

# Systematic dissemination of a preschool physical activity intervention to the control preschools



Erin K. Howie<sup>a,1</sup>, Alisa E. Brewer<sup>a,2</sup>, William H. Brown<sup>b</sup>, Ruth P. Saunders<sup>c</sup>,  
Russell R. Pate<sup>a,\*</sup>

<sup>a</sup> Department of Exercise Science, Arnold School of Public Health, University of South Carolina, 921 Assembly St, Suite 212, Columbia, SC 29208, United States

<sup>b</sup> Department of Educational Studies, College of Education, University of South Carolina, Wardlaw College, Columbia, SC 29208, United States

<sup>c</sup> Department of Health Promotion, Education and Behavior, University of South Carolina, 800 Sumter St, Columbia, SC 29208, United States

## ARTICLE INFO

### Article history:

Received 20 July 2015

Received in revised form 15 March 2016

Accepted 23 March 2016

Available online 1 April 2016

### Keywords:

Physical activity

Young children

Intervention

Preschool

Implementation

Translation

Dissemination

## ABSTRACT

For public health interventions to have a meaningful impact on public health, they must be disseminated to the wider population. Systematic planning and evaluation of dissemination efforts can aid translation from experimental trials to larger dissemination programs. The Study of Health and Activity in Preschool Environments (SHAPES) was a group-randomized intervention trial conducted in 16 preschools that successfully increased the physical activity of preschool age children. Following the completion of the research study protocol, the intervention was abbreviated, modified and implemented in four preschools that participated as control preschools in the original research study. The purposes of the current study were to describe the process of refining the intervention for dissemination to the control preschools, and to assess the acceptability of the resulting abbreviated intervention delivery. Five overarching behavioral objectives, informed by process evaluation, data from the original trial and collaboration with intervention teachers, were used to guide the implementation. Teachers in the dissemination classrooms reported high levels of acceptability, potential for sustainability of the program, and positive results in knowledge, skills, and child outcomes. Researchers can include a systematic approach to dissemination of effective intervention elements to the control participants in experimental studies to inform future dissemination efforts and begin to bridge the dissemination gap.

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## 1. Introduction

*"I have been impressed with the urgency of doing. Knowing is not enough, we must apply."* – Leonardo da Vinci

Greater than half of children aged three to six attend community-based preschools (Federal Interagency Forum on Child and Family Statistics, 2012), and a large number of them are not

meeting physical activity recommendations (Institute of Medicine, 2011). Preschools are an ideal setting for promoting and increasing physical activity, and researchers have targeted those settings to increase children's physical activity (Hesketh & Campbell, 2010; Monasta et al., 2011; Reynolds & Spruijt-Metz, 2006; Schoenwald & Hoagwood, 2001; Ward, Vaughn, McWilliams, & Hales, 2010). In a recent study, the Study of Health and Activity in Preschool Environments (SHAPES), we successfully increased moderate-to-vigorous physical activity (MVPA) of children in preschools (Pate et al., in press).

Interventions that increase physical activity need to be disseminated successfully to improve public health (Brownson & Jones, 2009; Owen, Glanz, Sallis, & Kelder, 2006). For this study, dissemination was defined as the active and planned dispersal of an intervention, as opposed to diffusion, which is passive and informal (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). Despite the need for dissemination, a longstanding dissemination gap exists, with effective interventions developed as part of research studies not being widely disseminated (Green, Ottoson, Garcia, & Hiatt, 2009). Hence, more information is needed

**Abbreviations:** MVPA, moderate to vigorous physical activity; PA, physical activity; SHAPES, Study of Health and Activity in Preschool Environments; SHAPES-D, SHAPES dissemination program; SHAPES-I, SHAPES intervention; TIRE, time intensity reach encouragement.

\* Corresponding author at: Public Health Research Center, 921 Assembly St, Suite 212, Columbia, SC 29208, United States.

E-mail addresses: [erin.howie@curtin.edu.au](mailto:erin.howie@curtin.edu.au) (E.K. Howie), [aebrewer@vcu.edu](mailto:aebrewer@vcu.edu) (A.E. Brewer), [bbrown@mailbox.sc.edu](mailto:bbrown@mailbox.sc.edu) (W.H. Brown), [rsaunder@mailbox.sc.edu](mailto:rsaunder@mailbox.sc.edu) (R.P. Saunders), [rpate@mailbox.sc.edu](mailto:rpate@mailbox.sc.edu) (R.R. Pate).

<sup>1</sup> Present Address: School of Physiotherapy and Exercise Science, Curtin University, GPO Box U1987, Perth, Western Australia 6845, Australia.

<sup>2</sup> Present Address: Center on Health Disparities, Virginia Commonwealth University, PO Box 980501, Richmond, VA 23298, United States.

on how to disseminate public health interventions effectively. While researchers should not have the sole responsibility for dissemination (Kreuter & Bernhardt, 2009), they should be involved in the process. Dissemination planning should start from the beginning of the research process, with the design of interventions (Butler et al., 2010; Oldenburg & Glanz, 2008).

Successful physical activity interventions often include multiple components and do not account for varying contextual environments, which makes them difficult to disseminate widely (Bopp, Saunders, & Lattimore, 2013; Dobbins, Husson, DeCorby, & LaRocca, 2013; Luckner, Moss, & Gericke, 2012). Additionally, funds and resources for implementing and disseminating intensive multi-component interventions have been limited. SHAPES was an effective multi-component intervention that included a plan to disseminate the intervention; after the formal trial, schools randomized to the control condition were given the opportunity to participate in the intervention. The researchers used a modified albeit systematic approach for refining and delivering the intervention to these dissemination preschools. These efforts served as a pilot for future dissemination of SHAPES. The refined intervention retained the essential elements needed for program success, yet required fewer resources to implement and was of significantly shorter duration, thus making it more feasible and acceptable for future dissemination. The purposes of the current study were to describe the process of refining the intervention for

dissemination to the control preschools and to assess the acceptability of the resulting abbreviated intervention delivery.

## 2. Methods

### 2.1. SHAPES intervention

The original SHAPES intervention (SHAPES-I) was a group-randomized trial with the primary goal to increase physical activity in preschool children (Pfeiffer et al., 2013). Classrooms in eight preschools received intervention materials and interventionists' support across the school year for three consecutive school years (2008–2011). SHAPES-I was a multi-component intervention designed to increase the physical activity of preschoolers in 4-year old preschool classrooms. The intervention was flexible and adaptive, meaning that individual teachers could modify the intervention for their classrooms while adhering to the essential elements (Bopp et al., 2013). The intervention components and the intervention approach used to deliver the components are described in detail elsewhere (Howie et al., 2014; Pfeiffer et al., 2013). Briefly, they included three components: Move Inside (indoor physical activities without a traditional academic component), Move Outside (outdoor recess), and Move to Learn (movement integrated into classroom learning activities). It also addressed the social and physical classroom environments. SHAPES-I was implemented using group workshops and individual

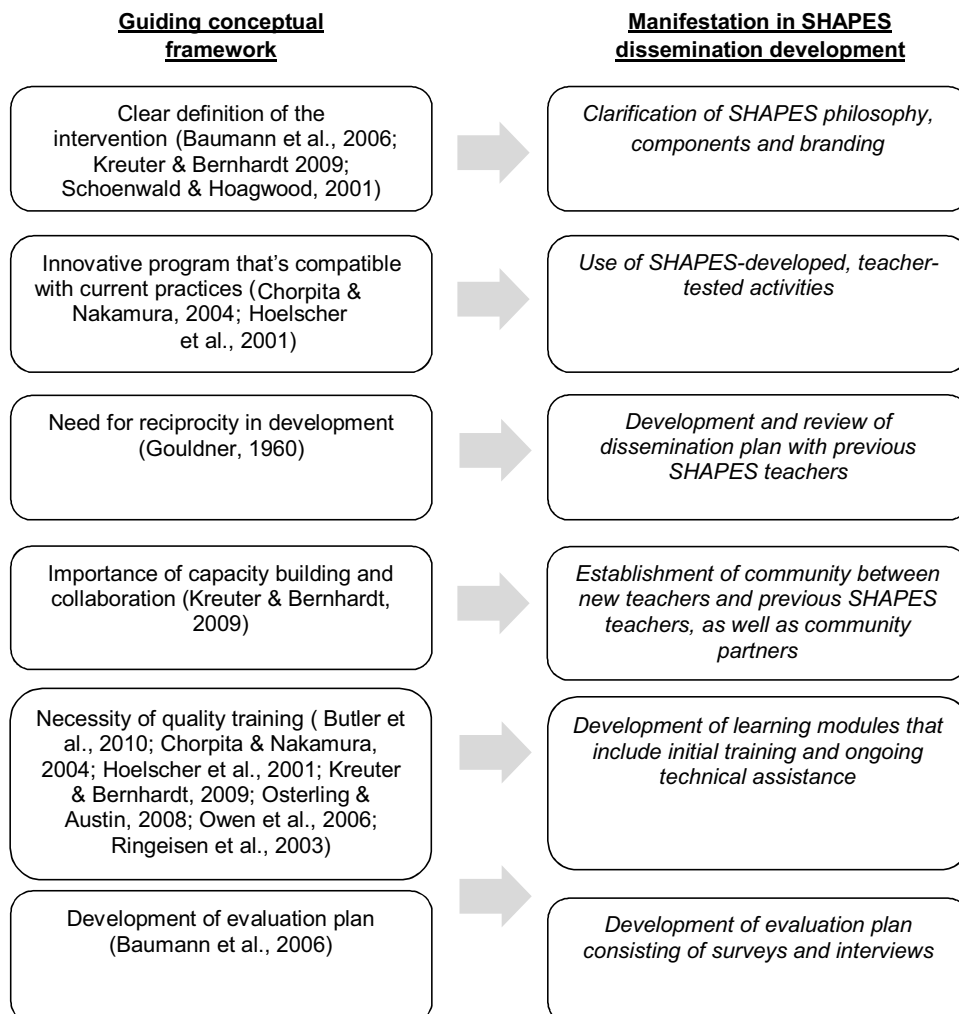


Fig. 1. Conceptual model for the development of SHAPES dissemination.

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