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The Influence of Parental Participation on Obesity Interventions in African American Adolescent Females: An Integrative Review[1]

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African American adolescent females have the highest prevalence rates of obesity among those age 18 and under. The long-term health effects and associated comorbidities of obesity within this cohort threaten the health and well-being of a major section of the U.S. population. There is a need to understand the influence of parental support in reducing obesity related health disparities. Using a social ecological framework to explore parental influence on adolescent obesity interventions allows for greater insight into the complex and dynamic influences affecting the lives of African American adolescent females who are obese.

OBESITY HAS REACHED epidemic proportions in the United States (U.S.). One-third of all adults and 17% of children in the U.S. are obese (Institute of Medicine, 2012). Prevalence rates are even higher for racial and ethnic minorities (Corsino et al., 2012; Kirby, Liang, Chen, & Wang, 2012). In a survey of data from 2009 to 2010, among children and adolescents aged 2 to 19 years, non-Hispanic Blacks had obesity prevalence rates of 24.3%, and Hispanic children and adolescents were 21.2%, whereas same aged non-Hispanic White children and adolescents had obesity prevalence rates of 14.0% (Ogden, Carroll, Kit, & Flegal, 2012). Co-morbid diseases and increased morbidity and mortality associated with obesity add to the human and economic cost to individuals and society (Institute of Medicine, 2012). Direct lifetime medical costs are about $19,000 per child with obesity, which equates to approximately $14 billion for 10-year olds alone who are obese in the U.S. (Finkelstein, Graham, & Malhotra, 2014). There is a direct linear relationship between increases in obesity and increased rates of co-morbid diseases, such as diabetes and cardiovascular disease.

The diversity of the U.S. population continues to change. The latest census data show that 36% of the population belongs to a racial or ethnic minority group (Centers for Disease Control & Prevention, 2014) and while the largest segment of the U.S. population continues to be non-Hispanic Whites, this group had a slower rate of increase than the population as a whole (Humes, Jones, & Ramirez, 2011; United States Census Bureau, 2011). African Americans (AA) make up 14.2% of the total U.S. population (U.S. Census Bureau, 2011). Estimates predict minority children born in 2000 in the U.S. to have substantially higher lifetime rates of diabetes due to obesity than their White counterparts (Narayan, Boyle, Thompson, Sorensen, & Williamson, 2003).

Background

Obesity is a chronic health condition causing morbidity, mortality, and a reduction in the quality of life for obese individuals with obesity. Many factors contribute toward overweight and obesity, including poor nutrition, excessive caloric intake, and a lack of physical activity (Robinson &

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Butler, 2011; Wang, 2011). Additional contributory factors include genetic predisposition, environmental influences, culture, socioeconomic determinants, and personal value systems (Loos & Bouchard, 2003; Stafford et al., 2007). Clearly, obesity is a complex condition stemming from multiple influences. Prevalence rates of childhood obesity have increased substantially over the past decades (Ogden, Carroll, Kit, & Flegal, 2014), and affect immediate and long-term health concerns as children and adolescents who are overweight and obese are more likely to be obese as adults (Balistreri & Hook, 2011; Fletcher, Cooper, Helms, Northington, & Winters, 2009; Wickrama, Wickrama, & Bryant, 2006). African American adolescent females have greater disparities in both prevalence of obesity and reduced effectiveness of weight reduction interventions (Barr-Anderson, Adams-Wynn, DiSantis, & Kumanyika, 2013). With half of all adolescents in the U.S. from racial or ethnic minority groups, it is vitally important to understand the multifactorial influences, including the increased disease burden and health disparities, which affect these groups and contribute to poor health outcomes (National Institutes of Health, n.d.). The highest rates of adolescent obesity in the U.S. are among AA adolescent females at 22.7% (Barr-Anderson et al., 2013; Ogden et al., 2014). A comprehensive review of community and population based studies is needed to identify the complex and dynamic influences that contribute to adolescent obesity. The Institute of Medicine has recommended assessment of parental engagement on obesity-related interventions among children and adolescents to reduce health disparities (Institute of Medicine, 2014). A first step in addressing the recommendation is a review of extant literature and research. This review synthesizes the literature on the influence of parental involvement in obesity interventions among AA adolescent females using a socioecological approach.

Social Ecological Model

The social ecological model (SEM) provides a framework to describe how people interact with their surroundings and reciprocally, how their surroundings influence individuals. The SEM provides an overarching, umbrella-like framework of systems within a culture or subculture and the associated influences of societal values and cultural beliefs that shape individuals' interactions within their communities (Bronfenbrenner, 1994; Reifsnider, Gallagher, & Forgione, 2005; Swick & Williams, 2006).

This paper explores parental roles in and influences on obesity interventions for AA adolescent girls using the framework by McLeroy, Bibeau, Steckler, and Glanz (1988). McLeroy's adaptation uses the following concepts: intrapersonal (individual), interpersonal, institutional (organizational), community, and public policy. Using McLeroy's adapted model with determinant theories of behavior, health promotion interventions can be devised that build on a person's understanding and beliefs, along with the environmental influences to which individuals are exposed (McLeroy et al., 1988). Figure 1 demonstrates the nested aspect of each level, and how they interplay to affect the whole person.

Design

We conducted an integrative review to evaluate diverse sources of literature using the framework developed by Whittemore and Knafl (Whittemore & Knafl, 2005). We began with defining the purpose of the review, including problem identification and selection of a theoretical framework, and then conducted the literature search. Extraction, analysis, and a comparison of studies retained for this review was conducted using the SEM as a framework.

Methods

We conducted an electronic search of the literature, using databases including PubMed, CINAHL, PsycArticles, and PsycInfo. The search was limited to articles written in English only, full-text available, peer-reviewed, and published through May 2014. Search terms included African American, adolescents (ages 13–18 years old), family, parent, and obesity. This resulted in initial identification of 284 articles.

We reviewed titles and abstracts for appropriateness, deleted 49 duplicate articles, then extracted and reviewed databased articles on obesity interventions in AA adolescents. We included quantitative, qualitative, or mixed-method research studies addressing an obesity intervention that included AA female adolescents and at least one parent participating in some capacity (meaning active engagement in the intervention, completion of data collection forms, or both). Only studies conducted in the U.S., including children ages 10–18 were selected for this synthesis. The selection of a younger inclusion was based on the classification of the age for early onset of puberty (Marshall & Tanner, 1969; Tanner & Whitehouse, 1976). Articles were excluded if they were conducted outside of the U.S., were not associated with intervention development or implementation, lacked parental involvement, or did not contain data on AA females in the specified age range. Of the original 284 articles, 14 met inclusion criteria for this review (Figure 2), including two articles obtained through ancestry review of the bibliographies (Conn et al., 2003). Utilization of a code matrix facilitated consistent data abstraction of key elements. A synopsis of these articles follows in Table 1.

Results

The 14 resulting articles were analyzed, extracted, and organized based on SEM levels (Table 1). Data extraction included SEM levels, study design, and methodology (Figure 2). The majority of the manuscripts represented quantitative studies, but one was qualitative (Carcone et al., 2011), and three used a mixed-methods design (Burnet et al., 2008; Resnicow et al., 2005; Stern et al., 2006). The quantitative studies varied in intensity of intervention as well as intensity of parental involvement. All of the quantitative studies were randomized, controlled trials except the one by Heinberg et al. (2010).