Income disparity, lack of knowledge, and food inaccessibility are major factors contributing to poor nutrition. More than 49 million Americans are considered food insecure (i.e., unable to consistently access nutritious food to maintain a healthy lifestyle). Low fruit and vegetable consumption in low-income populations increases the rates of obesity and chronic disease (Bower, Thorpe, Rohde & Gaskin, 2014; Larson, Story & Nelson, 2009; Zenk, Schulz, Israel, James, Iaco & Wilson, 2006; Powell, Slater, Mirticheva, Iaco & Chaloupka, 2007). Obesity rates among low-income children are 1.7 times higher than in affluent children and the rate of obesity in low-income households is increasing substantially faster than in their more affluent counterparts (Skelton, Cook, Aufinger, Klein & Barlow, 2009; Wang et al., 2010). Lack of transportation also limits access to supermarkets (Chung & Myers, 1999; Kauffman, MacDonald, Lutz & Smallwood, 1997). Underserved communities often lack supermarkets carrying a variety of nutritious and affordable foods. Instead, the prevalent convenience stores and non-chain groceries offer more calorie-dense, pre-packaged convenience foods (Bower et al., 2014; Ratcliffe, Merrigan, Rogers & Goldberg, 2010; Zick, Smith, Kowaleski-Jones, Uno & Merrill, 2013). Some individuals may not realize the impact of a healthy diet on quality of life and disease prevention. Fresh healthy foods may also have more complex preparation methods than packaged convenience foods.

Limited financial resources also affect food selection. Low-income families with children in the house may find it more cost efficient to choose convenient, preferred foods that are less likely to be wasted. The time and money it takes to introduce healthier foods may seem inconvenient and unaffordable.

Through providing healthy food access, affordability, and knowledge, school gardens have emerged as a potentially innovative way to improve healthy food access, affordability, and knowledge thus, increasing the consumption of fresh fruits and vegetables in low-income communities (Hardy, Wadsworth & Kuh, 2000; Kaufman et al., 1997; Larson, Story & Nelson, 2009). These programs may serve as a springboard towards healthier living and increased longevity. The importance of healthy food knowledge and access in preschool and school-age children is evident because this is an age when eating habits are being formed (Denler, Wolters, & Benzon, 2014; Kudlova & Schneiderova, 2012). This literature review explores the impact of in-school education and interactive gardening programs on fruit and vegetable consumption in low-income communities.
Nutrition Education continued from page 3

involvement is an important influence in fruit and vegetable consumption. Parents have a strong influence over what types of food are being brought into the house and fed to their children. Many studies show that when parents and other caregivers encourage children to eat fruits and vegetables, children also increase their consumption of healthy fruits and vegetables (Birch, 1980; Hardw, Wadsworth, & Ruth, 2000; Zemly, 2016). Parental involvement stems from their children's passions. When children show excitement and eagerness over their hands-on gardening and cooking experiences, parents may show increased interest and involvement. Children can borrow or invent recipes and take home garden produce to prepare these recipes at home with their parents. Parents can also volunteer in the garden and take home some of the harvest. Children should be encouraged to press their new knowledge to parents and caregivers through activities and events such as a harvest lunch for parents or a cook-off. The young gardeners can publish a weekly garden newsletter with updates on classroom and garden learning. Newsletters can contain resources for the parents to learn affordable shopping for healthy foods, new recipes, and other nutrition and wellness information. Parental involvement in the classroom will undoubtedly stir the children's excitement for nutrition, and the news about the children's information into the home, spawng long term changes in healthy food intake and ultimately improved health outcomes.

Long-term involvement in the gardening can solidify life-long healthy eating habits. The NEC interventions may also improve food accessibility for children (Robinson-O'Brien, Story, & Heim, 2009). As students get older, they can have the opportunity to serve as mentors for the NEC classes or be given opportunities to volunteer in the garden. This will allow them to continue developing their nutrition knowledge, give them access to healthy foods, and sustain their healthy eating behaviors.

Innovative integration of garden education into schools is becoming a popular and effective way to increase children's interest and engagement with fruit and vegetable consumption. Although there are a number of successful garden programs, research needs to be conducted in a more standardized way to statistically analyze the benefits of these gardens on children's overall health.

References


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