

## **Utilizing Exercise and Nutrition in the Treatment of Chronic Disease: Community-Based Models**

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*The prevalence of chronic diseases in America has increased substantially within the last few decades, increasing the cost of healthcare by billions of dollars. In addition, these diseases have a higher incidence rate for low-income populations who may have greater difficulty accessing adequate resources or appropriate treatments. There has been a growing body of literature supporting the use of community-based exercise and nutrition interventions. Community-based interventions emphasize social supports and personal empowerment for behavioral change. Given the chronic and growing nature of these diseases, this paper will examine community-based exercises and the surrounding elements which facilitate and hinder behavioral change.*

Chronic diseases<sup>1</sup> are the most common, expensive, and preventable healthcare challenges in the United States today (Centers for Disease Control and Prevention, 2009). Globally, low-income populations<sup>2</sup> have higher rates of chronic illness than the general population, resulting from common lifestyle trends and a lack of resource availability. The prescriptive nature of traditional interventions for prevention and management of chronic disease fails to support sustainable behavioral change. The failure of current health interventions is compounded by economic and societal emphases on consumption, which sabotage individuals' efforts and opportunities to improve their health through exercise and diet. Alternatives, including empowerment-based community intervention models, have been found to facilitate behavioral change among members of low-income populations (Hinkle, 2008).

Social workers are equipped with knowledge and skills that prepare them to play a pivotal role in facilitating behavioral change among members of low-income communities. Since the beginning of the profession, social workers have worked with disadvantaged groups to empower individuals and mobilize communities. Attention to cultural nuances and the unique needs of diverse communities have been at the forefront of the profession. Community-based interventions for diet and exercise are ideal areas for social workers to mobilize communities to increase support and self-efficacy in people's behavior change for better health.

### **The Cost of Chronic Disease in America**

Current concerns regarding the need for prudent and effective healthcare interventions underscore the importance of addressing long-term and preventable illness. The prevalence of chronic disease continues to increase and the cost of care is predicted to rise substantially due to the expensive interventions and treatments necessary for addressing chronic illness. Recent estimates

by the Henry J. Kaiser Family Foundation (2009) indicate that general health-care costs surpassed 2.2 trillion dollars in 2007. Traditional interventions for chronic illness, such as surgery or medication, can be risky, have high costs, and most importantly, fail to address the behavioral issues that maintain or contribute to disease. The adequate management of chronic illness requires behavioral modifications to break long-standing lifestyle patterns that can sustain an individual's decline in health. For long-term behavioral change to be effective, individuals suffering from chronic disease must understand how lifestyle choices and behavior impact their health. Furthermore, the aid of community support mechanisms has been studied as an effective strategy for long-term behavioral change (Arkowitz et al., 2007). Without alternatives to traditional treatment models, chronic disease will continue to escalate healthcare costs and Americans, especially those in low-income communities, will continue to struggle with their health.

### **Self-Efficacy and Empowerment**

Scientific studies support self-efficacy and empowerment-based models in bettering health outcomes through improved diet and exercise. Involvement in exercise can empower an individual, "...through the self-efficacy mechanism," state Ozer and Bandura (1990). Empirical evidence demonstrates how equipping people with knowledge, skills, and resilient self-beliefs can alter their lives and they can begin to believe that they have control over their lives. Alsop et al. (2006) state that the empowerment model "...hypothesizes that interventions to improve agency and enhance opportunity structures can increase a person's capacity to make effective choices [and] this in turn can bring about other development outcomes" (p. 1). Ozer and Bandura utilized a mastery model for physical training and found that there were increases in self-efficacy in community-based exploratory studies with women and adolescents (Ozer & Bandura, 1990; Guthrie, 1995; Zivin et al., 2001).

One study conducted by Folta et al. (2009) found that a greater sense of self-efficacy in overweight and obese older women lowered cardiovascular risk through participation in a community-based program. In a comparable study concerning incidences of heart health in individuals, Luszczynska and Sutton (2006) found that those with a history of one or more heart attacks had a greater likelihood of adherence to an exercise program and reported higher levels of self-efficacy. In their study, Wellman et al. (2007) found that 620 participants showed significant physical and psychological improvements from their community-based exercise and nutritional program. Munro et al. (2004) observed that the implementation of a community-based exercise program was more cost-effective than medical interventions regardless of the lower exercise participation rates, highlighting the effective nature of the nutritional component of such health interventions.

### **Financial Benefits of Self-Efficacy and the Community-Based Model**

Evidence from several studies show that community-based exercise and nutritional programs can predict substantial cost-savings. Ackermann et al. (2003) found that a group of individuals participating in a community-based exercise intervention experienced fewer hospitalizations compared to those who received standard medical treatment. In the study, those who exercised more than once per week had a total annual healthcare cost of 1,057 dollars per person less than the control group (Ackermann et al., 2003). In another example, Roux et al. (2008) evaluated and compared community-based exercise interventions for chronic disease and found that they were cost-effective based on a variety of statistical simulations. Clearly, community-based exercise and diet interventions show promising results, yet people in low-income communities face many barriers in accessing these interventions.

### **The Role of Institutions**

Traditionally, centralized institutions such as hospitals served as a primary resource for addressing health concerns, providing a range of acute to chronic care. The centralization of specialized knowledge and expertise in hospitals, at times, can remove patients from their home communities. In hospital settings, it is common for doctors to recommend exercise and a healthy diet as supplemental aids for chronic disease management. However, comprehensive exercise and nutritional change require an incorporation of the behavioral patterns and motivations of the client. The particular needs of the client must ultimately be acknowledged by both the prescriber of a program and the receiver of care, which go beyond the primary general suggestion of a medical professional, and calls for secondary supports to fulfill the recommendation (Arkowitz et al., 2007).

In America, restaurants also play a key institutional role in hindering the success of diet and nutrition interventions. Representing a link between nutrition and a community, restaurants facilitate consumption. According to Glanz et al. (2007), survey responses from the executives of several national dine-in chain restaurants indicate that the high costs of carrying healthier ingredients with a short shelf-life and lower demand make it less profitable to offer healthy alternatives. The result of the cost efficiency of more sustainable, but less healthy ingredients, is the availability of an abundance of processed and preserved foods through these widely accessible chain restaurants to a mass market. Drewnowski (2004) states that energy-dense foods, usually made with sugar substitutes and laden with fat, are profitable for companies not only due to their lower production costs, but also because they have become a necessity to those who cannot afford to pay for healthier, more expensive alternatives. Some consequences of these economically-driven behaviors are evidenced in the high rates of obesity and type II diabetes in the United States among low-income populations (Drewnowski, 2004).

### **The Role and Benefits of Exercise**

According to the Centers for Disease Control and Prevention (2009), exercise reduces the risk for cardiovascular disease, type II diabetes, and various cancers; strengthens bones and muscles; protects the body from potential physical injuries such as falls; and, it improves individuals' moods and psychological state (Linenger, Chesson, & Nice, 1991). Furthermore, increased muscle density – a result of exercise – improves metabolic rates, physical function, and guards against muscle wasting (Baker et al., 2001). Exercise also lowers depressive symptoms for those suffering from chronic disease such as diabetes (Golden et al., 2008). Exercise has also proven to produce a reduction in delinquent behaviors among adolescents (Zivin et al., 2001), relieve trauma in those suffering psycho-sexual abuse, and have positive results in women with eating disorders and substance abuse problems (Guthrie, 1995).

Further, exercise has resulted in better balance, coordination, and a general sense of well-being in older adults (Kutner et al., 1997). Continued exercise fosters positive physiological and psychological benefits (Paluska & Schwenk, 2000). In addition to the benefits of general physical activity, traditional and holistic approaches to exercise such as yoga and martial arts increase an individual's sense of self-mastery, decrease anger, and generate a sense of inner-peace (Binder, 2007). Despite the evidence demonstrating the benefits of exercise, many people living in low-income communities are unable to access these benefits.

### **Existing Community-Based Models**

There is a growing body of literature supporting the use of community-based exercise and nutritional interventions; however, the widespread applicability of these programs requires further study. Randomized clinical trials link the effectiveness of community-based interventions with fewer hospitalizations, shorter inpatient stays, and decreased healthcare costs (Ackermann et al., 2003). Community-based exercise and nutritional interventions have also shown improvements in physical and psychological functioning after a debilitating illness (Harrington et al., 2010).

A community-based exercise and nutritional model facilitates access to the physiological and psychological benefits of exercise to individuals that may be excluded by socioeconomic factors. A program in rural Oregon is an example of the success of a community-based exercise and nutritional program for a low-income population (Berkes, 2009). This program lacked the specialized equipment or dedicated space found in most commercial gyms or the specialists found in hospitals, but through the use of a supportive and cohesive community, the participants developed a healthier lifestyle. Similar results were found in a rural Montana community-based exercise program with the use of a women's fitness boxing class (Ritter, 2009). These programs took place in the community and used the social supports of the participants to encourage and create a sense of empowerment. As per the empowerment model

(Alsop et al., 2006), these two interventions assumed that the strength for positive development came from a collective effort by the members of the community channeling strength toward a productive outcome. Although these programs have shown significant promise in the rural setting with low-income populations, more research needs to be conducted to understand the applicability in urban settings.

There has been a growing number of successful community-based exercise and nutritional programs targeting chronic disease. Roux et al. (2008) compared seven different community-based exercise programs and found that they were all cost effective and exhibited positive results. Some of these programs placed greater emphasis on social support and community-wide campaigns while others utilized the community but strengthened skills through individualized attention (Reger et al., 2002; Young et al., 1996; Kriska et al., 1986; Lombard et al., 1995). Additional programs focused on outreach and education (Knowler et al., 2002) and another program encouraged an active lifestyle within the community (Linenger et al., 1991). The success of these programs can be attributed to the specificity and applicability to the target populations.

### **Cultural Competency**

Effectively utilizing exercise as a tool for supporting individual health and well-being should be viewed as akin to the process of learning a language, rather than a focus on the end-goal outcome. Learning a language requires consistent and patient practice and a supportive community that nurtures practice and development. Fluency in exercise skills is not immediate, and it cannot be purchased. In addition, as with language, learning and understanding exercise requires comprehension and understanding throughout the process. As such, individual needs and cultural understanding along with existing community factors as well as supports must be taken into consideration when developing community-based exercise interventions.

Studies have indicated that African Americans living in urban environments are less likely to exercise when compared to a group of white Americans living in urban environments, indicating that differences in cultural background are relevant to the feasibility of community-based exercise models (Lavizzo-Mourey et al., 2001). The findings of the aforementioned study may be the result of the ineffective selection of exercise interventions for the targeted community. In addition, the study revealed that older African Americans were less likely to engage in exercises using weights and preferred to workout in groups (Lavizzo-Mourey et al.). The implications of such findings substantiate the call for culturally competent programming, and reinforce the applicability of a community-based model given the evident preference for group exercise. The study also provides implications for the role of social workers with regard to their common professional capacity for supporting cultural sensitivity in program implementation (NASW, 1999). Regardless of the source of the service provision, the development of community-based models should include

the consideration of community cultural factors, as well as foundational knowledge of individual and community norms and preferences, in order to ensure the successful implementation of a program.

### Conclusion

A shared focus on personal empowerment through the use of community resources is an effective alternative to traditional medical interventions in the successful management of chronic disease across communities. These programs have a proven efficacy in rural, low-income communities and have likewise shown great promise for low-income populations in urban settings. The high cost of chronic disease reinforces the utility and feasibility of community-based interventions and supports the plea for their wider application in national efforts to reduce health risks and increase healthy lifestyle options for people living in poverty. Social workers play a pivotal role in community-based interventions, as community organizing is a key component of the National Association of Social Workers' Code of Ethics. Social workers can provide support through interventions that mobilize community resources, develop effective programs, and evaluate and disseminate the programs' results. A collective effort toward mobilizing communities to apply exercise and nutrition models to their health-management schemes would greatly benefit the country and reduce health risks for current and future generations.

### Notes

- 1 In this paper, the term chronic diseases will be used to represent type II diabetes, obesity, and cardiovascular diseases.
- 2 The term low-income populations will be used in this paper to refer to people living below the official poverty line, as designated by the U.S. Census Bureau (2009).

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