EMPOWERMENT IN ADOLESCENT OBESITY: STATE OF THE SCIENCE

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ABSTRACT

Obesity rates have dramatically increased across the nation. Rural areas, however, have a higher rate of obesity and physical inactivity than urban areas. Interventions for obese adolescents require change behavior and motivation. One factor involved in this process is empowerment. Empowerment may be defined differently by disciplines, yet the overall meaning is similar. Self-awareness, enabled potential, and outcome related activities are defining attributes of the concept. This paper provides a conceptual analysis of empowerment through the literature, examines methodological tools and issues, and describes empirical aspects of the concept. A literature review of the aspects of empowerment and its relationship to obesity shows that low self-esteem and obesity are related. More research is needed to adequately understand how self-esteem, motivation, and goal-directed behavior impact the process of reducing obesity in the adolescent population. The cultural definition of empowerment must be considered to adequately understand the influence of the concept in adolescent weight reduction.

INTRODUCTION

Obesity is a significant health concern for children and adolescents in the United States. Since 1999, obesity has increased in children and adolescents from 13.9% in 1999 (Ogden, Flegal, Carroll, & Johnson, 2002; de Ferranti et al., 2004) to 15% in 2001-2003 (Ogden et al., 2006b). This latest reporting period of 2003-2004 finds that 17.1% of children and adolescents 2-19 years of age were overweight defined as body mass index (BMI) $\geq 95^{th}$ percentile of the age specific BMI-for-Age Growth Chart (Kuczmarski et al., 2000; CDC National Center for Health Statistics, 2004; Ogden et al., 2006a).

Rural areas have a significantly higher population of obese children than urban areas. In rural areas, the obesity rate is 16.5% compared to an urban rate of 14.8%. The highest rate of obesity in the nation are found in the clustered southern states of West Virginia, Kentucky, Tennessee, North Caroline, Texas, South Carolina, Mississippi, and Louisiana (Liu et al., 2007). The majority of these state are in the Appalachian region (Appalachian Regional Commission, 2007).

Physical inactivity and obesity are strongly related. About 2 out of 3 children in the United States meet the physical activity requirements of at least 20 minutes of vigorous activity 3 or more days a week (Sallis & Partick, 1994; Liu et al., 2007). Rural areas have a substantial lower rate of physical activity the urban areas ($p< 0.05$). In urban areas, 29.3% of children meet physical activity requirement. In rural areas, only 25.4% of children meet the same requirement (Liu et al., 2007).

Another correlating factor for obesity is poverty. In both rural and urban families, obesity decreased as income increased. Children from families with a poverty rating of 100% below the

Federal Poverty Level (FPL) had an obesity rate of 21.3% compared to 10.2% of children in families at or above 400% FPL (Liu et al., 2007). Rural areas, especially Appalachia have a higher rate of poverty. In Appalachia states the poverty rate is 14.3% compared to 12.6% nationally (U.S.Census Bureau, 2007).

CONSEQUENCES OF OBESITY

In children, risk factors for heart disease, such as high cholesterol and high blood pressure occur with increased frequency in overweight children and adolescents compared to children with a healthy weight. Overweight adolescents have a 70% chance of becoming overweight or obese adults. This increases to 80% if one or more parents are overweight. The most immediate consequence of overweight as perceived by the children themselves is social discrimination associated with poor self-esteem and depression (Carmona, 2004).

Obesity is not just a cosmetic problem. Obesity is accompanied by a host of co morbid conditions that are plaguing our youth. Problems of adult obesity, elevated cholesterol and triglycerides have now invaded the ranks of younger patient (Demerath et al., 2003) Adult onset diabetes has dramatically increased in this population (Rosenbloom, Joe, Young, & Winter, 1999).

The developmental state of adolescents creates difficult challenges for healthy teens. Adding the insult of obesity and comorbid conditions to this stage of life creates new challenges. In Appalachian culture, health promotion and disease prevention are not relevant until the process interferes with life processes (Cochran, 2005). Many parents do not perceive their child as obese or see it as a problem (Strauss, 2000).

Facilitating healthy behaviors is a continued challenge to nurses. Health problems are complex and the interventions must be appropriate to the client and the culture. Empowerment is frequently associated with changing health behaviors. The concept of empowerment has continually surfaced in the literature. This paper will analyze the concept of empowerment as related to adolescent obesity and synthesize conceptual, methodological, and empirical literature related to the concept.

EMPOWERMENT: CONCEPTUAL ANALYSIS

Aim of the Analysis: Empowerment

The power of a concept resounds in the common use and understanding of the term within a culture (Rodgers, 1989). The aim of this analysis is to examine empowerment, its defining attributes, and how the concept is used in the prevention and treatment of adolescent obesity. It is the analytical and clear analysis of the concept that builds and powers the basis of nursing knowledge. Analysis of the concept through the nursing literature provides credibility of the nursing profession and allows the concept to be operationalized for research and practice.

A literature search was conducted using Academic Search Elite; Agricola; Alt HealthWatch; Applied Science & Technology Abstracts; Biomedical Reference Collection: Comprehensive; Cochrane Controlled Trials Register; Cochrane Database of Systematic Reviews (CDSR); Pre-CINAHL; CINAHL; MEDLINE; Clinical Pharmacology; Database of Abstracts of Reviews of Effectiveness; ERIC; Women's Studies International; Health Source: Nursing/Academic Edition; Health Source - Consumer Edition; MLA International, Bibliography;

PsycARTICLES; and Humanities Abstract. Search terms included empowerment, self-esteem, adolescents, obesity, obese, weight loss, weight reduction, motivation, and outcomes. Sixty-four articles were selected based on relevance of the topics.

Empowering is described as giving authority or power to someone. This represents a passive acceptance. It is also defined as a method of inspiring someone or giving self-esteem (Soukhanov, 2002). The thesaurus suggests synonyms such as authorize, allow, sanction, make powerful, and to give power (McCutcheon, 2003). Related concepts are: self-directed, motivational, autonomy, responsible, advocacy, accountable and powerful.

A broader definition describes empowerment as a process by which people, organizations and communities gain mastery over their lives (Rappaport, 1984). Empowerment is cultivated by the effects of individual demand and a collaborative effort. It is based on the individual needs of the person (Kieffer, 1983).

In nursing, empowerment represents a social process of recognizing, promoting and enhancing the client's abilities to meet his/her own needs. It involves mobilizing the necessary resources to feel in control of their own lives (Gibson, 1991). In a study of public health nurses, empowerment was conceptualized as an active, yet internal process of growth (Falk-Rafael, 2001). Empowerment is a goal of nursing care. It may involve exposing power imbalances that prevent the patient from meeting his or her full potential (Butterfield, 1990). The nurse enables the client to realize the ability he or she possesses to exercise inner power. Caring and empowerment are closely linked in the process of nursing (Clifford, 1992).

Thee levels of empowerment are: Individual or psychological, organizational, and community. At each level, empowerment is defined and applied to various settings. The definitions of empowerment are specific to the context of the level in which they are utilized.

Individual or psychological empowerment draws on the work of Carl Rodgers and views power as a personal attribute (Rogers, 1977). This personal power grows with self-understanding. Change must occur in psychological empowerment on an individual level. Other models see the change involving beliefs and attitudes as well as knowledge of resources and the ability to be an effective change agent (Zimmerman, 1995). Individual empowerment has a separate connotation from that of organizational and community empowerment. It involves individual competence, self-esteem, skill development and participatory behaviors (Wallerstein, 1992).

At the organizational level, empowerment means creating and maintaining a work environment that involves the values that facilitate the employees' choice to invest and own personal actions which result in positive contributions to the mission of the organization (Tebbitt, 1993). Kanter (Kanter, 1993) theorized that power in organizations was derived from the structural conditions in the work environment, not the individual or socializations effects. Empowerment is a means of increasing overall organizational performance by allowing every person to contribute. In Total Quality Management, employees are given the opportunity to solve problems and assist with decision making processes through quality circles in order to increase empowerment (Randeniya, Baggaley, & Rahim, 1995).

Community empowerment describes the synergy that results from people and communities working together for a common goal. The combined efforts result in a greater production than an individual production (Katz, 1983b; Gilbert, 1995). This model describes evenly distributed resources which, in turn, creates collective action (Katz, 1983a). In nursing, community empowerment is a middle range theory developed to give direction to improving health in the communities (Persily & Hildebrandt, 2003). This theory involves a process model based on shared information, interaction, and partnership (Persily et al., 2003).

Empowerment: Definition, Attributes, and Uses

Based on the definitions in the literature, empowerment can be defined as an inner awareness of enabled potential resulting in outcome directed activities in the person-health environment. The defining attributes of empowerment are: inner awareness, enabled potential and outcome directed activities. Each of these attributes represents a cascade of thoughts, theories, and actions that are reciprocal and interrelated.

Inner awareness. Inner awareness symbolizes multiple behavioral traits identified as self-esteem, (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995), self-actualization (Hogan & McWilliams, 1978), and self-concept (Noppe, 1983; Planinsec & Fosnaric, 2005). Early theories of self-esteem emerged in the 1800's and have held fast in the literature. Philosopher, William James (1890) defined self-esteem as somewhat of a balance between reality based attainment relative to one's goals and aspirations (Coopersmith, 1967). Rosenberg's work with self-esteem described the principals of self-esteem formation as reflected appraisal, social comparison, and self-attribution (Rosenberg, 1979). Self-esteem may be global or specific. Global refers to the attitude toward self as a whole. Specific self-esteem deals with the facets of self-concept. A person may feel good about themselves in certain aspects, but not others (Rosenberg et al., 1995). More recent studies describe self-esteem as a function of development. Studies reflect that evaluative judgments become less positive as children move into preadolescent years (Pomerantz, Ruble, Frey, & Greulich, 1995b). Self-esteem, it is a term that inspires a thought process related to how we value ourselves.

Enabled potential. The human potential is an ever fluent energy source that rises from a cellular level to a social and psychological level. The literature sees potential as unfolding action often triggered by multiple stimuli. Whether it be an immune response (Cochran, 1995), action potential (Graham & Blair, 1947), developmental (Raju, Ariagno, Higgins, & Van Marter, 2005), religion, (Poloma & Pendleton, 1989) , the result is change.

What provides the motivation to change? Self-Determination Theory sees behavior as motivated by needs for autonomy, competence, and relatedness with others (Deci & Ryan, 1980b) Intrinsic motivation is key to this theory. Self-Determination Theory focuses on how individual motivation promotes development and persistence in an activity by personal choice without reward. When activities are not freely chosen, they are extrinsically motivated (Frederick-Recascino & Schuster-Smith, 2003). Human potential and human behaviors are influenced by motivation that is internal and external. Motivational Theories are well studied in literature. In health care, motivation is applied to health promoting and disease preventing behaviors. In nursing, it involves the interaction of the nurse with the client to facilitate change or restoring of health (Ball & Cox, 2003). Clients hold the ability and energy potential to change behaviors. The nurse provides the stimulus by education, self-esteem training, or the use of behavior modification.

Outcome directed activities. Outcome directed activities are the result of an empowered individual. The components that lead to the desired outcome may be the result of a positive self-esteem and an enabled or activated potential. Goal striving (Bagozzi & Warshaw, 1992), self-efficacy (Bandura, 1986), self-determination (Deci et al., 1980b) are all examples of theories that encompass the essence of activities performed by the individual related to a goal. The goal related outcomes described in the given definition of empowerment are health related and often steered by the nurse. The Theory of Planned Behavior (Ajzen & Fishbein, 1969) includes attitude, intention, control, subjective norms related to an action. In weight loss, this theory considers attitude and personality as predictors of success (Schifter & Ajzen, 1985).

The interactions of these concepts are continuous and interdependent on the other. Each attribute could be the antecedent or the result of the other. Self-esteem is influenced by the person's ability to understand and complete the activities related to the desired outcome. Enabled potential depends of self-esteem to assert the energy needed to perform the task. Outcome related activities intertwine the other concepts and are not only the end result, but also the stimulus for self-esteem and enabled potential. The flowing, yet sometime turbulent path of empowerment carves behavioral changes and integrates new activities as a way of life.

Empowerment and its defining attributes have matured and evolved through the literature. The use of the terms in nursing literature is vast, especially in health promotion and chronic disease. Empowerment is used both in the hospital and primary care settings. It can be applicable to the patient, the nurse, the employer, and the community.

METHODOLOGICAL ANALYSIS

Empowerment and its defining attributes have been easily translated in practice. Multiple tools measure empowerment. Empowerment scale measures individual (Spreitzer, 1996), organizational (Matthews, Diaz, & Cole, 2003), and community empowerment (Israel, Checkoway, Schulz, & Zimmerman, 1994). However, this methodological analysis will focus on tools that reflect self-esteem, enabled potential, and outcome related activities. Each of these elements represents part of a process and must be measured accordingly. Implications for practice are identified in each aspect of the definition.

Self-Esteem

Five tools to measure self-esteem appeared frequently in the literature. They are: Culture-Free Self-Esteem Inventories for Children and adults (SEI) (Battle, 1997), Coopersmith Self-Esteem Inventories (CSEI) (Coopersmith, 1967), Tennessee Self-Concept Scale (TSCS) (Fitts, 1965), The Piers-Harris Children's Self-Concept Scale (CSCS) (Piers, 1984), and Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965). These instruments are self-report instruments and each tool may be used in children.

These instruments measure global self esteem. While each instrument may be used in children, Coopersmith Self-Esteem Inventories and Culture-Free Self-esteem Inventories are designed for the youngest children. The Pier-Harris Children's Self-Concept Scale and The Tennessee Self-Concept Scale are suitable for teenagers; Rosenberg Self-Esteem Scale is designed for use with teenagers.

In nursing literature, self-esteem and obesity have been studied extensively. In 1995, a literature review of studies involving self-esteem and obesity was conducted. Of the 35 studies, thirteen clearly showed lower self-esteem in obese adolescents. Five out of six studies demonstrated lower body self-esteem in obese children and adolescents. Results in six out of eight treatment studies showed improved self esteem (French, Story, & Perry, 1995).

Other studies show that by adolescence, obese Hispanic and white females demonstrate significant levels of lower self-esteem compared to their nonobese counterparts (Strauss, 2000a). In other studies, obesity was more common in mothers with less education (30% vs 17%) as well as their children (Baughcum, Chamberlin, Deeks, Powers, & Whitaker, 2000). Strauss and Knight (1999) concluded that children with obese mothers, low family incomes, and lower cognitive stimulation have significantly elevated risks of becoming obese.

Enabled Potential and Outcome Related Activities

The literature is rich in studies of motivation, both intrinsic and extrinsic. The Theory of Reasoned Action (Ajzen & Fishbein, 1969) and Self-Determination Theory (Deci & Ryan, 1980) are the basis of the conceptual framework that that are operationalized in instruments to measure action or motivation (O'Connor & Vallerand, 1994). Although the basis of these instruments is motivation or action, a good deal of the research involves motivation to a particular activity or behavior. Since the outcome or activity is seen as part of the action or motivation, a tools that encompasses both have been developed (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997).

Education (Pomerantz, Ruble, Frey, & Greulich, 1995a), physical activity (Standage & Treasure, 2002), behavior change (Herrera, Johnston, & Steele, 2004) are only a few of the studies using measures of the concepts. In each of theses studies, motivation and a specified action have been evaluated. The motivation is measured by the accomplishment of the outcome.

Nursing has embraced aspects of motivational measurement and related them to health promotion and health prevention. Interventions to increase the patient's participation, readiness to change, and ultimately improve the health state of the individual are fundamental to nursing. Studies involving specific problems such as cardiovascular risk reduction (Fleury, 1992; Krummel et al., 2001), smoking (Matson, Lee, & Hopp, 1993) and children's obesity (Rhee, De Lago, Arscott-Mills, Mehta, & Davis, 2005) are only a few of the conditions that have been studied.

Health beliefs and health promotion instruments are tools commonly employed in nursing research. Pender has developed and refined instruments that measure the individuals health promotion beliefs and abilities (Pender, Barkauskas, Hayman, Rice, & Anderson, 1992). The perceived Health Competence Scale, (Smith, Wallston, & Smith, 1995) and Modification of the Champion Health Belief Model (Champion, 1984) have been used in the female population. The studies involved evaluating women without breast cancer, in breast self-exam (Champion, 1985), and mammography (Vadaparampil, Champion, Miller, Menon, & Skinner, 2003). The Health Self-Determination Index (Cox, 1985), and The Health Self-Determinism Index for Children (Cox, Cowell, Marion, & Miller, 1990) measures health behaviors and satisfaction with care. In most of these studies, motivation was positively correlated with performing health behaviors. Children and adolescents, however, were not well studied in motivational literature related to health behaviors.
Bandura's theory of self-efficacy (Bandura, 1986) has been incorporated into nursing theory and research. Studies have demonstrated positive outcomes with self-efficacy (Resnick & Zimmerman, 2002). Self-efficacy or competence scales demonstrate that Self efficacy should be measured at a very specific level, and should correspond to the behavior being studied (Resnick, 1996).

The many facets of empowerment are well documented in the disciplines of sociology, psychology, and education. Throughout the nursing literature, empowerment and its defining attributes have developed a substantial body of knowledge that continues to build. Research proliferates as the concept matures, divides, and generates additional nursing research questions.

The multiple definitions of empowerment and the contextual environment of the concepts allow a multitude of instruments to measure the concept and its attributes. Selection of the proper tools must include as assessment of the population, their age and literacy level. The goal or outcome should correlate to the conceptual definition used to define empowerment in the setting chosen.

One solitary tool is not established as the standard in researching of empowerment. This prevents a strong empirical definition of the concept. The defining attributes of empowerment have

more valid and reliable tools for measurements. However, studies involving self-esteem, motivation, and outcomes, or behavior change have not been studied collectively in relationship to weight reduction. The tools need further testing and refinement in the adolescent population.

EMPIRICAL KNOWLEDGE

Empowerment and its attributes have a valid place in nursing literature. Many facets of empowerment have emerged as the concept matured and developed. From the individual to the work place and community, our understanding of empowerment has changed. Empowerment materialized as a solitary concept. However, the meaning of empowerment has changed with the personal and social environment. The attributes have emerged and taken on their own meaning, thus further diversifying the basic meaning of empowerment. The vastness of the meaning and methods of measurement have somewhat dampened the force of research. The diversity and development of the concept has accelerated more rapidly than the operationalized definition.

Despite the fact that many studies have incorporated the attributes of empowerment into a body of knowledge, many gaps still remain. The prevalence of adolescent obesity demand interventions that meet the individual needs of the patient. Concepts such as self-esteem, motivation, and empowerment have shown to be related to treatment of obesity. What really empowers or motivate adolescents is not clear. It may be as individual as the person. Methods to measure the desire to change need to be developed in the adolescent population.

In addition to addressing the adolescent population, cultural aspects of empowerment must be considered. The literary definition of empowerment is not complete until it is defined culturally. Rural areas, like Appalachia, have strong cultural underpinnings that shape values and personal characteristics. Religion is a central theme in Appalachian culture (Cochran, 2005). The impact of spirituality reassigns the source of personal power and could change the perception of empowerment. Empowerment must be operationalized based on the cultural definition of the studied population. It is at that point that the influence of empowerment can be fully evaluated.

Future studies should be conducted to understanding the cultural concept of empowerment in specific populations. Tools to measure empowerment must be developed based on the cultural definition and the age group studied. The importance of empowerment in weight loss can only be determined when the characteristic of the population are considered.

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