance from their parents and peers. However, the results of this study, as well as the study done by Adkins et al. suggest AA young women, in comparison to White young women, may benefit more from parental encouragement to engage in physical activity.[12].

PA participation is affected by various elements, including the environment, community, institutions. There exists empirical research indicating the availability of places to engage in PA is positively correlated with the time individuals engage in PA [13]. Environments that have been demonstrated to facilitate PA among children often encompass recreational spaces, such as parks and recreation fields, which offer opportunities for engaging in physical activities [14]. The study conducted by Pulling Kuhn et al. in 2021 revealed that AA girls residing in, urban, poor neighborhoods exhibited increased M-V PA per day when their neighborhoods had a greater availability of PA locations and included a recreation center. In the context of AA girls, it shown that their belief of accessibility to PA locations in their local area (as determined by their assessments of access, walkability, and comfort) and their engagement in PA active means of getting to and from school have a statistically significant and positive correlation [15]. There is limited information concerning the influence of the environment in the PA participation of AA boys.

4. Intervention to Promote PA.

The aforementioned barriers to PA for AA adolescents must be overcome to increase the participation rate of PA. Participation in appropriate exercise and PA can prevent obesity and Type 1 diabetes. Several intervention initiatives have made an effort to provide a framework for increasing AA adolescent participation in physical exercise. They have attempted to address various aspects of family and community life.

In the springs of 2013 and 2014, an intervention was created to target AA preadolescent females and their mothers in Springfield, Massachusetts [16]. The main theory that supported the intervention is social cognitive theory. Formative research is conducted as part of the intervention, encompassing both surface-level such as the chosen dance style and music, as well as deeper aspects such as exploring the historical influences of the dance on AA culture. Additionally, the educational material places emphasis on significant historical AA women and their societal impact. Over the course of a 12-week intervention period, a total of 76 dyads consisting of Black mothers and their children ages 7-10 were distributed randomly among three groups: child mother, child, and control. The intervention was implemented on a tri-weekly basis over a period of 12 weeks. Each intervention session lasted three hours and consisted of two hours of homework assistance, healthy snacks, and one hour of dance. In terms of the dance intervention, experienced AA instructors came up with a couple of routines for each dance genre. Additionally, an instructional component was incorporated into each dance style, emphasizing its historical importance and its influence on AA culture. Furthermore, they were provided with periodic newsletters providing pertinent health-related information at intervals of 12 weeks. The newsletters encompassed a variety of activities for the daughters to engage in, while also shedding awareness on the profound influence exerted by historical AA women on society. During the intervention period, compared to the other two groups, the group of child mothers showed a marked increase in the proportion of their day devoted to vigorous and moderate-vigorous physical activity. In terms of the overall duration of afterschool intervention, the child mother group had more pronounced upward trends over time in the proportion of time allocated to vigorous activity in contrast to control and child-only groups. In comparison to the other two groups, the percentage of time that the daughter participants spent being moderately to vigorously active decreased more sharply when they were in the child-only group. However, there were no notable variations in the slopes of the child-mother and control groups. Some of the strengths of the intervention are that they are the first intervention to have a joint dance session and they measure PA level objectively. One of the limitations is that the small sample size due to high attrition rates might affect outcome of the study.

Another study looked at how much of an impact parental neighborhood and family support had on adolescent AA's level of physical activity, employing an ecological model. This research involved conducting a secondary data analysis of the "Active by Choice Today" randomized controlled trial, which aimed to enhance PA levels among underserved sixth-grade students [17]. In order to perform this analysis, a survey was administered to parents through telephone. A total of 198 teenagers (104 girls and 94 boys) who took part in the ACT trial were included in the study [11]. Parents were invited to participate in questionnaires in order to evaluate their children's sedentary behaviors as well as their impressions of the social and physical contextual support for engaging in physical exercise. The participants in the study were instructed to undertake a revised iteration of the Support for Exercise Scales [18]. In addition, the researchers employ accelerometers to determine one's level of PA and the associated BMI. This study's most significant conclusion was that young African Americans benefited greatly from having both parental and community encouragement to engage in regular physical activity. However, there was no statistically significant link found between the home environment and PA [17].

Two sizable urban black churches in the south recently participated in a community-based intervention [19] Using a church-based approach, the study would allow for actual intervention sites, which was one of the barriers previously mentioned. The church site was chosen as a deep structure tailoring due to its significance to the local AA population. A cohort of 41 female adolescents,

specifically from the black demographic and aged between 12 and 18, willingly offered their participation in a 12-week program conducted inside a church setting. The program involved a series of instructional sessions characterized by interactive elements, followed by a vigorous dance aerobics class lasting for 60 minutes. Researchers collected data before, during, and after the intervention was carried out. The dataset contains various biophysical measurements, including height, weight, blood pressure. Additionally, self-report questionnaires were administered to assess PA levels. These questionnaires included measures of PA self-efficacy, a 5-item Family Support Scale, and a recall questionnaire that has been modified. The results of the intervention indicated that female participants who reported higher levels of perceived family support demonstrated a larger likelihood of having higher total METS compared to those who reported lower levels of perceived support. Based on the results of this investigation, it can be said that individuals who exhibited the greatest favorable alterations in chosen PA characteristics over the intervention period were those belonging to families with greater yearly incomes and higher levels of education. There are also improvements in self-efficacy scores from pre-intervention to post-intervention [19].

5. Conclusion

Today, the disparities in health and PA among AA youths are a fundamental problem. Data on the prevalence of diabetes, and obesity, as well as physical activity, must be addressed. Numerous interventions and studies have been conducted to improve these statistics and can serve as models for closing the health disparity. Some of these studies have included interventions at the family, community, and faith-based levels. These and other prospective models are required to assist AA youths in achieving health parity with the rest of the nation.

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