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Original Research

Process Evaluation of the Living Green, Healthy and Thrifty (LiGHT) Web-Based Child Obesity Management Program: Combining Health Promotion with Ecology and Economy

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ABSTRACT

Objective: To conduct a process evaluation of the Living Green, Healthy and Thrifty (LiGHT) program, a novel virtual child obesity management program that combines health promotion with ecology and economy (Phase 1).

Methods: We carried out a mixed methods process evaluation involving qualitative and quantitative data collection in 3 phases: among 3 child–parent units (group 1) that informed program development; 9 child–parent units (group 2) that tested the draft program and further aided program refinement; and 17 child–parent units (group 3) for a 4-week pilot of the program. In the program pilot, we assessed participants' knowledge and readiness to change pre- and postintervention and explored perceptions of the program.

Results: Participants generally felt that the online format for program delivery was convenient and accessible, the content was practical, and the integration of health–environment–economy was well received. Many parents also appreciated the involvement of the family. However, the lack of visual appeal and overabundance of text was identified as a challenge, and children/youth in particular requested assurance that their personal information (e.g. weight) was not seen by their parents. The online method of program delivery holds the unique challenge of requiring special efforts to create a sense of personal connection and community. The presence of a “Way-finder” to assist participants and discussion boards/forums are potential solutions.

Conclusion: The LiGHT online weight management program offers an accessible, convenient weight management resource that children and families appreciate for its availability, broader educational scope, and practicality. Outcome evaluation of LiGHT will be carried out in Phase 2 of the project.

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R É S U M É

Objectif : Procéder à une évaluation des processus du programme Living Green, Healthy and Thrifty (LiGHT), un nouveau programme de prise en charge virtuelle de l'obésité chez les enfants qui combine la promotion de la santé à l'écologie et l'économie (phase 1).

Méthodes : Nous avons réalisé une évaluation des processus par méthodes mixtes comportant la cueillette de données qualitatives et quantitatives en 3 phases de 3 couples parent-enfant (groupe 1) qui ont servi à l'élaboration du programme, 9 couples parent-enfant (groupe 2) qui ont testé l'avant-projet du programme et ont aussi aidé aux raffinements du programme, et 17 couples parent-enfant (groupe 3) qui ont participé à l'étude pilote du programme de 4 semaines. Dans le programme pilote, nous avons évalué la connaissance et la bonne volonté des participants à changer en préintervention et en postintervention, et exploré la perception qu'ils ont du programme.

Mots clés:

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Résultats : Les participants ont généralement considéré que la version en ligne de l'exécution du programme était convenable et accessible, que le contenu était pratique; et l'intégration santé-environnement-économie était bien accueillie. Plusieurs parents ont également apprécié la participation de la famille. Cependant, le manque d'attrait visuel et la surabondance de textes ont été considérés comme problématiques, et les enfants et les adolescents en particulier ont demandé à ce que leurs informations personnelles (p. ex. le poids) ne soient pas vues par leurs parents. La méthode en ligne de l'exécution du programme comporte comme seul défi l'exigence d'efforts particuliers pour donner un sens à l'expérience personnelle et à la communauté. La présence du « Way-finder » pour aider les participants, les babillards et les forums de discussion sont des solutions potentielles.

Conclusion : Le programme de prise en charge du poids en ligne LiGHT constitue une ressource de prise en charge du poids convenable et accessible dont la disponibilité, la plus vaste portée éducative et le côté pratique sont appréciés par les enfants et les familles. L'évaluation des résultats du LiGHT sera réalisée à la phase 2 du projet.

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Introduction

Childhood obesity is a serious public health challenge (1). The 2009–2011 Canadian Health Measures Survey (CHMS) revealed that approximately one third of children and adolescents are overweight (19.8%) or obese (11.7%) (2). Childhood obesity is associated with an increased risk of adult obesity, and obesity-related comorbidities such as type 2 diabetes mellitus can be seen in obese children and adolescents (3–5). Childhood obesity is difficult to treat once established (5). Therefore, in addition to population-level preventive interventions, there is an urgent need for locally available, comprehensive and effective pediatric weight management programs.

However, a recent environmental scan carried out in British Columbia (BC) revealed that there were few opportunities for pediatric weight management in the province. BC has a population of over 4 million people, scattered in a vast area of more than 9 million square kilometers that includes many small communities (6). Half of the population lives within and around the city of Vancouver (Greater Vancouver) (6), yet the only comprehensive and multidisciplinary obesity management program for children is located at BC Children's Hospital in Vancouver; this program sees about 150 families per year (7). Thus, large segments of the BC population do not have access to a pediatric weight management program.

In addition, retention is a common problem faced by pediatric weight management programs. For instance, in a large community-based program that included 129 centers in Germany, outcomes could only be measured in 8% of the participants after 2 years (8). The drop out rate in most programs is high, possibly reflecting that these programs do not adequately motivate participating children and families (9).

To improve access and retention, we have developed the Living Green, Healthy and Thrifty (LiGHT) program. First, LiGHT is web-based, meaning that it will be accessible to obese children/youth and their families in BC, irrespective of geographic location. Several on-line adult (11) and pediatric (12,13) weight management programs have been developed and have shown promising results. Second, LiGHT aims to promote program retention by emphasizing the effect of the obesogenic environment in which we live (a physical and social environment that encourages energy consumption and discourages energy expenditure) not only on health but also on the global environment (e.g. increased use of cars, food processing and packaging) and on the finances of families (e.g. cost of car commuting and take-out meals). This novel approach would be more attractive than that of existing programs and would lead to improved outcomes. To our knowledge, no web-based program that combines health promotion with global environment and economy has been released, although a pediatric weight management program that includes an environmental component is in a development phase in the Netherlands (14).

This article describes the first 4 steps of this project (Phase 1, development and process evaluation) (Fig. 1): curriculum development (step 1); integration of the program in a web-based format (step 2); emphasis on the relationship between obesity and health, environment and finances (step 3); and acceptance of the program by youth and families (step 4). Phase 2 (implementation and evaluation) will focus on large-scale implementation and evaluation of the program and is expected to be completed in 2014.

Methods

The LiGHT program was developed between March 2011 and October 2012. It is designed for children age 10–17 years with the support of their parents. It is primarily web-based (15) but also includes direct interaction through phone and e-mail with a “Way-finder”, an exercise specialist trained in the area of child weight management to promote adherence to the goals and prevent drop out from the program. The Way-finder discusses the child's goals, explores barriers and enabling factors for goal attainment with the family, and offers suggestions and resources where needed. During 3 separate occasions, input was sought from children and their families to provide feedback on specific aspects of the program.

The study was approved by the University of British Columbia Research Ethics Board. Informed consent and assent were obtained from parents/guardians and their children, respectively.

Intervention

Figure 2 describes the overall flow of the program. Participants first do a preliminary assessment of their behaviour in 11 areas that include physical activity factors (active transportation to and from school, engaging in regular physical activity); nutrition factors (eating breakfast, fruit and vegetable consumption, sugar-sweetened beverages consumption, eating meals at home with family, and eating-out in restaurants/take-out food that includes consideration of portion sizes); and behavioral factors (“screen time,” watching and responding to advertisements, sleep and artificial temperature regulation). The participants are then provided with online feedback about areas that they are doing well in, and areas that need improvement. They are then asked to select the areas they want to work on. Each area is designed to be covered over 4 weeks, and participants can simultaneously work on up to 3 areas. Within each module, participants are provided with information about the health, environment and economic impact of each lifestyle factor, are asked to select 1 goal from a list of 2 or 3 goal options relevant to the area, and are requested to contact the Way-finder. There are opportunities for interactive activities designed to enhance understanding within each module, and a short electronic message that includes facts or tips about the

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