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Racial segregation, peer groups and the prevalence of obesity among female African American adolescents

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Abstract

Considerable attention has been given to the role that neighborhood environments play in addressing racial health disparities. However, these explanations do not fully take into account the social interactions of residents and their influence on perceptions of health-related behaviors. This article examines how racially segregated social networks could facilitate an obesity epidemic among female African-American adolescents by formulating obesity-promoting attitudes and behavior norms. Although there is growing empirical evidence on the role of social networks in increasing rates of obesity, there has been little discussion regarding its potential utilization as an intervention strategy. This article reviews the literature on this topic and suggests implications and limitations in designing interventions to address obesity using peer groups among female African-American adolescents.

Introduction

The percentage of adolescent obesity has roughly tripled over the past three decades, and female African-American adolescents account for a disproportionate share of this increase (Ogden, et al., 2010). Almost 30 percent of female African-American adolescents are obese, up 12.9 percent; the overall percentage and the rate of increase in this group are higher than that experienced by African-American male adolescents, Caucasian male and female adolescents, or Latino male and female adolescents (Ogden, et al., 2010). This prevalence, as well as the severity of obesity, triggers a number of health disparities across a range of indicators, including heart disease, cancer, stroke, diabetes, respiratory disease, and nephritis (LaVeist, 2005). Obesity in adolescence has a cumulative effect on lifelong health, with studies showing that health in adolescence, to a great extent, determines how people function physically and mentally as adults (Alleyne & LaPoint, 2004). Therefore, early interventions with this population are critical.

Individual-centered approaches to explaining the causes of ill health have, in recent years, lost momentum in academia due to their limited ability to ensure effectiveness in reducing health disparities. This limitation arises from ignoring the context in which individual factors are embedded (Geronimus & Thompson, 2004; Diez Roux & Mair, 2010; Link & Phelan, 1995). Among these contextual factors, *neighborhood environment* has been identified as one of the principle culprits behind racial health disparities (Massey, 2004; Williams & Collins, 2001). This article narrows the scope of previous literature regarding neighborhood environments and health disparities (Diez Roux & Mair, 2010). Instead, it focuses on the social environments where behavioral norms are formulated through social networks that greatly influence obesity-promoting attitudes and behaviors. An alternative explanation is proposed for the prevalence of obesity among female African-American adolescents¹ by considering the social context of segregation in the U.S. In addition, related intervention strategies are discussed by

¹ Gender differences found in rates of obesity among African-American adolescents are not the focus of this article. Further studies are needed to investigate what factors contribute to the buffering effects for male African-Americans adolescents, who are embedded in the same social context of segregation as their African-American female peers.

illuminating the influence of social networks, which have the potential to either facilitate or temper the obesity epidemic spreading among female African-American adolescents.

The role of neighborhood environments in racial health disparities

Racial segregation is one of the primary explanations why many female African-American adolescents are faced with living in under-resourced neighborhood environments. The Index of Dissimilarity, a widely used measure of racial residential segregation within a geographic area, indicates that African-Americans are further segregated from whites than any other minority group (Massey, 2004; Williams & Collins, 2001). LaVeist (2005) suggests Resource Deprivation Theory as one possible explanation for how a racially segregated community context could influence health. This theory is based on the idea that racial segregation produces deleterious neighborhood environments that impact both dietary behavior and physical activity, leading to obesity among female African-Americans.² Previous studies have suggested that detrimental food environments in neighborhoods, including limited access to healthy foods and a high prevalence of fast food outlets, lead to poor nutrition and high energy intake (Trasande, et al., 2009; Diez Roux & Mair, 2010). Also, the deteriorated condition of built environments such as sidewalks restricts residents' physical activity (Clarke, Ailshire & Lantz, 2009; Trasande, et al., 2009). These physical environments are pernicious to dietary behavior and physical activity and are among the principle mechanisms that current research uses to explain racial disparities in obesity.

However, this theory does not take into account the social interactions of residents within African-American communities and their influence on perceptions of health-related behaviors. This article explores social networks as one mechanism operating in the social environments of neighborhoods that could either accelerate or

² Previous studies on how gender differences impact vulnerability to community-related influences, have found that males have greater exposure to negative community-level forces (Luthar, 1999). While female adolescents may have less exposure to negative community influences, their restriction to the home in dangerous neighborhoods may be a disadvantage in terms of their health by decreasing opportunities to exercise outside.

ameliorate the obesity epidemic among female African-American adolescents. In particular, this study investigates whether living in an obesity-prevalent community itself influences attitudes on being obese or overweight.

The social network in which members are embedded

In previous studies of African-American obesity, it is emphasized that the role of innate cultural norms for many African-Americans lead individuals to eat more, be less physically active, and consider higher body weights to be more ideal than do their white counterparts (Marshall, et al., 2007; Parnell, et al., 1996). However, attributing the obesity-promoting attitudes and behaviors of female African-American adolescents to innate cultural traits ignores the social context and social consequences of racial segregation. Taking the context into consideration, studies have shown that a high prevalence of obesity within a community increases the possibility of a member having at least one obese person among significant immediate relations, such as close family and friends (Boardman, et al., 2005). More specifically, Boardman et al. (2005) found that residents in African-American communities have a greater chance of being obese than do those in other communities. This suggests that there is an internalization of obesity-promoting norms in an obesity-prevalent community, which should not be ignored when developing health-promoting interventions for female African-American teens.

Furthermore, the Theory of Reasoned Action (TRA) suggests that whether referential individuals—such as peers or parents—approve or disapprove of certain behaviors plays a significant role in determining what behaviors are performed (Montaño & Kasprzyk, 2008). The TRA framework points to high obesity prevalence in and of itself as a contributor to the growing obesity epidemic in this community. Christakis and Fowler's (2007) longitudinal study also reveals that having an obese friend increases the likelihood of an individual becoming obese by 57%. This supports the notion that living in an obesity-prevalent community increases the possibility of becoming obese. In other words, having obese friends makes social acceptance of obesity-promoting behaviors more likely, causing one to impose fewer conditions on eating and prefer sedentary behaviors to physical activity (Marshall, et al., 2007). There are limited

findings regarding precisely how social environments in segregated surroundings could trigger an obesity epidemic through social interactions. However, it is premature at this point to conclude that its influence is negligible.

Possible intervention strategies utilizing social networks

While racial segregation may be largely responsible for the disparities in obesity prevalence and the impact on health behavior and attitudes in African-American communities, effective intervention does not necessarily require ending racial segregation. Rather, examining racial health disparities allows us to investigate the process of the attitude formation toward obesity. The social networks in which female African-American adolescents are embedded have the potential to either facilitate or obstruct the obesity epidemic among this population. Just as social networks function to spread attitudes promoting obesity, they could also be used as the starting point of spreading healthy attitudes. A number of community-level interventions in public health make use of the basic concepts underlying the social network approach to obesity intervention by employing community partners in research projects (Two Feathers, et al., 2005; Two Feathers, et al., 2007). This strategy aims to not only ensure a culturally appropriate approach to addressing minority health issues, but it also creates a lasting influence within communities through the training of community members. Since community partners reflect and impact community interests, their changed attitudes and behaviors and increased health knowledge have the potential to promote change within their residential social networks.

This example of utilizing a social network as an intervention strategy could be replicated to confront the obesity epidemic among female African-American adolescents by considering the developmental characteristics of adolescents. During adolescence, peer groups play an increased role in the development of the adolescent's attitudes and behaviors. In the fields studying antisocial behavior among adolescents, one of the primary mechanisms used to predict antisocial behavior is having close friends involved in such behavior (Brody, et al., 2001; Vitaro, et al., 2000). This reflects the relatively heightened influence of peer groups on adolescent behavior and suggests that these groups

function as an important reference for adolescent behavior. Therefore, interventions should not exclusively focus on individual obese adolescents, but should also include peer groups in order to create lasting influence. This could be accomplished through the formation of a social network that facilitates obesity-preventing attitudes and behaviors among female African-American adolescents. This intervention does not directly alleviate the influence of living in an obesity-prevalent community, but rather employs a countering effect on the obesity-promoting attitudes similarly routed through social networks.

Implications and limitations of intervention strategies using social networks

Exploring the social mechanisms responsible for the obesity epidemic among female African-American adolescents, and suggesting that social networks be employed in intervention strategies to mitigate this epidemic has the following implications. First, utilizing a social network in interventions could be effective in addressing the obesity epidemic in this population, since changed attitudes in a single individual might subsequently spread to others (Christakis & Fowler, 2007). Second, it will ensure lasting behavioral changes by altering environments that could support sustained changes in attitudes and behaviors. Third, intervention targeting individuals as well as social factors that stem from racial segregation could empower this marginalized population by shedding further light on the social injustices they face.

However, certain points of this intervention strategy require further investigation. First, there are few studies about the relative influence of living in obesity-prevalent communities in terms of physical environments. In the communities in which many female African-American adolescents reside, the physical environments of the neighborhoods can be drastically impoverished. Therefore, changing attitudes and behaviors by formulating a positive social network for preventing obesity needs to be accompanied by efforts to improve physical environments, including developing access to healthier foods and safer built environments. Second, in order to expand the scope from social networks to the mass media, increased investigation into the formation of attitudes toward obesity among this population is required. Intervention strategies involving peer

groups could have a crucial impact on attitudes toward obesity in that they mesh with key developmental characteristics of adolescence. However, given the exposure of adolescents to mass media and its influence on the attitudes and behaviors of this population, further studies are needed to investigate this influence, including the consideration of appropriate intervention strategies.

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