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Training for Evidence-Based Youth Physical Activity Leader Practices

By

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PLACEMENT SITE DESCRIPTION

The placement site for my capstone project was in the Dzewaltowski Lab, located in the College of Public Health at the University of Nebraska Medical Center. It was here, where I conducted literature reviews, constructed PowerPoint Presentations, educational materials to be distributed online, and other supplemental resources. During my capstone, I was also an employee of the Dzewaltowski Lab. My previous involvement within the lab room allowed for a strong sense of familiarity of the workspace, available resources in the building, and other employees. The Dzewaltowski Lab room has five computer stations, two conference tables, and dry-erase white board walls, all of which I was able to utilize if the situation presented a need.

In addition to the workspace, I met and collaborated with both new and previously known experts in the field. Working under Dr. David Dzewaltowski, he introduced me to Dr. Ric Rosenkranz, from Kansas State University. Additionally, we involved another expert, who I had previously known, Dr. John Noble from the University of Nebraska Omaha. They all served as invaluable resources in all steps of the process.

Key Terms

- **Community Organization -** A organization that has a formal or informal network of places with group opportunities in a community (e.g., school, after school organization, youth sport organization, youth club (scouting, 4-H).

- **Group Opportunity -** A recurring place where a group of children spend time that promotes healthy behaviors and development, such as a classroom, after school group session, sport team practice or youth club meeting (e.g., 4-H, Scouting). (Dzewaltowski, 2008)

- **Group Place Leaders -** Group place leaders are adults and youth with a high degree of responsibility and day-to-day interaction with children in group places where youth spend a majority of their time (Dzewaltowski et al., 2009; Dzewaltowski, Estabrooks, & Johnston, 2002)

- **Group Session -** A time period within the routine of a group opportunity that has a specific purpose (e.g., academics, active recreation, snack)(Coleman, Geller, Rosenkranz, & Dzewaltowski, 2008; Dzewaltowski et al., 2010).

- **Group Session Episode -** Sessions can be split into smaller time periods defined by specific group tasks (e.g., warm-up, cool down, game, skill practice), arrangement (e.g., whole-group, small group), and membership (over 50% of participants change groups) (Coleman et al., 2008; Schlechter, Rosenkranz, Fees, & Dzewaltowski, 2017).

ABSTRACT

Purpose: From a social ecological viewpoint, the way in which individuals interact with their surrounding environment, has a direct effect on their actions. One approach to modify behavior change is to strive to change the environment, thus driving behavior change. Participating in physical activity (PA) is a behavior to be targeted, due to its numerous health benefits. A population to consider targeting for increasing PA is children, as creating PA habits in childhood has been shown to track into adulthood . Change at a population level should begin by focusing efforts on the environments in which children are spending their time. As many youths spend time in school and other extracurricular activities, these settings offer an opportunity to insert an intervention that would increase children's accumulation of PA. The purpose of this capstone project was to successfully create a training program that built the capacity and development of group place leaders to create an environment that is conducive to optimizing the promotion of PA in youth settings. Through the use of informed practices derived from evidence-based frameworks such as SAAFE, LET US Play, and BASICS, leaders will increase time spent in moderate-to -vigorous physical activity (MVPA), decrease time spent sedentary, and improve quality of PA delivered to children, while in group opportunity settings. **Training Program Intervention:** An initial brief recruitment presentation that provides a foundational understanding of the growing issue of inactivity is targeted toward group place leaders of all types (i.e., school teachers, after school leaders, club leaders, and youth sport coaches). This initial introductory presentation serves as a means to engage with the audience on the importance and benefits of regular PA. Group place leaders who express interest in the program receive access to the subsequent series of online educational modules and other

resources. The online modules will educate group place leaders through introduction and elaboration of evidence-based practices. **Impact:** As of 2016, only 21.6% of children in America were reaching the recommended guidelines for MVPA. Creating a training program that builds the capacity of group place leaders couldn't potentially result in an increased amount of time children spend in MVPA per day. This would be achieved throught building the leaders capacity to insert segments of physical activity into their session, as well as educating them on how to implement evidence-based practices in order to ensure high quality physical activity is being delievered.

INTRODUCTION

Problem statement:

Participating in regular physical activity (PA) has numerous health benefits, covering physical, mental, and social aspects of health (Penedo & Dahn, 2005; Hallal, Victora, Azevedo, Wells, 2006; Warburton, Nicol, & Bredin, 2006). Performing regular PA has been shown to decrease disease and other health risks such as cancer (McTiernan, Ulrich, Slate, &Potter, 1998; Thune, Brenn, Lund, & Gaard, 1997; Thune & Furberg 2001), coronary heart disease (LaMonte, 2019; Powell, Thompson, Caspersen, & Kendrick, 1987), and diabetes mellitus (American Diabetes Association, 2003; Helmrich, Ragland, Leung, & Paffenbarger, 1991). Inactivity has been shown to double risk for certain diseases as well as place a burden on society that is comparible to that of smoking (Pate, et al., 1995). Additionally, there is evidence to suggest that children carry their PA habits into adulthood (Dennison, Straus, Mellits, & Charney, 1988; Telama, et al., 2005), all of which forms the basis for our proposed intervention to increase PA in children.

Recommendations from the CDC state that children and adolescents from ages 6 to 17 should accrue a minimum of 60 minutes of moderate-to-vigorous physical activity (MVPA) daily. Of those minutes, activities should include vigorous level intensity, muscle strengthening, and bone strengthening activities at least three days out of the week (United States Department of Health & Human Services, 2019). In recent years, estimates show that less than 25% of American children ages 6-19 are meeting the MVPA recommended guidelines (Katzmarzyk et al., 2016). Due to the low percentage of youth reaching the recommended PA guidelines, it reinforces the argument that there is an opportunity to insert a meaningful intervention.

Importance of training

In the past few decades, there has been a shift to view behavioral change from a social ecological approach. This approach takes into account the environment in which an individual is exposed to will influence their actions (Kumanyika, Jeffery, Morabia, Ritenbaugh, & Antipatis, 2002; Schlechter, Rosenkranz, Guagliano, & Dzewaltowski, 2018; Stokols ,2010). Positive manipulation of the environment could be dictated by a group place leader. This has been shown to be true in community organizations where group place leaders have received training on the use and implementation of evidence-based practices (Dzewaltowski, et al., 2010; Guagliano, Schlechter, Rosenkranz, Braun, & Dzewaltowski, 2016; Rosenkranz, Behrens, and Dzewaltowski, 2010; Schlechter, Rosenkranz, Guagliano, & Dzewaltowski, 2018).

Additionally, studies have shown that by implementing evidence based practices into an organized youth physical activity setting can increase the time children spend in MVPA. For example, Foster and colleagues found that without the implementation of evidence based practices to avoid the use of elimination games, children spent 36.5% in MVPA, however, with the implementation of evidence based practices of avoiding elimination games, children spent 50% of time in MVPA (Foster, Behrens, Jager, and Dzewaltowski, 2010). Several other studies have also proven the effectiveness of evidence based practice implementation resulting in an increase of MVPA in youth settings (Luepker et al., 1996; McKenzie et al., 2004). There is a clear indication that future studies should include components derived from evidence-based practices, in order to best address this issue of inactivity (Lubans et al., 2017; Reis et al., 2016; Weaver, Webster, & Beets, 2013).

Schools and programs based within schools have previously been identified as important components to promote PA through a multi-system approach (Global Advocacy for Physical Activity, 2012; Hills, Dengel, & Lubans, 2015). According to the U.S. Department of Education, nearly 97% of school age children in the United States attend a public or private school (United States Department of Education, 2016). Equally important, of those who attend a public or private school, 57% of school age children participate in some form of extracurricular activities (United States Census Bureau, 2014). It is evident that the majority of children attend community organization settings throughout the week, such as classrooms, clubs, afterschool programs, and youth sport. Leaders in school and other extracurricular activity settings generally have access to children, equipment, personnel, and facilities that are needed in order to create change in the environment of these locations. This type of access and ability to change the environments in which children spend the majority of their day, builds the case that these locations would be ideal to target for intervention. Interventions that change the places in which kids go could potentially be the most successful interventions in increasing youth physical activity (Hebert, Møller, Andersen, & Wedderkopp, 2015; Hills, Dengel, & Lubans, 2015; Lubans et al., 2017).

Community organizations vary in the amount and quality of physical activity that is offered. Even youth sport, which could be argued to have some of the highest percentage of time spent in MVPA, has been shown in some cases to provide less than 40% of organized group sport time spent in MVPA (Dzewaltowski, 2008; Schlechter, Rosenkranz, Milliken, and Dzewaltowski, 2016; Wickel, and Eisenmann, 2007). In order to change the way in which children interact with their environment, taking a social ecological approach to address issues

of concern should produce a shift in community well-being (Stokols, 2010). This will be done by targeting group place leaders, in order to build their capacity of providing physical activity opportunities, consistent with evidence-based practices.

Recent studies have shown the effectiveness of organized youth group place leader trainings that educate and promote the use of evidence-based practices in multiple community organizations such as youth sport (Guagliano, Schlechter, Rosenkranz, Braun, & Dzewaltowski, 2016); afterschool programs (Dzewaltowski, et al., 2010); and club organizations (Schlechter, Rosenkranz, Guagliano, & Dzewaltowski, 2018). The success of these training programs suggests that a social ecological approach of group place leader training is likely to be applicable to other community organization settings such as classrooms and any other environment where children have the opportunity to engage in PA.

Previous studies have illustrated the effectiveness of how training programs for group place leaders can increase time spent in PA, as well as decrease time spent sedentary. However, many of these studies focused on one type of community organization such as a youth club leader training, or an organized youth sport coach training (Dzewaltowski, et al., 2010; Guagliano, Schlechter, Rosenkranz, Braun, & Dzewaltowski, 2016; Schlechter, Rosenkranz, Guagliano, & Dzewaltowski, 2018). The purpose of this project is to create a training program that is generalizable enough to foster adoption among nearly any type of community organization that allows youth the opportunity to participate in PA. Yet, still being specific enough in the delivery of evidence-based practices that each individual group place leader would recognize the potential application strategies of these practices into their routine.

Training Program Intervention Structure

<u>Structure of the Training</u>

The overall framework of the group place leader training program, for all community-wide youth organizations, is comprised of two major components. The first component being a brief, approximately fifteen-minute, presentation used to engage with the group place leaders from a community's organizations. This presentation will have interactive components that serve as a form of qualitative data collection to understand how a particular community organization perceives the barriers to youth PA, as well as their ability to create change within their environment. Additionally, the initial presentation will serve as a recruitment tool, allowing opportunity for group place leaders to sign-up for further participation in the program.

The second component is a series of online modules that give a more comprehensive understanding of the actual process to improve both PA opportunity and the quality of PA delivered. It was decided that this component would be available via online platform as online materials have been shown to contain an aspect of convenience(Jang & Kim, 2014). Additionally, online training platforms produce a more widespread dissemination advantagewhen compared to their face-to-face counterparts (Lonsdale et al., 2016a; Lonsdale et al., 2016b). An online platform allows for the the group place leader to complete the modules from the comfort of their own home, or from a mobile device at their own pace. Furthermore, the online platform allows for group place leaders to revisit the material at any time, as using online modules to refresh one's memory was another attribute of online materials (Jang & Kim, 2014). Also, a study done by Chan and colleagues found that individuals who utilized the online training resources had an increase in knowledge of the course content

as well as reported an overall experience with the online platform (Chan, Mackintosh, & Dobbins, 2017). The online series is used to introduce and elaborate on the application of evidence-based practices into a group place leader's routine.

The online materials are structure around a rapid quality improvement cycle. Rapid quality improvement cycles like the Plan, Do, Study, Act (PDSA) cycle are used to provide a structured cyclical evaluation process in order to improve the quality of a system. During the 'plan' stage of PDSA the goal is to identify a portion of the system to improve. The 'do' stage is the act of changing the identified portion, while the 'study' stage observes if the change was successful. Finally, the 'act' stage is used to identify any potential modifications to advise the next round of the PDSA cycle (Taylor et al., 2013).

However, our online modules will be utilizing our own rapid quality improvement cycle known as the Investigate, Design, Practice, and Reflect (IDPR) cycle (Dzewaltowski, 2018). In context of increasing PA of a group session the 'investigate' stage of IDPR is used to investigate a leaders' existing routine to identify if there are periods of time with PA. During the 'design' phase the leader will design a new routine with inserted portions of PA that could potentially work for their group session. The 'practice' phase is for testing out the newly designed routine at the next group session. Finally the 'reflect' phase is used to create a cyclical self-assesment of how the newly designed routine was implemented, this portion of the cycle is used to inform the next 'investigate' phase in the continual improvement IDPR loop (Dzewaltowski, 2018). The main underlying difference between the PDSA and the IDPR cycles is that the PDSA cycle has the inention of taking the 'act' stage to scale. While the IDPR does not have a focus on scaling.

Recruitment Presentation and Objective

The initial fifteen-minute interactive presentation will be given in person by a designated speaker. The talk will be tacked on to the end of a pre-existing requirement for the youth group leaders (i.e., school district meeting, parks and recreation mandatory coaches meeting, etc.). It is designed this way for three main reasons. First, by working with these community organizations that already have a mandatory meeting, it will increase the number of leaders who are exposed to the presentation, rather than attempting to reach the group place leaders on an individual basis. Secondly, by keeping the presentation to a brief fifteen-minutes it will keep the audience engaged. The group place leaders are attending in order to fulfill their community organization's requirement, it is not the intent to overload them with a sense of more required work. Rather to engage with them and create a dialogue, to spark their interest in further engagement in our program. Finally, the brief length of the presentation was considered to try and reduce the burden on the organization that is allowing us to use their meeting space as a platform. We do not want to create a feeling that we are taking away from their time to convey their own message.

The specific intent of the initial presentation is to promote interest in further exploring our educational materials that cover inserting PA into their existing routine and the utilization of evidence-based practices. The presentation will allow for the group place leaders to engage in discussion to make comparisons to the opportunities they had as children to be active, and the activities the youth of today are engaging in. Furthermore, an orator that is highly qualified on the topic material will instill a sense of responsibility to take action,within the presentation attendees, to improve their community's health. This tactic touches on two recruitment

strategies shown to increase recruitment from an organizational perspective. These two strategies are to have a credible organization representative, and to have a message that is favorable in the eye of the recipient (Rynes & Barber, 1990). The primary goal of the presentation is to spark an interest in the individual leaders to examine their existing routine of how they lead their group activities. The desired outcome is for the leaders to come to the realization that they want to join the training program that we are offering, in order to optimize opportunity for PA within their sessions.

Online modules and materials

Access to the series of online modules will be granted via logging in with the email address the group place leaders signed-up with. After logging in, the group place leaders will be able to access three online modules to complete. The first is a short video, followed by two separate presentations.

Module one is a video that was created previously by individuals from Kansas State University. The intended target audience for module one of the online series is all youth group place leaders from any type of community organization. This video is used solely as an introduction to the Investigate, Design, Practice and Reflect model. The objective of this video is to allow all group place leaders to familiarize themselves with the model and form an understanding that it is a cyclical process of continual feedback and improvement on their leadership practices. The video briefly describes how group place leaders can implement the Investigate, Design, Practice into their existing routine in order to increase PA.

The second online module is a presentation, which also has a target audience of all youth group place leaders, from any type of community organization. The second module's

purpose is to elaborate on the Investigate, Design, Practice and Reflect model. The presentation segments the content into the investigate phase, the design phase, and the practice and reflect phases.

Within the investigate phase, group place leaders will be educated on how to examine their existing routine in an objective manner. Performing an audit allows for identifying structural components of their current routine, such as the objective of their group sessions, the order of their group sessions, as well as the length of time each of their group sessions last. The investigate process is intended to expose areas where group place leaders are able to insert a session with a main goal of PA. Group place leaders will be instructed to use our routine sheet, located in Appendix A of this document, as a framework guide to examine their routine.

During the design phase of the training, the facilitator describes how a group place leader would take the information gathered from the investigate phase, and mobilize it into useful information. While designing, a group place leader will modify portions of their existing routine to be able to insert a group session for PA in the previously identified area. As well as designing their routine to minimize sedentary time; for example, using water or bathroom breaks as times to set up the next activity. The design phase needs to be completed prior to the group session opportunity. This entails physically writing or typing out a newly designed routine that will be tested. The facilitator will be clear in expressing that the design phase is for exploring new ideas and trying new things.

The final phase in the second module is the practice and reflect process. Group place leaders will need to pilot the newly constructed group session routine. During this time, it is imperative that the group place leaders are observing and taking notes on different aspects of

the new routine. For example, how long was the instruction time? How long do the children need for transition times, and could this potentially be shortened? What is the level of physical movement from the group as a whole, and is the majority of the group actively moving? These types of observations will be useful after the group session has ended and the group place leader has an opportunity to reflect on the session.

The reflection portion after practicing the new routine design, in essence is the investigate phase of a new cycle in the investigate, design, practice model. During reflection time, the group place leader should examine their observations from the practice phase. For example, a leader observed during the practice phase that when the group was a given a five-minute water break, they were done and ready to start again after three minutes. The group leader may then decide when designing the next routine, to only allot three minutes for water break, freeing up two minutes to be utilized somewhere else in their routine.

Module three in the online educational series is targeted toward group place leaders who have a main focus on PA for the majority or entirety of their group session. These types of leaders potentially are physical education teachers and organized youth sport coaches. Module three has a strong emphasis on improving the quality of PA delivered through the application of evidence-based practices. Module three only introduces three evidence based practices to the group leaders. The intention for this is that by introducing more than three, leaders could potentially feel overwhelmed and not even attempt to implement any of the evidence based practies. As well as it was the author's intention to keep the modules short and engaging, by only introducing three evidence based practices this is achieveable. Also, with the modules

being on an online format, the author's realized there is always potential to add future modules

to the program, with additional evidence based practices.

Module three begins by explaining what evidence-based practices are, and then gives

examples of techniques to use that are backed by evidence to show they increase PA.

Techniques taught in module three include evidence based practices derived from the LET US

Play principles which are an evidence-based practice framework that encourages avoiding the

use of lines, elimination games, and uninvolved leaders or youth (Weaver, Webster, & Beets,

2013). Implementing strategies to avoid these three areas will reduce the time youth are

stationary, either standing in line or on the sideline after being eliminated, and will increase the

opportunities each individual has to engage in MVPA. Additionally, utilizing small sided groups

(i.e. two games of 5v5 basketball happening concurrently, while using the width of a basketball

court, rather than one game of 5v5 using a full court and 10 players sitting on the sideline) and

the entire physical space provided through the use of grids and circuits, increases the

opportunity each individual has to engage in the activity (Weaver, Webster, & Beets, 2013).

Another set of principles that is an evidence-based framework supported in this training

program is the SAAFE model. SAAFE promotes the principles that activities should be

supportive, active, autonomous, fair, and enjoyable for all participants (Lubans et al., 2017). The

SAAFE principles intent is to endorse an environment that is psychologically supportive,

promotes a skills mastery climate, and increases children's motivation through autonomy. The

fundamental aspects of these principles can be easily understood as being supportive in

leadership, maximizing the whole group's opportunity for PA, promotion of an autonomous

environment through choice, designing activities that are fair in their opportunity to achieve success, and fostering an enjoyable environment by focusing on fun (Lubans et al., 2017).

The third and final set of principles guided by an evidence-based framework, and supported in this training are the BASICS principles. BASICS operates on the fundamental components of utilizing boundaries, ASAP activities, a consistent start/stop signal, involvement of all, concise instructional cues, and supervision (Cribb, n.d.). Aspects of the BASCIS principles are to use the space you are given by creating boundaries that support small sided games such as grids and multiples courts/fields. Have ASAP activities ready such as games that need little or no instruction or equipment. As a group place leader, you should have a consistent start and stop signal that your group is aware of and knows the meaning, for example one sharp whistle signals to start an activity while two sharp whistles signals to stop immediately. Instructional cues that are concise and to the point will help your group to understand the objective of the session episode, and will shorten the time needed for instruction. And finally, supervision from the group place leader should be constant, supportive, and involved (Cribb, n.d.).

MEASUREMENTS

Adoption and implementation are measurements that will be utilized to determine the effectiveness of the program. Following the conclusion of the initial presentation, an email sign-up sheet will be circulated amongst attendees. The intended purpose of the sign-up sheet is to serve as a mechanism for attendees to express interest in receiving access to the online educational materials.

Adoption is a measurement that will be used in this program. Adoption can be defined as the proportion of individuals who are willing to initiate a program (Glasgow, Vogt, Boles,

1999). The adoption of the program will be calculated by using the number of individuals who have already previously consented to take part in the wellscapes intervention, used as the denominator. While those who voluntarily sign-up by giving an email address to receive access to the online materials will be the numerator (Glasgow, Vogt, Boles, 1999). The action of signing up for the online portion illustrates willingness to initiate this program.

Implementation is another method of measurement that will be used for this training program intervention. Implementation of the program will be calculated through observations. Once a group leader has completed the available online educational modules, it is possible to view video data that has been collected and observe the leaders. Implementation of the program will be detectable if it is possible to observe a leader actually implementing the evidence based practices that are taught within the modules, into their group sessions.

Through these measurements, there will be enough information to draw conclusions on effectiveness the program model. The reach, adoption, and impact measurements should provide insight about where modifications need to be made in the framework of the program. Furthermore, these methods will illuminate potential weaknesses in any specific aspect of our intervention.

CONCLUSION

There has been paradigm shift in recent decades to approach behavior change from a social ecological perspective (Stokols, 2010). Allowing for an understanding that the way in which individuals interact with their environment effects their actions and behaviors (Kumanyika, S., Jeffery, R.W., Morabia, A., Ritenbaugh, C., & Antipatis, V.J., (2002). This new process of understanding how social settings drive behavior produces the need to promote

evidence-based practices in places where children have opportunity for PA in order to increase percentage of time spent in MVPA and decrease time spent sedentary (Hebert, Møller, Andersen, & Wedderkopp, 2015; Hills, Dengel, & Lubans, 2015; Lubans et al., 2017).

Through searching the literature, it was evident that group place leader training interventions were successful in increasing youth PA levels (Dzewaltowski, et al., 2010; Guagliano, Schlechter, Rosenkranz, Braun, & Dzewaltowski, 2016; Schlechter, Rosenkranz, Guagliano, & Dzewaltowski, 2018). However, there was a gap in the literature that needed to be addressed. This gap included having a training program that was generalizable enough to be conducive to train group place leaders from any community organization. Additionally, the program needed to harness a convenience aspect for the individual undergoing the training program. This leader training intervention fills that gap by creating content that could be utilized by any community organization and taking the program to the group place leaders via a required attendance meeting, and placing the bulk of follow up materials online. This allows for a leader to complete the education courses at their own pace, as well as revisit them when needed.

Potential limitations to this training program include, but are not limited to, the event in which a group place leader is not in attendance at the initial presentation. As well as the group place leader not having access to the internet at their residence or forgets their login information.

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APENDIX A
Group Opportunity Routine Guide

Appendix B
Recruitment PowerPoint

Appendix C
Online Module 1
Inserting PA, and Quality Improvement Loop

Appendix D
Online Module 2
PA Quality