



Promoting physical activity, healthy eating and gross motor skills development among preschoolers attending childcare centers: Process evaluation of the Healthy Start-Départ Santé intervention using the RE-AIM framework



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ABSTRACT

Background: The Healthy Start-Départ Santé intervention was developed to promote physical activity, gross motor skills and healthy eating among preschoolers attending childcare centers. This process evaluation aimed to report the reach, effectiveness, adoption, implementation and maintenance of the Healthy Start-Départ Santé intervention.

Methods: The RE-AIM framework was used to guide this process evaluation. Data were collected across 140 childcare centers who received the Healthy Start-Départ Santé intervention in the provinces of Saskatchewan and New Brunswick, Canada. Quantitative data were collected through director questionnaires at 10 months and 2 years after the initial training and analyzed using descriptive statistics. Qualitative data were collected throughout the intervention.

Results: The intervention was successful in reaching a large number of childcare centres and engaging both rural and urban communities across Saskatchewan and New Brunswick. Centres reported increasing opportunities for physical activity and healthy eating, which were generally low-cost, easy and quick to implement. However, these changes were rarely transformed into formal written policies. A total of 87% of centers reported using the physical activity resource and 68% using the nutrition resource on a weekly basis. Implementation fidelity of the initial training was high. Of those centers who received the initial training, 75% participated in the mid-point booster session training. Two year post-implementation questionnaires indicated that 47% of centers were still using the Active Play Equipment kit, while 42% were still using the physical activity resource and 37% were still using the nutrition resource. Key challenges to implementation and sustainability identified during the evaluation were consistent among all of the REAIM elements. These challenges included lack of time, lack of support from childcare staff and low parental engagement.

Conclusions: Findings from this study suggest the implementation of Healthy Start-Départ Santé may be improved further by addressing resistance to change and varied levels of engagement among childcare staff. In addition, further work is needed to provide parents with opportunities to engage in HSDS with their children.

Abbreviations: HSDS, healthy Start-Départ Santé; NB, New Brunswick; SK, Saskatchewan; RCT, randomized controlled trial

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1. Background

Childhood obesity is an important public health concern in industrialized countries such as Canada (Overweight, 2006), the United States (Odgen, Carroll, Kit, & Flegal, 2014) and Australia (Australian Bureau of Statistics., 2013), where the prevalence of overweight and obesity exceeds 20% among children under the age of 5. While the cause of childhood obesity is multifactorial (Ang, Wee, Poh, & Ismail, 2013), it is well documented that sedentary activity and unhealthy eating habits significantly contribute to the development of overweight and obesity (Ang et al., 2013; Hill & Melanson, 1999).

The preschool years are a critical period for promoting physical activity and healthy eating, as these behaviors can persist into adulthood (Bélanger et al., 2015; Mikkilä, Räsänen, Raitakari, Pietinen, & Viikari, 2005) and modifying health behaviors in young children is considerably easier than in older children, adolescents, and adults (Goldfield, Raynor, & Epstein, 2002). Since approximately 84% of preschoolers (3–5 years old) living in developed countries receive out-of-home care (Organisation for Economic Co-operation & Development, 2016) and spend an average of 30 h a week in formal childcare (Directorate-General for Employment and Social Affairs, 2009; Sinha, 2014; U.S. Department of Health & Human Services, 2006), childcare centers are a prime setting for promoting physical activity and healthy eating in this age group. In fact, intervention studies in childcare centers have shown to positively influence children's consumption of vegetables and fruit, improve their nutrition-related knowledge and increase their physical activity (Mikkelsen, Husby, Skov, & Perez-Cueto, 2014; Temple & Robinson, 2014). However, the effectiveness of multilevel interventions targeting both physical activity and healthy eating behaviors simultaneously remains unclear.

Based on the socioecological model, which states that health behaviours are influenced by a combination of factors at multiple levels (intrapersonal, interpersonal, organizational, community, physical environment and policy) (Sallis, Owen, & Fisher, 2008), the Healthy Start-Départ Santé (HSDS) intervention was developed to increase physical activity levels, promote healthy eating and improve gross motor skills of preschoolers attending licensed childcare centers by increasing the centers' opportunities for physical activity and healthy eating. It also aimed to improve the knowledge, attitudes, and self-efficacy of the childcare center staff (childcare center directors, early childhood educators and cooks) (Bélanger et al., 2016). HSDS aimed to change the physical, social and policy environment of childcare centers through training, on-going support, as well as community and government engagement. Bélanger et al. (2016) provide a detailed explanation of the HSDS program elements.

Given the complexity of public health interventions, it is important to evaluate their effectiveness in real-world contexts. Process evaluation is helpful to “assess fidelity and quality of implementation, clarify causal mechanisms and identify contextual multilevel factors associated with variation in outcomes” (Craig et al., 2006). As such, process evaluation can contribute to a better understanding of the consistency and the internal validity of the intervention and help ensure the intervention was delivered as intended. The RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework (Glasgow, Vogt, & Boles, 1999) provides a stepwise approach to process evaluation and allows for a comprehensive evaluation of health promoting interventions in complex settings. This paper presents the methodology and findings of the HSDS process evaluation, using the RE-AIM framework.

2. Methods

2.1. Description of Healthy Start-Départ Santé

HSDS was implemented in licensed childcare centers in the provinces of Saskatchewan (SK) (located in the Canadian prairies) and New

Brunswick (NB) (located in Atlantic Canada) over three years (September 2013 to October 2016). As part of HSDS, three or five-hour on-site training sessions were delivered to childcare center staff (i.e. directors, educators, and cooks) which discussed the importance of physical activity and healthy eating for staff and preschoolers, explained how to incorporate active play and healthy eating in the daily routine of children, demonstrated how to help children develop their gross motor skills and addressed challenges to physical activity and healthy eating in childcare centers. Two options of training length were provided to accommodate varying needs and availability among centers. While all topics were covered in both training sessions, the 5-h session allowed trainers to discuss each topic in greater depth and provide additional hands-on practice. Each trained childcare center received the evidence-based LEAP BC™-GRANDIR (Decoda Literacy Solutions, 2016) resources which included HOP (a physical activity manual) and Food Flair (a healthy eating manual) as well as material for both staff and families. The LEAP BC™-GRANDIR resources were developed at the University of Victoria in British Columbia to support early childhood educators, caregivers and parents in providing opportunities for children to be physically active and eat a healthy balanced diet. In addition to these resources, childcare centers also received the Active Kids Toolkit Foundations For All® resource (fundamental movement patterns manual) (New Brunswick Gymnastic Association, 2007), an Active Play Equipment kit, an implementation manual and complementary resources. At each childcare center an educator was identified as a champion and given the title of a *Healthy Star*. The *Healthy Star* acted as a knowledge-sharing contact between the center and the HSDS coordinators to help support the adoption and sustainability of HSDS. On-going support was provided via phone or email once or twice a month by two provincial HSDS coordinators, and a 90-min on-site “Booster” session (additional on-site visit/personalized training) was provided approximately three to six months after the initial training to all HSDS centers.

2.2. Recruitment of childcare centers in Saskatchewan and New Brunswick

Provincial registries were used to identify all licensed childcare centers in Saskatchewan and New Brunswick. Of the 310 childcare centers in Saskatchewan, the 207 centers that offered a preschool program were invited via phone, mail or email to receive the HSDS training. In New Brunswick, HSDS was implemented as a pilot project. Therefore, 31 of the 782 childcare centers were randomly selected and invited to participate in the intervention. The HSDS intervention included a large-scale general implementation in Saskatchewan (n = 87) and a clustered randomized controlled trial (RCT) conducted among 61 childcare centers in SK (n = 37) and New Brunswick (n = 24) (Bélanger et al., 2016). In total, 148 childcare centers confirmed their interest and were recruited. All were provided a participation agreement form prior to the start of the HSDS intervention. The process evaluation was conducted in all HSDS study centers, regardless of whether or not they participated in the RCT. Therefore, results from this process evaluation reflect data collected from all HSDS-trained childcare centers. HSDS obtained ethics approval from Research Ethics Boards at Health Canada (#REB 2012-0071), the University of Saskatchewan (# 14–291) and the Université de Sherbrooke (#13-088).

2.3. Process evaluation framework

The RE-AIM framework (Glasgow et al., 1999) was used to guide the HSDS process evaluation. Table 1 presents all elements of the RE-AIM framework, the outcome indicators, as well as data sources. While the current evaluation addresses all elements of the RE-AIM framework, a more detailed assessment of the effectiveness of HSDS is analyzed separately.

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