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Barriers to a Healthy Lifestyle: From Individuals to Public Policy—An Ecological Perspective

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Abstract: By using an ecological framework, this article provides a review of common barriers to healthful eating and being physically active. The barriers are described within the four levels (intrapersonal, interpersonal, community/institution, and macro/public policy) of an ecological model highlighting the need for multifaceted approaches to overcome these barriers. Examples of how Extension professionals can effectively target these barriers to promote healthier lifestyles and encourage the development of related policies and community programs are given. Practical examples of interventions that have successfully used an ecological model to promote behavior change are also provided.

Introduction

Cooperative Extension professionals face the need of developing and implementing programs to promote a healthy diet and physical activity, the major modifiable lifestyle factors in the struggle against obesity, diabetes, and other chronic diseases (United States Department of Agriculture, 2005). However, eating healthfully and being physically active are challenging and involves many barriers.

Behavioral theories can be useful to explain and change lifestyle behaviors. Older programs generally focused on the individual level factors (e.g., knowledge, attitudes, and skills), but recent research highlights the importance of environmental factors and the need for multifaceted approaches (Sallis et al., 2006). Ecological models (McLeroy, Bibeau, Steckler, & Glanz, 1988), which include individual and environmental factors and their likely interactions (Sallis & Owen, 2002), fit this purpose very well.

This article provides a review of common barriers to healthful eating and being physically active and presents these barriers at the intrapersonal, interpersonal, community/institution, and macro/public policy levels of an ecological model (Figure 1). Suggestions about how to overcome these barriers and practical

examples of programs are provided to help Extension professionals apply similar approaches.

Barriers to Healthful Eating and Physical Activity

Intrapersonal Level

The intrapersonal level factors are mostly situated within the control of an individual. At this level, taste preferences (e.g., for fast foods) and lack of nutrition knowledge and skills, (Shepherd et al., 2006) can be barriers to choosing a healthful diet. Low nutrition knowledge (Wardle, Parmenter, & Waller, 2000), and inadequate cooking skills (Hughes, Bennett, & Hetherington, 2004) have been reported as barriers to fruit and vegetable intake. Food label (Nutrition Facts) use, a nutrition-related skill, is also positively related to nutrition knowledge (Petrovici & Ritson, 2006) and intakes of fruits and vegetables (Fitzgerald, Damio Segura-Pérez, & Pérez-Escamilla, 2008; Satia, Galanko, & Neuhouser, 2005).

Figure 1.

An Ecological Model of Factors Influencing Diet and Physical Activity. (The arrow extending across the four levels suggests that factors or barriers extend into and interact across various levels.)



Among the intrapersonal level barriers to physical activity, physical limitations (painful joints, shortness of breath, etc.), perceptions of already being fit, and lack of interest have been reported for older people (Crombie et al., 2004). For youth, intrapersonal level barriers include lack of self-confidence and motivation, and lack of knowledge about the health benefits of being physically active (Rees et al., 2006). Extension programs to increase awareness, knowledge, skills, motivation, and confidence would be best suited for overcoming these barriers.

Interpersonal Level

Interpersonal level factors involve the primary social relationships surrounding an individual (friends, family, coworkers, etc.) (McLeroy, Bibeau, Steckler, & Glanz, 1988). Studies show that children's food intake is related to their parents' nutrition knowledge and food intake (Gibson, Wardle, & Watts, 1998; Reinaerts, de Nooijer, Candel, & de Vries, 2007), and it is also influenced by their peers.

Young people tend to associate healthy foods with parents and fast food with pleasure, friendship, and socializing (Shepherd et al., 2006), and they expect negative reactions from their peers about eating healthier foods (Cullen et al., 2001). Education programs that increase nutrition knowledge and peer support for healthful choices may help to overcome these barriers. Lack of social support is also an interpersonal level

barrier for physical activity (Wilcox, Castro, King, Housemann, & Brownson, 2000), and Extension programs that encourage group participation (e.g., walking groups, inclusion of friends/family) would be most suitable to target this barrier.

Acculturation, the process by which a racial or ethnic group adopts the cultural patterns of the dominant/host group (Satie-Abouta, Patterson, Neuhouser, & Elder, 2002), can be a barrier at the interpersonal and community/institution levels, because culture can be viewed as a part of the social environment primarily within the family and the community. For example, greater acculturation is related to lower intakes of fruits, vegetables (Neuhouser, Thompson, Coronado, & Solomon, 2004), vitamins, and minerals, and higher fat consumption among Latinos (Dixon, Sundquist, & Winkleby, 2000). Conversely, highly acculturated Latinos are more likely to engage in leisure-time physical activity compared to their less-accultured counterparts (Crespo, Smit, Andersen, Carter-Pokras, & Ainsworth, 2000). Hence, when designing Extension programs, it is important to recognize and encourage the retention of healthy lifestyle patterns within the primary culture while promoting the adoption of healthful behaviors from the host culture.

Socioeconomic factors also influence lifestyle behaviors. Lower frequency of weekly family meals has been reported among children whose mothers worked full-time (versus those who were not employed) (Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003). This association might be the result of increased time constraints due to employment and/or the convenience and affordability of meals prepared outside of the home. Because availability of healthier food options at home and having family meals are related to eating healthful diets (Neumark-Sztainer, Wall, Perry, & Story, 2003), this can be a useful strategy for Extension educators. Considering that lack of time is a barrier both for healthful eating and physical activity (Jenkins & Horner, 2005; King et al., 2000), tips for planning economical and healthful food shopping, easily prepared family meals, and time management skills can be incorporated into the Extension programs.

Television viewing or computer use (screen time) can be intra- or interpersonal level barriers as they can apply to an individual or to the entire family, but they are also influenced by the public policy level factors such as food advertisement and media regulations. Greater screen time is associated with children's requests for advertised foods; consuming foods like candy, fast food, and sugar-sweetened drinks (Wiecha et al., 2006); and increased sedentary behaviors (Henry J. Kaiser Family Foundation, 2004). Therefore, emphasizing the replacement of screen time with more active pursuits and helping parents to establish strategies to control the amount of screen time and the influence of advertisements is essential in promoting a healthy lifestyle for families.

Community/Institution Level

This level includes institutional or organizational relationships and characteristics such as neighborhoods, work sites, and schools (McLeroy et al., 1988). Independently of individual level socioeconomic status, socioeconomic characteristics of the environment (e.g., neighborhood) influence eating behaviors. Underlying reasons could be limited food availability such as existence of fewer stores carrying healthier foods (Horowitz, Colson, Hebert, & Lancaster, 2004) and more fast food restaurants (Morland, Wing, Diez Roux, & Poole, 2002) in poorer neighborhoods. Oftentimes, limited access to private transportation (Morland et al., 2002) further limits the residents' access to stores with better food selections. Furthermore, frequent eating at restaurants is related to suboptimal dietary patterns characterized by larger portions and foods high in calories, fat, and sodium (Popkin, Duffey, & Gordon-Larsen, 2005). Hence, Extension programs focusing on economical ways of preparing quick and healthy meals and selecting healthier foods when eating out would be beneficial for individuals.

Socioeconomic characteristics of neighborhoods and built environment can be barriers to physical activity as well. Neighborhood safety, urban sprawl (Popkin et al., 2005), lower residential density, and perceived

characteristics of the built environment, such as lack of attractiveness and difficulty getting to businesses and shopping areas (land use mix) (Saelens, Sallis, Black, & Chen, 2003) have been reported as barriers. Community partnerships and policy level interventions such as parks, zoning, and development regulations (Sallis et al., 2006) would be suitable to overcome these barriers.

Macro/Public Policy Level

The macro/public policy level factors involve local, state, and federal policies. For example, the Food Stamp (Supplemental Nutrition Assistance) Program is an important resource for low-income populations and can help reduce food insecurity (Fox, Hamilton, & Lin, 2004). However, individuals with limited English or literacy levels are likely to experience obstacles in utilizing this resource (Algert, Reibel, & Renvall, 2006). A cyclic eating pattern, characterized by excessive eating when there is adequate food potentially through the Food Stamp Program and not eating enough at other times, can also be a barrier to a healthful diet (Dinour, Bergen, & Yeh, 2007).

Policies that influence food pricing also affect individuals' food intake patterns because healthful foods are reported to cost more than less nutrient-dense foods (Monsivais & Drewnowski, 2007), and price is a strong determinant of food choice (International Food Information Council Foundation, 2007).

These barriers can be addressed both at individual and policy levels. Extension educators can help limited-resource individuals learn how to select more healthful foods and stretch their dollars throughout the month. Educators can also support community partnerships and policies (e.g., farmers market vouchers) promoting easy access to healthier food options. Examples of local partnerships include farmers markets, city gardens, and farm-to-school projects. Because limited availability of healthful foods is also a barrier to healthful eating in schools and workplaces (Kubik, Lytle, Hannan, Perry, & Story, 2003), Extension educators can also take an active part in the School Wellness policies or collaborate with local businesses to promote wellness in worksites.

Increasing portion sizes (Rolls, Morris, & Roe, 2002) can be seen as a macro level barrier due to the nationwide acceptance, but it may be more feasible for Extension educators to target this barrier at the community, inter- and intraindividual levels through establishing partnerships with local restaurants and other community organizations, and educating public about portion control.

As mentioned earlier, it is also important for Extension educators to be aware of the food-related advertisement trends and regulations at the state and national level to be able to help families more effectively.

Examples of Programs

By using the ecological model, Middle-School Physical Activity and Nutrition study (Sallis et al., 2003) focused on environmental and policy level strategies to increase physical activity and reduce fat intake. For example, to change the existing structure and increase the availability of low-fat foods and physical activity opportunities, they trained school food service workers and physical education teachers and provided tips for parents on packing lower fat lunches. They assisted school personnel in establishing policies. Bulletin boards, posters, and newsletters were used to promote the healthier products and services in the community. That study resulted in increased physical activity, but it failed to change fat intake, possibly because of other barriers such as financial pressures that discouraged schools from removing popular, higher-fat items from the menu. These results highlight the need for developing interventions that address barriers at multiple levels.

An ongoing study, Trial of Activity for Adolescent Girls (Elder et al., 2006), used the ecological model and the Social Cognitive Theory (Bandura, 1986) to promote physical activity. The intervention focused on social resources (e.g., social support and modeling of behaviors by peers) and environmental barriers. For example, to boost self-confidence in performing physical activities (intrapersonal level), intervention schools have increased the number of non-competitive sports programs. To target lack of access to recreational equipment and programs (community/institution level), equipment availability and transportation to and from programs have been increased. Using such a multifaceted approach is more likely to result in successful behavior change.

Conclusion

The abundance of barriers operating at various levels underscores the need for multifactorial approaches to promote healthy lifestyle behaviors. Ecological models can be useful tools for Extension professionals to develop such interventions. Extension professionals are in a perfect position, as subject experts, community members, and leaders, to apply similar multifaceted approaches extending from individual solutions to public policy efforts in promoting healthier lifestyles.

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