Geocaching as a Method to Improve Subjective Health among Persons who are Overweight or Obese

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Introduction
The prevalence of obesity worldwide is staggering. According to the World Health Organization (www.who.int), 35 percent of adults over age 20 are overweight, and the proportion of people who are obese doubled between 1980 and 2008. The health effects of these changes are meaningful, as according to the National Heart, Lung, and Blood Institute, people who are overweight or obese are at an increased risk of heart disease, stroke, diabetes, certain cancers, and general poor health.

These figures have prompted agencies, practitioners, and scholars to identify ways of decreasing the prevalence of people who are overweight or obese, with the ultimate goal of enhancing their health. Henderson (2009) argued that sport managers can play a critical role in this area by identifying ways to effectively design, implement, and promote physical activity. Rowe et al. (2013) also recognized this potential, arguing in their theoretical paper that sport managers could focus on individual, social, environmental, and policy factors as a way to increase both elite and community sport participation (see also Casey et al., 2011; Zeigler, 2007). These arguments are consistent with those advanced by Chalip (2006), who suggested sport managers can identify novel approaches to increase physical activity participation as a way of improving public health. Indeed, efforts to increase physical activity are important, as according to the Centers for Disease Control and Prevention, people who are physically active generally live longer; have a lower risk of various diseases, including Type 2 diabetes, some cancers, hypertension, and stroke; and enjoy better psychological health.

Purpose
Building from this research, the purpose of this study was to examine the influence of a novel physical activity form, geocaching, on people’s health status. Geocaching represents a unique physical activity whereby people use global positioning devices (e.g., GPS, cell phone) to locate hidden treasures. As the treasures are frequently away from a roadway (e.g., in a field, state parks, on a mountain), people must walk or hike to reach the desired location. Schlatter and Hurd (2005) referred to the activity as “21st-century hide-and-seek” (p. 28), arguing that it could be a viable means for enhancing physical activity participation.

In the current study, we examine the degree to which participation in geocaching helped offset the negative health effects of being overweight or obese. As a number of authors have argued, physical activity interventions, such as geocaching, are likely most effective for those who need it the most (Lox et al., 2014). In line with this rationale, we developed the following research question to guide the research: how does participation in geocaching influence the relationship between BMI and health status?

Methods
Data were collected from national sample of 798 persons who were registered at www.geocaching.com. As part of an on-going longitudinal project aimed at understanding the behaviors and motivations of people who geocache, we posted a questionnaire link on the Geocaching website as well as various forms of social media associated with the activity. Participants completed an online questionnaire measuring (a) demographic information, including age, race, sex, height, and weight; (b) how frequently they participated in geocaching; and (c) their subjective health (DeSalvo et al., 2005).

The sample included people from all 50 states, was largely White (91 percent), included 52 percent women and 48 percent men, and had a mean age of 43.8 years.
Results
Results indicate most of the participants (73.4 percent) geocached at least once a week. We categorized BMI in line with CDC guidelines: healthy weight as less than 24.9, and overweight or obese as greater than that figure. Based on this classification, 21.6 percent of the participants were healthy weight, and 78.4 percent were overweight or obese. Finally, 36.1 percent of the participants indicated they had very good or excellent health.

We computed a moderated logistic regression to test the research question. BMI category and geocaching frequency were entered in the first step, with the product term entered in the second. Health status was coded as (1) very good or excellent, or (2) not, and served as the dependent variable. The first order effects accounted for 8 percent of the variance ($p < .001$), with BMI serving as a significant predictor of health status. Healthy weight people were more likely to indicate very good or excellent health than were overweight or obese individuals (59 percent and 30 percent, respectively). The interaction term accounted for an additional 2 percent unique variance ($p = .02$). Among those of healthy weight, geocaching weekly marginally increased the proportion rating their health as very good or excellent (58 percent to 60 percent). However, among those who were overweight or obese, the percentage from 24 percent to 32 percent.

Discussion
A number of scholars have argued sport managers can play a key role in addressing public health concerns, including obesity (Casey et al., 2011; Henderson, 2009; Rowe et al., 2013; Zeigler, 2007), and to do so, physical activity offerings must be enjoyable and accessible (Chalip, 2006). Geocaching offers one such possibility. Consistent with the notion that physical activity interventions are most helpful for those in need (Lox et al., 2006), we saw improvement in health status resulting from geocaching was most readily observed among persons who were overweight or obese. The results have implications for the delivery of sport and physical activity, particularly for persons seeking new, easily accessible opportunities.