

# Chapter 10

## Get in the GROOVE: Promoting a Healthy Reality

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### ABSTRACT

*Over the last few decades, there has been a rise in the prevalence of overweight and obesity in American youths. This chapter describes the rationale for the virtual world features of an ongoing obesity prevention project that engages middle school aged girls in a 3-week summer science enrichment program. The Get in the GROOVE! program is designed to promote self-efficacy for healthy behavior change, increase health knowledge, facilitate healthy behaviors related to physical activity and nutrition, encourage a healthy body image, and promote the development and consolidation of a health self-identity. The virtual world component supplements experiences and reinforces curriculum and concepts learned in the physical world component of the program. Preliminary findings suggest that The Get in the GROOVE! program is a promising social environment to motivate healthy habits.*

### INTRODUCTION

In the United States, more than one-third of all children and adolescents are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2014). The high prevalence of excess weight in youth is not unique to the United States but is also observed in many other countries (Wang & Lim, 2012). This situation is of considerable public health concern due to the well-documented health and psychosocial consequences associated with excess body weight together with the fact that overweight and obesity during childhood

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is likely to persist into adulthood (Must & Strauss 1999; Thompson et al., 2007; Pulgaron, 2013; Williams, Mesidor, Winter, Dubbert, & Wyatt, 2015).

The determinants of excess body weight are multifactorial and overweight and obesity have been linked to a number of lifestyle factors. Among children and adolescents, overweight and obesity have been associated with the consumption of sugar sweetened beverages, refined grains and high-calorie foods, and other poor nutrition choices, physical inactivity, and high levels of sedentary behavior (Bourke, Whittaker, & Verma, 2014; Drewnowski, 2004; Maher, Mire, Harrington, Staiano, & Katzmarzyk, 2013; Mitchell, Pate, Beets, & Nader, 2013). While data indicate engaging in healthy lifestyle behaviors such as improving diet, increasing physical activity, and decreasing sedentary behavior may contribute to a more optimal weight status and decreased cardiometabolic risk (Hagobian & Phelan, 2013), most American children and adolescents do not meet dietary (Banfield, Liu, Davis, Chang, & Frazier-Wood, 2016) or physical activity recommendations (Olvera, Kellam, Menefee, Lee, & Smith, 2010) and spend up to 8 hours each day in various sedentary pursuits (Tremblay et al., 2011).

Virtual reality technologies have the potential to improve eating habits, increase physical activity, and promote healthy lifestyle choices. In 2010, experts identified several research and education priorities to prevent and treat obesity (and its comorbidity, type 2 diabetes) including but not limited to “making smarter food choices,” “improving self-efficacy by virtual reality-guided practice of desired behaviors,” and “using virtual reality to make behavior change more reinforcing and participatory” (Ershow, Peterson, Riley, Rizzo, & Wansink, 2011, p. 217). Virtual technologies, in general, and virtual world technologies, in particular, have the potential to augment learning experiences as they can immerse users in social learning environments (Johnson & Levine 2008). Additionally, children of all ages enjoy engaging in virtual activities, and are, often, familiar with virtual worlds and similar technologies (Coles, Strickland, Padgett, & Bellmoff, 2007; Prensky, 2001).

This chapter describes the rationale for the virtual world features of our ongoing obesity prevention randomized controlled trial, *Get in the GROOVE (Girls Realizing Options through OpenSim Virtual Experiences)*! The project compares two summer science enrichment program curricula that have similar health-related content (addressing physical activity and nutrition) but differ in the use of virtual world technology to reinforce health science concepts. *Get in the GROOVE!* was designed to investigate the extent to which a 3-Dimensional virtual world environment, explored in the context of a 3-week (90 contact hours) summer program (at the Patricia and Phillip Frost Museum of Science in Miami and the New York Hall of Science in New York), engages and immerses middle school aged girls in a unique learning environment that promotes self-efficacy for healthy behavior change, increases health knowledge, facilitates healthy behaviors related to physical activity and nutrition, and encourages a healthy, realistic body image. The GROOVE Island virtual world component supplements experiences and reinforces curriculum and concepts learned in the physical world components of the summer program and extends to the social environment of the summer program. GROOVE Island was designed to provide girls with opportunities for social support and for learning, modeling and imitation of healthy behaviors, and the development of a salient ‘health’ self-identity. In our conceptualization, when an individual has a health self-identity, that individual incorporates health-related features as a part of identity (Strachan, Woodgate, Brawley, & Tse, 2005; Stachan & Brawley, 2009). For example, the individual may view herself as ‘someone who is healthy,’ ‘someone who eats well,’ ‘someone who can walk 11,000 steps a day,’ and/or ‘someone who embraces a healthy lifestyle.’

We hypothesize that what is learned about health and behavior in the virtual world generalizes to and encourages the display of healthy behaviors in everyday life in the physical world. On GROOVE Island,

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