Chapter 7

Obesity Prevention in Second Life: The International Health Challenge

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EXECUTIVE SUMMARY

In industrialized societies, between 50% and 75% of the population weigh in at overweight or obese health status (Low, Chew Chin, Deurenberg, 2009; Ogden, 2007). Ecologic models posit that health behavior and outcomes are related to the environmental settings in which humans live, work and play; if environmental settings are not supportive, then poor health results. (Spence & Lee, 2003) Second Life is an interactive virtual world that is global, an ideal setting to reach international audiences who are real life residents of industrialized communities at high risk for obesity. Second Life provides a unique opportunity to increase knowledge, social support and behavioral skills necessary to reduce or prevent obesity with much broader reach than traditional face to face intervention strategies. Health behavior change interventions have had success in real life by exposing participants to interventions in virtual worlds, suggesting that information and skills learned in virtual worlds may translate to real life (Anderson, Rothbaum, Hodges, 2000). The International Health Challenge in Second Life began with the goal of extending the real life mission, goals and activities of the Texas Obesity Research Center of the University of Houston into Second Life. What emerged was a fun, exciting, interactive, multicultural, multilingual, theoretically grounded, virtual setting where resident avatars of Second Life learned about

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BACKGROUND

The Ecology of Overweight and Obesity

Obesity affects one in three Americans (Ogden et al, 2006) and has become a global epidemic in all industrialized societies (Low, Chew Chin, Deurenberg, 2009). In the United States alone, 64% of non-Hispanic whites, 76% of non-Hispanic blacks, and 76% of Mexican Americans are overweight or obese, with higher rates of overweight among men, and higher rates of obesity among women (Ogden et al, 2006). The overweight and obesity epidemic is primarily attributed to lifestyle and environmental changes that have occurred in the industrialized world in the last three decades, and is largely preventable with early and broad based intervention efforts. Overweight and obesity are associated with numerous chronic health illnesses, including coronary heart disease, cancer, stroke, and diabetes, four out of the ten leading causes of death identified by U.S. sources (Department of Health and Human Services [DHHS] 2008), and echoed by international bodies (World Health Organization [WHO], 2008). In the USA, roughly 300,000 deaths and $120 billion in medical expenses are attributed to obesity and obesity-related conditions annually. Over half of these expenses are paid for by Medicare and Medicaid, with each U.S. taxpayer responsible for about $200 per year for obesity-related medical costs. From an employer’s perspective, medical costs are 77% higher for obese employees than healthy employees, costing employers over $8,000 per person per year (Centers for Disease Control and Prevention [CDC], 2008).

Numerous individual approaches to weight control have been tried, and found effective, but typically only for a very short period of time. People find it hard to stick to restrictive diets and rigorous exercise programs, suggesting that lifestyle approaches that emphasize moderation may be a more realistic way to live a healthful life. However, even moderate approaches may be ineffective when there is little support for healthful living and are few opportunities to eat healthfully and be physically active. Ecologic models provide a structure to account for multiple levels of influences and the linkages and processes among them. Ecologic models encompass everything both internal and external to the individual and have recently begun to show promise for guiding research and practice across a variety of health domains. Spence and Lee (2003) have described the Ecological Model of Physical Activity that conceptualizes influences on physical activity as micro-, meso-, exo- and macro-environmental and suggests individual level health behavior and disease states as outcomes. Lee and Cubbin have provided an updated, visual model in their recent work (2009) to help consider how ecologic models can be broadened in scope to consider not only physical activity but also dietary habits and obesity as outcomes.

Micro-environments are the immediate environments in which humans live, work and play and may include the home, work, school, cafe, store, restaurant, park and many more. The micro-environments may be thought of as relatively static, but these are linked by dynamic meso- and exo- environmental linkages and processes. The linkages and processes may be social interactions, such as a conversation, or actual physical linkages.
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