Mini Review
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Childhood obesity and racism: 2022 views and observations

Abstract

As obesity continues to pose an immense challenge to mitigate effectively, efforts to untangle its determinants continue, especially those that may exacerbate or impact childhood obesity, and its predictable and well-established multiple often irreversible negative health impacts. Studied for many years in various spheres, the role played by socially derived inequalities, and their long term health effects on youth have not been well studied in this regard, however. This mini review discusses what appears to be a possible insidious and contributing factor impacting various forms of service, resource disparities, and situational opportunities that may explain in part the prevailing and unequal childhood obesity rates between minorities and the mainstream child in the United States. Extracted from current literature, it is concluded that this is a topic of high potential and clinical relevance, and one worthy of intense study, more acceptance and recognition, plus dedicated sustainable collaborative policy goals and supportive efforts.

Keywords: children, ethnicity, disparities, intervention, obesity, overweight, race, racism

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Overview

A multitude of data collected since 1970 show the prevalence of obesity has increased markedly in the United States among children and adolescents, wherein obesity-related risk factors and diseases formerly seen only in adults are increasingly being recognized in obese adolescents and even young children.[1] This prevalent state of excess body weight commonly acquired non-genetically in childhood, and which is highly challenging to reverse, consequently poses an immense public health concern that often worsens with age and demands innovative insightful approaches to impacting this widespread health negating situation. At the same time, even though several risk factors to account for the increasing rates of childhood obesity, at the child, maternal, and environmental levels have been identified in a multitude of cross-sectional studies, and others and that implicate genetics, physiology, culture, excess media exposure, socioeconomic status, education, sleep issues, and interactions among these variables, the role of discrimination based on race in one or more of these spheres, as well as other associated attributes has not been fully or duly recognized to date.[1–4] This is despite years of obesity associated mediator-based research, and consequent quite voluminous findings of consistently greater rates of the presence of more profound obesity rates, and adversity in minority children, and later on among many minority adults.[1,5]

In particular, less is known and reported in the peer reviewed literature about the early and long-term contributions of one or more forms of discrimination based on race in this regard, even though obesity or overweight prevalence and severity inequalities among minority children have been consistently recognized and identified for almost 15 years or more.[1,6] The impact of COVID-19 on childhood obesity rates, and the discrepant distribution in this regard,[7] another understudied related topic, similarly remains poorly documented, but again affects minorities more significantly, and more adversely in multiple ways than non minority youth, and especially those with a prevailing high body mass.[8,9]

This situation also persists currently in 2022 despite a belated focus on the concepts of equity, equality, diversity, and inclusion in multiple realms including sports, basic education, physical education, physical activity opportunities, food stamp programs, medical school acceptance processes, the selection of personnel who ascribe to equity in universities and health organizations, and others designed to level the playing fields that clearly impact childhood obesity.[10] Indeed, the application of the widespread efforts to highlight the value and critical importance of equity has not yet enabled any substantive visible evidence of its profound possible influence on childhood obesity rates and outcomes, where inequities based on race persist, especially in underserved areas.

Objective

This brief was designed to build on the thought provoking and well-articulated insightful report by Mackey et al.,[4] as to the potentially important role of racism in its multiple guises as a potentially modifiable mediator of excess childhood obesity rates and extent among large numbers of disadvantaged minorities. As well, evidence to support that of Browne et al.,[6] concerning the possible subtle and overt effects of societal structures sustained from years of racism and their impact on the development and resistant nature of childhood obesity that compels concerted action was sought.

Methods

To achieve the aims of this review, PUBMED, PubMed Central and GOOGLE SCHOLAR believed to potentially house the most salient current topical peer reviewed articles of current interest to the topic of childhood obesity and racism impacts was specifically employed. Sought were articles that were listed when applying the key terms: *Childhood Obesity and Racism*, *Childhood Obesity and Discrimination* as posted since September 1, 2022. All forms of publication on this topic were deemed suitable and while some articles may have been overlooked, an effort to select the most salient published articles on this topic at the current time. The ultimate goal was to examine all pertinent data published up until September 2022 wherein unequal United States based childhood obesity rates have been found, and where the possible role of overt or covert racism was highlighted. Those articles deemed relevant were carefully examined and if deemed noteworthy are described below in narrative form.

The term racism was applied here to indicate one or more unequal health or social opportunities that persist in distinguishing the health of the minority child from the mainstream child predominantly in the United States, in any way. As per Paradies et al.,[11] racism can be defined as the presence of avoidable and unfair negative biases that engender inequalities in power, resources, capacities and opportunities across specific racial or ethnic groups in a given society, but not all.[12]

Results

As representative of the paucity of information on the current topic to date, the PUBMED data base, the largest repository of medical literature in the world listed only 20 relatively topical articles as of September 1, 2022 using the key words childhood obesity and racism, and 25 using the terms childhood obesity and racial discrimination. Almost all in this regard were commentaries, or reviews derived from secondary sources, rather than empirical studies that may be challenging to design, conduct, analyze and that can clearly and irrefutably link racism or its multiple analogues to pernicious long lasting health effects across multiple developmental domains, such as childhood obesity, in certain racial or ethnic groups.13 However, even though the research base on this topic is very limited, a cursory review of available current reports do tend to reveal numerous forms of racism that may arguably be deemed to or hypothesized to be linked to unequal opportunities across multiple spheres and settings and that may contribute to or explain the higher than desirable rates of childhood obesity among minority children that may persist into adulthood with dire consequences (Figure 1).

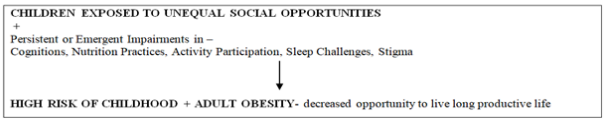

Figure 1 Hypothetical impact of possible adverse effects of racism and other related factors among minority youth on childhood obesity rates and extent that should be studied further.[1,6,12,13]

Indeed, reasonably new data sources not only affirm that the prevalence of childhood obesity has risen since the onset of the COVID-19 pandemic in December 2019, where minorities were clearly more impacted than other groups, but that obesity is inextricably linked with numerous chronic diseases, impairments in physical function and poor life quality, plus immense societal costs that fall more frequently on the shoulders of minorities. These include but are not limited to a host of medical, psychological, and social problems, including low self-esteem and discrimination that stem from racial biases and practices that may be intangible as well as tangible.[6] Commonly attributed to the accumulation of excess dietary calories and their transformation into visceral fat along with the release of high concentrations of free fatty acids into various vital body organs, as well as muscles, a role for social factors stemming from racism is clearly highly neglected in these discussions if compared to the importance given to physical health and nutrition based correlates even though racial and ethnic disparities in prevalence as well as treatment have clearly prevailed for more than 15 years.[14]

This aforementioned situation is not just theoretical, and of passing concern, but is potentially alarming if one considers a state where almost 20 percent of United States children, children in the world's richest most developed country, have been deemed to be obese or at risk for excess weight,[14] and that unless reversed, childhood obesity in particular, may well predate adult obesity, and numerous adverse health impacts, including depression and poor mental health, even among very young children and adolescents.[1] As well, even though mental health attributes of childhood obesity have been discussed for some time, the failure to resolve those disparities in prevalence of obesity in racial/ethnic minorities due to modifiable factors, including access to basic resources, a basic income, and multiple overt and covert forms of discrimination, among others, must be clearly be taken into consideration.[14]

At the same time, some attention to the parallel role of persistent or distressing stressful life events in childhood or even before the child is born,[15] as well as apparent racially mediated parental stresses, may need to be acknowledged to a higher degree in the future to avert any increasingly marked feelings of distress and their negative consequences, including stigmatization and emotional eating among vulnerable youth and their mothers.[16,17]

In particular, the National Institute of Minority Health and Health Disparities' Research Framework which is said to guide the explication of structurally racist mechanisms that influence health disparities and contribute to childhood obesity including: chronic toxic stress, the built environment, and the health care system, strongly advocates for interventions to combat structural racism and its potential adverse effects on children and their families in this regard.[6] Additional research shows strong evidence pointing to the negative impact of racial residential and school segregation, inequitable land distribution, and disparities factors along with exposure to environmental contaminants to have immense negative implications for many minority children and their health.[18] To address those inequalities in childhood obesity rates and severity that stem from prevailing racial and ethnic health inequities, efforts to mitigate this situation must clearly embrace and focus diligently and with persistence on addressing, eradicating, or altering those structures and policies that appear to create and perpetuate disparities in multiple life affirming ways for many due to their race, and when compared to an imbalanced and seemingly persistent prioritization of advantages to predominantly White and affluent communities. As well, structural racism, even if almost undetectable, can influence childhood obesity, for example if there are ever present hazardous discriminatory conditions within schools, as well as a lack of access to shade, or safe green spaces in the local as well as the social environment.

According to Skouteris et al.,[19] racist based influences and deprivations including poverty and food insecurity must be eradicated in all forms due to their predictably adverse influence from the earliest point in time on impairing the development of high-quality mother-child interactions during their first five years. This ability for the mother-child dyad to interact favorably is crucial for securing the child's developmental outcomes, and a state of sound nutrition practices, rather than poor nutrition practices that can foster a state of excess body weight.

To further address the possible role played by various forms of race related inequities cited above and others, and in recognition of a need for a stronger empirical evidence base, efforts to encourage a holistic life-course approach to childhood obesity prevention that includes an equitable developmental perspective has been put forth in the interim. According to this idea, the World Health Organization's Nurturing Care Framework has accepted that discrimination is a health determinant and has sought to provide for a foundational approach that involves reframing our understanding of childhood obesity through the lens of a concerted focus on the importance of an equitable nurturing care approach to child development. Further work by Priest et al.,[20] that stemmed from Australian based observations have proposed that metabolic syndrome, a leading global cause of

adult morbidity and mortality may arise as a consequence of one or more experiences of racial discrimination in early life, albeit this is not proven or well studied to date. However, after conducting a study to support this argument, and after adjusting for socio-demographic covariates, Priest et al.,[20] concluded there was enough evidence to support a need to more adequately address racism and racial discrimination as important probable social determinants of metabolic heart disease, including obesity, and the inequitable burden of these diseases as experienced by those from indigenous and minority ethnic backgrounds. Accordingly, it appears various discriminatory factors can simultaneously provoke a long term trajectory of poor health,[21] and this factor may account for comparable situations in the United States and elsewhere and that are found to consistently impact minority youth excessively and harmfully.[22,23]

Consequently, although impossible to prove, factors that stem from one or more correlates of racism and that prevail in early life do appear to be directly or indirectly implicated in fostering physiological and psychosocial adversity states that may underpin the onset and perpetuation of excess body mass among youth and later middle and older ages, particularly among Hispanics as observed by Vasquez *et al*.[24] In addition, further observations of Cave et al.,[25] among Aboriginal and Torres Strait islander populations have specifically indicated that exposure to racism at an early age does appear to increase the likelihood of negative mental health relative to children without racism exposure.

Unsurprisingly, an expert review panel that assembled in 2013[26] tended to support the idea that multiple characteristics linked historically to social exclusion or discrimination, including race, ethnicity, religion, socioeconomic status, gender, age, mental health, disability, sexual orientation or gender identity, can have a significant bearing on opportunities for physical activity, healthy eating, health care, work, and education, which are all possible unique or collective determinants of weight status. As such, it is well established that in many areas of the United States, certain racial and ethnic groups plus many low-income individuals and families live, learn, work, and play in areas that lack basic health-promoting resources such as parks, recreational facilities, high-quality grocery stores, and walkable streets. These same neighborhoods may have characteristics such as heavy traffic or other unsafe conditions that discourage people from walking or being physically active outdoors. The combination of unhealthy social and environmental risk factors, including limited access to healthy foods and opportunities for physical activity, can also contribute inadvertently to increased levels of chronic stress among affected community members, and which have been linked to increased levels of sedentary activity and calorie consumption.

As outlined recently by Blech et al.,[27] there is thus little question that the legacy of long-standing systemic inequalities, that have been fueling unequal access to critical resources such as healthcare, housing, education, and employment opportunities, can be said to be largely responsible for the rise and perpetuation of significant race disparaties in obesity as well as COVID-19 deaths and illness, among communities of color, who may already be inflicted with one or more chronic health conditions.

In the itemized list below, the observations of key authors are summarized in the context of how the authors perceive racist perspectives and discrimination may induce high childhood obesity rates among the disenfranchised. These converging and overlapping factors include, but are not limited to the impact[s] of:

a. Stress/Stressors Derived From Racism[19]
b. Mothers Experience of Racism, Racial Discrimination[28,29]
c. Multiple Oppressive Systems, Social Inequality, Resource Hoarding[30]
d. Neighborhood Context, Intervention Access[31]
e. Parental Stress from Racism and Neighborhood Segregation[32]
f. Pediatric Related Health Disparities[33]
g. Racial Discrimination, Environmental Factors, Low Household Education Levels[34]
h. Racial Inequalities in Breast Feeding[35]
i. School Segregation[36]
j. Social and Physical Environments[17]
k. Structural Factors – eg., socioeconomic status, discrimination, or policies with racial implications1[,4,22,37]
l. Structural Racism in Food Security and the Food Environment[38,39]
m. Unsafe Colonial Based Schools[40]

Benfer et al.,[12] adds to the above possible salient explanatory factors for disparate childhood obesity rates that disfavor United States minorities by highlighting the probable roles of inequitable social structures, stereotypes, legal systems, and regulatory schemes that are not designed to take into account the social determinants of health in decision making models and legal interpretations. Solutions to counter structural racism and the resulting inequities in opportunity and health as put forth by various authors include: 1) the development of stronger local and regional food system;[41] 2) interventions aimed at reducing the prevalence of racial discrimination and health inequalities, 3) services and institutions, which aim to support the mental health and wellbeing of disadvantaged children, 4) interventions to reduce racism and implement accountable policies which prioritize this goal,[23,25] 5) eliminate racial inequalities in socio economic status;[42] 6) examine association between structural racism and body mass more systematically.[43]

Griffith et al.,[5] conclude that new strategies such as their storybook approach if further developed may lead, uplift, and empower caregivers and others through health and wellness education, plus community collaboration among those suffering devastating conditions that affect many children, especially as regards obesity among minority children in underserved communities. An equitable, asset-based engagement of families and communities could also be expected to drive the transformation of policies, systems and social conditions to prevent childhood obesity more successfully than not.[19]

In this respect, a program entitled *Creating Equal Opportunities for a Healthy Weight* does set out to focus on the key obesity prevention goals and recommendations outlined in *Accelerating Progress in Obesity Prevention* through the lens of health equity. This program idea was derived from a workshop convened by the Institute of Medicine's Standing Committee on Childhood Obesity Prevention in June 2013 to examine income, race, and ethnicity, and how these factors intersect with childhood obesity and its prevention and that discussed potential future research, policies, and actions that could lead to equity in opportunities to achieve a healthy weight among American youth, regardless of race or ethnicity. Yet ten years later, these laudable proposals have clearly proved insufficient to quell the rising childhood obesity rates among minority children, although perhaps the rise has been less precipitous overall.[26]

Williams *et al*.,[44] propose experiences of discrimination reported by adults are adversely related to mental health and indicators of physical health, including preclinical indicators of disease, health behaviors, utilization of care, and adherence to medical regimens. Other evidence suggests discrimination can affect the health of children and adolescents, and that more research may help to solidify the validity of the causal as well as consequential role of racism in any form on multiple health attributes, and what interventions may serve to best reduce any negative short and long term biased health impacts. New insights may specifically emerge if the ability to track neural development among advantaged and disadvantaged youth is correlated with measures of body mass impedance and others that examine muscle fat water ratios and exposure to stress.

Discussion

Childhood obesity rates, while classified as being at pandemic levels in most parts of the world, are generally higher and more severe for disadvantaged youth, wherever they reside. To tackle this issue in the United States, many research efforts conducted since 1970 lay the blame partly on changes in physical activity levels, as well as food choices and technology factors, amng others. Yet, the possible explanatory role of factors such as persistent racism including racist based causes of exclusion, conflict and disadvantage[11] that can lead to unfair social and educational practices does appear to have merit in explaining the root causes of the gaps in childhood obesity prevalence rates, even if insufficient to drive policy.[45] As a result, Benfer *et al*.,[13] proposes addressing these plausible issues of inequality that may mediate or moderate childhood obesity rates in vulnerable youth though future systematic efforts to foster justice and the freedom of opportunities that are accessible to everyone. What is specifically recommended is the creation of the concept of "health justice," as a novel jurisprudence and legislative framework for purposes of the achievement and delivery of health equity and social justice that might well impact childhood obesity rates in all populations, including marginalized youth, as well as adults.

However, what form of remediation can best limit or eliminate one or more racist-based childhood obesity determinants is uncertain at best. Clearly, as in other realms of science, dedicated efforts to developing valid instruments that can objectify racist experiences more soundly, plus comparative studies of healthy weight and overweight minority youth may be helpful here. Discriminating past from persistent or present racist based social impacts, and who is most vulnerable, and to what degree, plus how inequalities that are not addressed impact social costs, will also likely help to more strongly validate and support considerations for more insightful policies and related practices, including support for equitable resource allocation. Possible parental or caregiver directed interventions, including efforts to ensure healthy food access, while building self efficacy for countering caregivers with racist attitudes and other negative approaches,[23,25] as well efforts to guard against exposures to abuse by young minority children and others also deserves very intense rather than superficial study and recognition of the role played by racist based influences.

Another possible very important and tangible approach to addressing childhood obesity disparities might be to carefully examine the impacts of various degrees and forms of racism or discrimination on neural development from an early age, because in addition to the role of genetic and environment factors in causing overweight and obesity, the onset of obesity may ensue from physiological factors including a possible deficiency in cortical and sub cortical neural processes that may favor short-term behaviors that are rewarding, such as eating specific foods and that can stem from persistent exposure to multiple inequalities and discriminatory practices. The manipulation of processed foods and drinks that create and maximize addictiveness, and unhealthy choices, and that are highly marketed to minorities, should also be carefully studied.

Finally, how social media influences affect and perpetuates and exacerbates all these conditions, while reducing outdoor activities and play in vulnerable youth requires urgent attention. In the interim as of September 5, 2022 it is concluded a profound 'push' by funders and medical researchers, economists, social scientists, legal experts, and social scientists is sorely needed to avert multiple life destroying rather than affirming impacts in multiple spheres of childhood overweight that has no basis in genetics. A responsibility to investigate and rectify any race based influences past and present in this regard is indeed incumbent upon all who can make a difference.[27]

As per Shepard et al.,[21] and others,[46,47] a host of possible direct and persistent vicarious impacts of racial discrimination and multiple racist based social biases appear to persist and are potentially sufficiently pervasive to foster highly detrimental impacts to the physical and mental health of minority children to a greater extent than mainstream youth.[48] The early, as well as the more frequent exposure to racial discrimination related impacts, if not mitigated or eliminated will predictably impact on multiple domains of health in later life, especially those related to weight status and a host of associated chronic health conditions.[28] Thus, even if not all encompassing as a childhood obesity explanatory factor among minority youth, reducing racism in all its forms should be embraced as any integral part of policy and intervention efforts aimed at improving the health of all United States children, thereby reducing health disparities.

Conclusions

As of 2022 and in light of the persistent disadvantages faced by many minorities in efforts to secure optimal health affirming resources and to lead healthy productive lives, multiple overt and covert racist based factors appear to impact upon the consistently observed higher than desirable childhood obesity rates evidenced among minorities in the United States. It is further concluded that concerted efforts to meticulously examine, expose and remedy, any form of racial bias that can impact selectively on a young child's childhood health, as well as the state of caregiver wellbeing may open the way forwards to a high quality life rather than a life of emotional and physical suffering for many.

By contrast, it is concluded that a society that arguably does little to equitably foster all youth's well-being, and overtly or inadvertently hampers this basic right by perpetuating one or more racially derived inequalities, will surely bear the costs of neglecting to do this, while setting the stage for possible harm in ways other than human costs. Despite a lack of sound evidence, it can be also be concluded that where racist attitudes prevail, they can be expected to foster one or more health challenges among children in their formative years, including adverse health conditions previously incurred almost solely by aging adults. As well, infectious diseases may be expected to become more common in young people who have a somewhat intractable excess weight status, are forced to be sedentary, are readily bullied, discriminated against for being overweight, and shunned socially.

To avoid any irreversible costly long term racist derived impacts that influence weight gain, we conclude that rather than await more evidence, sufficient evidence points to an urgent need for insightful immediate widespread social actions at many levels to avert multiple

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predictable childhood overweight and obesity costs and possible decades of immense suffering.

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None.

Conflicts of interest

None.

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