

The PULSE Program: A Life Skills Based Physical Activity Program for At-Risk
Adolescents

By

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Abstract

The purpose of this doctoral thesis was to develop, implement and evaluate the PULSE program, a community-based physical activity and life skills program for at-risk youth. The thesis is composed of four articles. The first paper describes the rationale and development of the PULSE program which was designed to help youth develop the skills to self-regulate and successfully perform physical activity. The second article presents a process evaluation of the PULSE program. This article examines how the youth progressed through the program with regards to the five levels of the Teaching and Social Responsibility (TPSR) model, one of the frameworks on which the PULSE program is based. A second purpose of this study was to understand the youths' perceptions of the impact of the program on these five levels. The results indicated that the program led to slight increases in the five levels of the TPSR model and the youth reported transferring the skills they learned related to the levels in their lives outside of the program. The third paper represents an outcome evaluation of the PULSE program. Results showed that youth who participated in PULSE increased their fitness, physical activity levels as well as a number of positive youth development outcomes. Finally, the fourth paper examined how the PULSE program helps support the tenets of Basic Needs Theory. The results indicated that the program successfully nurtured the three basic needs of autonomy, competence and relatedness. The overall findings suggest that the PULSE program is a practical, evidence-informed program that may help youth understand and apply life skills to be physically active as they approach adulthood, and also more generally in their lives. The current findings show promise for both Physical Activity (PA) and Positive Youth Development (PYD) outcomes but further research is needed to make causal links.

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Abbreviations

PA: Physical Activity

PYD: Positive Youth Development

TPSR: Teaching Personal Social Responsibility

LDI: Life Development Intervention

SUPER: Sports United to Promote Education and Recreation

WHO: World Health Organization

AHKC: Active Healthy Kids Canada

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Introduction

Effective and community-based youth physical activity (PA) interventions are required to reverse the trend toward an inactive lifestyle and resulting health consequences (Pate, Davis, Robinson, Stone, McKenzie, & Young, 2006; Glasgow, 2008; Strong et al., 2005; Maziak, Ward, & Stockton, 2008; Public Health Agency of Canada, 2010; Salmon, Booth, Phongsavan, Murphy, & Timperio, 2007). There are multiple effective targets for interventions to prevent and reverse sedentary behaviour; including policy, infrastructure, and interventions (Fox, 2004; World Health Organization, 2004). This thesis involved the development of a community-based PA and life skills program that targeted at-risk youth called PULSE. The following literature review will focus on the research related to positive youth development, programs designed and implemented for children and youth in community settings, youth PA, psychosocial factors of PA and the potential utility of integrating Positive Youth Development (PYD) approaches into PA interventions that target youth. The overall purpose of the current thesis was to develop, implement and evaluate the perceived impact of participating in the PULSE program.

Review of Literature

This review of literature covers the relevant subject areas regarding the PULSE program in seven sections. The first five sections review PA and PYD, beginning with PYD, PYD programming, youth PA, community youth PA, and finally a section titled PYD and PA. Each section gives an overview of the area and highlights specific literature that is relevant to the PULSE program. Since the PULSE program can be considered both youth development and PA programming these sections of the review highlight the common ground between these potentially distinct subject areas. The sixth

section provides an overview of the program frameworks on which PULSE was based. Finally, this literature review closes by presenting the purpose and design of the research.

Positive Youth Development

PYD has been defined as the “development of personal skills or assets, including cognitive, social, emotional, and intellectual qualities necessary for youth to become successfully functioning members of society” (Weiss & Wiese-Bjornstal, 2009, p. 1). This field of study arose as a reaction to what had become a dominant approach to youth programming; standardized prevention programs focused on individual maladaptive behaviours (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Damon, 2004). Practitioners and researchers began to realize that it was not optimal to attempt to only remediate or avoid dysfunctional behaviours (e.g. drug and alcohol abuse, violent behaviour, precocious sexual activity), as decreasing negative behaviours is not equal to optimal development, or what is often called thriving. As a result, subsequent programming and research began to focus on the total development of youth by providing opportunities for optimal development (Catalano et al., 2002a; Lerner & Benson, 2003; Lerner, Lerner, Almerigi, Theokas, & Lerner, 2005; Lerner, von Eye, Lerner, Lewin-Bizan, & Bowers, 2010; Pittman, Irby, & Ferber, 2001). Moreover, this area of research and practice has become quite dominant in work with youth as evidenced by the number of fields of study that have employed PYD approaches such as education, public policy development, social work, sport and sport pedagogy, and developmental psychology (Berkowitz, Sherblom, Bier, & Battititch, 2006; Catalano et al., 2002a; Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002; Danish, 2000; Gavin, Catalano, David-Ferdon, Gloppen, & Markham, 2010; Gould & Carson, 2008; Geldhof, Bowers, &

Lerner, 2013).

At-Risk Youth

At-risk youth, as the term denotes, are especially vulnerable to not achieving optimal development (World Health Organization (WHO), 2006). More specifically, at-risk youth have been identified as children and adolescents (ages 6-18) who are at a higher risk of unhealthy, antisocial, and risky behaviours due to varying combinations of poverty (low socioeconomic status), risky peers, and lack of access to services and facilities (WHO, 2006). Stated another way, at-risk youth have a large amount of quantifiable inequality with normative youth. For example, Canadian samples of at-risk youth have been shown to be more likely to experience health issues such as obesity, diabetes, drug and alcohol addiction, early pregnancy, violent and abusive behaviour, and general injuries compared to their lower risk peers (Collingwood, 1997; Flynn, 2008; Pickett, Garner, Boyce, & King, 2002; Public Health Agency of Canada, 2010; Freeman, King, Kuntsche, & Pickett, 2011).

In light of these social and personal health consequences, attempts to help at-risk youth have included remediation through after-school programs, in-school focused programs, alternative school programs, increased contact with social, physical, and mental health resources, and diversion programs for young offenders with the express intention of minimizing harm and/or providing as many opportunities for development as possible (Flynn, 2008; Hastie & Sharpe, 1999; Hellison, 2000; Hellison, Martinek, & Cutforth, D. Hellison, Martinek, & Cutforth, 1996). More recently, many programs for at-risk youth have incorporated a PYD approach, including traditional prevention programs (Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002b; Reid & Tremblay,

1994; Romeo & Kelley, 2009; Zimmerman, Phelps, & Lerner, 2008).

Positive Youth Development Programming

In recent years, a number of evaluations and reports on best practices for programs explicitly addressing PYD have been completed. The overall findings of these evaluations was that PYD programming can have a moderate to strong effect on the positive development of program participants, and that there are essential political, community, and program provider characteristics that contribute or detract from successful implementation of PYD programming (Catalano et al., 2002a; Durlak et al., 2007; Durlak, Weissberg, & Pachan, 2010).

The extensive review of PYD programs by Catalano et al. (2002a) offers many insights and recommendations for best practices. This review examined 77 programs and found that these programs documented “improvements in interpersonal skills, quality of peer and adult relationships, self-control, problem solving, cognitive competencies, self-efficacy, commitment to schooling, and academic achievement.”(p. 7). Catalano et al. concluded that of the 77 PYD programs reviewed, 26 were deemed effective with the remainder being considered ineffective or not having an extensive enough evaluation for inclusion. In discussing their overall findings Catalano and colleagues stressed the importance of a number of program practices that help ensure effectiveness such as: (1) a focus on strengthening social, emotional, behavioral, cognitive, and/or moral competencies; (2) building self-efficacy; (3) helping shape messages from family and community about clear standards for youth behaviour, (4) increasing opportunities for healthy bonding with adults, peers and younger children; (5) expanding opportunities of recognition for youth; (6) providing structure and consistency in program delivery; and

(7) intervening with youth for at least nine months or more.

It should be noted that this list is not meant to dictate the program characteristics that every PYD program must incorporate, though Catalano et al. (2002a) assert that at least one of these strategies should be emphasized within a PYD program. The authors also mentioned that successful community-based programs used the community's resources and infrastructure to enhance the health and well-being of youth. The PULSE program integrated a number of these strategies including building social and behavior competencies, increasing healthy bonding with adults, providing structure and consistency in program delivery and using resources from within the community to deliver the program.

Another review of PYD programming was conducted by Durlak and Weissberg (2007). This review focused on social and emotional learning and the conclusions were very similar to those of Catalano and colleagues (2002a). However, Durlak and colleagues further emphasized the importance of the community setting for youth focused interventions and the importance of evaluating community-based programs. In a second review focusing exclusively on after-school programs Durlak, Weissberg and Pachan (2010) found that “in general, after-school programs produce results equal to or better than those produced by other types of interventions for youth”(p. 7). More specifically, this review analyzed 68 after-school programs and concluded that the programs can lead to increases in positive self-perceptions, bonding to school, positive social behaviors, school grades, and achievement test scores while also reducing risk or health compromising behaviors (Durlak et al., 2010). As a result of their review, Durlak and colleagues recommend that programs adopt practices to ensure sequenced, active,

focused, and explicit (SAFE) programming to optimize the effectiveness of after-school programming. They explain that a substantial amount of research has shown that when leaders of youth programs use a step-by-step approach to teaching skills (sequenced), place an emphasis on active rather than passive forms of learning to help youth practice the skills they are learning (active), focus on intentional skills training meaning there is specific time and attention placed on skill development (focused), and have clear goals in mind (explicit) then the programs are more likely to have a positive impact (Arthur et al. 1998; Bond and Hauf 2004; Durlak 1997; Dusenbury & Falco 1995; Salas and Cannon-Bowers 2001).

The PULSE program incorporated practices consistent with SAFE as laid out by Durlak and colleagues (2010). When the leaders of the PULSE program taught the PA skills to the youth they did so by first explaining the skill, then describing how the skill is performed; this was followed by a demonstration and then the youth were provided the opportunity to practice the skill. The leaders also placed a very heavy emphasis on active forms of learning by having them engage in practicing the skills they were learning and by providing leadership opportunities for the youth to lead warm-ups and skill demonstrations. Furthermore, the primary structure of PULSE was to intentionally teach youth both PA skills and life skills and therefore the majority of the time within the PULSE program was devoted to teaching these skills. Finally, the PULSE program, had the explicit goal of helping youth develop life skills focused on self-regulation needed to be able to engage in PA independently.

Youth Physical Activity

Youth PA rates and fitness have been declining in Canadian youth (Active Healthy

Kids Canada (AHKC), 2010; AHKC, 2011; Tomkinson & Olds, 2007). In addition, direct comparison of youth aged 6 to 19 years in 1981, to age and sex-matched youth in 2007, has also shown that fitness levels have declined significantly (Tremblay et al., 2010). A recent Active Healthy Kids Canada (2011) report card identified the after-school period as a critical time to increase PA as the research shows youth are highly inactive between 3 p.m. and 6 p.m. The report states that youth are getting only fourteen minutes of moderate to vigorous-intensity PA in this 3-hour period (Active Healthy Kids Canada, 2011). Therefore, this may be an optimal time to offer PA interventions for youth.

Outlined in the 2009 Active Healthy Kids Canada report card were barriers related to participation in after-school programs which included difficulties with transportation to and from programs and a lack of interest in school staff and administrators to provide after-school opportunities focused on PA. One potential solution identified by Active Healthy Kids Canada (2009) was to initiate integrated school and community-based programs where recreation leaders come into schools and lead after-school programs in the school or help to increase access to community centres that have PA facilities.

The findings in this report also highlight that youth from low socio-economic families have less access to organized sport and PA. Seventy-two percent of parents reported that their children do not have access to after-school programs and a survey of community-based programs also revealed that less than fifty percent of such programs have PA as a primary component, or target adolescents (Active Healthy Kids Canada, 2011). The PULSE program was a response to these gaps in programming by developing a community-based PA program offered after-school to and specifically targeted at-risk

youth. The youth were recruited from local schools and the programs were implemented at local community fitness facilities that were within walking distance from the schools.

Community-Based Youth PA Programming

There is a growing need to address youth PA in the community as, to date, the knowledge translation from youth PA research to practice in the community is weak as in other public health domains (Glasgow, Klesges, Dzewaltowski, Bull, & Eastbrooks, 2004; Klesges, Dzewaltowski, & Glasgow, 2008; Kelly, Matthews, & Foster, 2012; Peters, Tran, & Adam, 2013). The differences between youth PA research trials and community practice include but are not limited to funding, qualified staff, and evaluation methods (Peters et al., 2013). With regards to funding research trials are often funded while community-based programs run on little or no funds. In relation to staff, research trials often feature a high ratio of participants to program leaders whose qualifications and pay rate, because of research funding, would not be sustainable in a community-based program. In regards to evaluation, researchers need precise data that corresponds primarily with their research questions while community programs, if they evaluate, often focus on participant satisfaction or information that can be feasibly demonstrated to their funders and therefore knowledge of and administration of research-validated measures are potentially non-existent (Peters et al., 2013).

Research on community-based PA programming may provide an opportunity for researchers to use their academic resources in concert with community programming to further enhance youth PA and to also help further knowledge translation to these applied settings. Effectively, community-based youth PA interventions, like the PULSE program, that represent a collaboration between researchers and the community can help close the

gap related to the understanding effective implementation practices as well as program outcomes for community-based PA programming.

The World Health Organization (WHO; 2009) compiled a report on effective international community-based programs for improving PA and nutrition practices. It should be noted that this broad report included PA programs targeting both youth and adults and to date there are no WHO reports focused on the evaluation of community-based PA programs for youth exclusively. The report indicated that community-based PA programs can lead to a number of positive outcomes including psychosocial changes, behavioural changes, physical and clinical changes. The programs reported to be successful were those that had stakeholder buy-in, adapted the program to suit local needs, and were comprehensive in that they intervened at more than one level (e.g., individual and family or individual and community). Therefore, it appears that for community PA interventions ensuring stakeholder buy-in, adapting the program to the needs of its participants and targeting an individual within a community setting is integral to success.

A more recent WHO publication (Kelly, Matthews, Foster, & Young, 2012) provided a checklist for engaging youth in PA interventions. This checklist was developed through consultation with experts and youth delegates to the Children's Environment and Health Action Plan for Europe. The resulting checklist concentrated on three main areas: the physical environment, the social environment, and the experience of the youth. Below is an overview of the three areas and under each area is a list of components to consider, in order of importance. With regards to the physical environment, recommendations include ease of access to the program, keeping costs of

the program low, inclusion of outdoor activities, avoiding areas of polluted air, inclusion of walking and cycling activities, ensuring a high quality of equipment and facilities, and to use sport clubs if possible. In terms of the social environment the WHO recommends promoting positive attitudes, placing a focus on personal achievement, integrating mentors when possible, including opportunities to socialize and develop friendships, creating an awareness of the benefits of being healthy, providing a choice of activities, and including national activities as well as famous people if possible. Finally, related to the experience of the youth, the WHO recommends focusing on increasing independence and self-confidence, helping youth learn skills to be able to relax, avoiding integrating too many activities which could lead to the possibility of injuries, and ensuring the activities integrated into the program are fun and enjoyable (Kelly et al., 2012). The PULSE worked to integrate as many of these aspects as possible. These included implementing the program in a community facility that was easy for the youth to access, was free and had good equipment and facilities, placing an importance on personal improvement by using workbooks (see Appendix A), providing opportunities to socialize with peers and mentors/leaders, helping youth learn about the importance of being healthy as well as providing a choice of activities, increasing the youths independence and confidence, and including activities that were enjoyable for the youth.

Positive Youth Development and Youth Physical Activity

Apart from being a preferred avenue for enhancing youth development, PYD may also have the potential to increase the effectiveness of interventions designed to increase youth PA. After-school settings and programs are already tasked with facilitating the development of physically, mentally, and socially healthy children and youth (Durlak et

al., 2010; McDonough, Ullrich-French, Anderson-Butcher, Amorose, & Riley, 2012). Hence, PA interventions that include aspects of PYD could align these programs with the values and goals of these settings and programs. Moreover, PA interventions that adopt this shift in focus, similar to the recent trend in youth programming, would result in researchers and practitioners not only attempting to help youth avoid the negative consequences of an inactive lifestyle but to help create contexts in which youth have the opportunity to develop life skills and PA skills that enhance their health and well-being. The focus in such programs would be to form relationships with caring adults, intentionally teach life skills related to self-regulation of PA, and provide opportunities for youth to practice these skills. Furthermore, these self-regulation skills will not only help in changing health behaviour in the short-term, but could enable youth to engage in healthy behaviours for a lifetime and thus contribute to them becoming healthy, flourishing young adults.

Life Skills

Danish and colleagues have consistently advocated, since the early 80's, the need to assist youth, particularly those at-risk, in the acquisition of life skills (Danish, D'Augelli, & Ginsberg, 1984; Danish & Forneris, 2006; Danish, Smyer, & Nowak, 1980; Danish et al., 1993; Danish, Taylor, & Fazio, 2003; Danish & Forneris, 2008). The WHO (1999; 2003) defines life skills as abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life. Danish and colleagues define life skills as skills that enable individuals to succeed in the different environments in which they live, such as school, home and in their neighbourhoods with their peer groups (Danish & D'Augelli, 1983; Danish et al., 1993; Danish, 1996; Danish,

Forneris, Hodge, & Heke, 2004; Theokas et al., 2008; Hodge, Danish, & Martin, 2013). Although these definitions slightly differ they both speak to the development of skills that help people successfully negotiate the challenges and experiences they face in their daily lives. The rationale behind teaching life skills in programming developed by Danish and colleagues is that youth are active learners, and therefore learn best by doing rather than by talking, and that explicitly addressing and applying skills is a necessary component of the acquisition and use of life skills in different contexts (Danish & D'Augelli, 1983; Hodge, Danish, & Martin, 2013).

One widely implemented life skills program which greatly influenced the development of PULSE is the Sports United to Promote Education and Recreation (SUPER) program. The SUPER program utilizes trained university students and/or community leaders to deliver life skills workshops primarily within sport and recreation contexts (Danish & Forneris, 2008). The program is workshop-based and each workshop consists of three primary components: learning a physical skill related to a sport, learning a life skill, and a final component in where the youth are provided time to engage in sport with emphasis placed on the life skill learned that day. The core life skills taught in the program are goal setting, problem solving, overcoming obstacles, and seeking social support (Danish & Forneris, 2008).

This program has been implemented and evaluated internationally and these evaluations showed that the SUPER program has led to increased life skill knowledge, increased self-efficacy for goal setting in and outside of sport, increased problem solving ability, increased positive thinking, increased self-esteem, increased intrinsic and self-determined motivation and improvement in physical sport skills (Brunelle, Danish, &

Forneris, 2007; Goudas, Dermitzaki, Leondari, & Danish, 2006; Goudas & Giannoudis, 2008; Kolovelonis, Goudas, Dimitriou, & Gerodimos, 2006; Papacharisis, Goudas, Danish, & Theodorakis, 2005; Papacharisis & Goudas, 2005; Theokas, Danish, Hodge, Heke & Forneris., 2008). Due to the success of SUPER, the PULSE program incorporated the general structure of PULSE. A more detailed discussion of how the life skills in PULSE incorporated SUPER program material is found below under program frameworks.

Self-Regulation

Regulation refers to working to keep something regular despite potential disruption (Vancouver, 2000). Vancouver explains that, “for a system to regulate a variable itself (e.g. self-regulation), the desired state must be internally represented within the system” (p. 304). In psychology, goals are the term used to represent desired states (Austin & Vancouver, 1996) and Kanfer (1990) recognized that the goal is the most common and central component in various theories of self-regulation.

There is extensive agreement that self-regulation is important for healthy positive functioning (Zimmerman, 2000). However, there is disagreement regarding how it is defined and as a result a number of definitions exist. For the purposes of this research we use the definition proposed by Maes and Gebhardt (2000) who discuss self-regulation in relation to health behavior. They defined self-regulation as “a sequence of actions and/or steering processes intended to attain a personal goal” (Maes & Gebhardt, 2000, p. 345). This definition recognizes that self-regulation is a process that consists of the individual putting forth effort to regulate or govern his or her own behavior over time and across contexts to achieve their individual goals.

Self-regulation is an emerging factor in both PA and PYD research. One study involving adults that examined the social cognitive determinants of PA behavior found that self-regulation was the strongest contributor to PA behavior (Anderson, Wojcik, Winett, & Williams, 2006). In addition, in a recent meta-analysis Rhodes and Bruijn (2013) recognized that given the existing gap between the intention to be active and actually being active, research exploring the role of self-regulation in PA behavior is warranted. Given that this concept is relatively new, very little research has been conducted examining self-regulation in youth PA. However, one study examining a PA program called MyFit that targeted middle school students found that youth can develop and increase the use self-regulation skills in a school-based PA intervention (Grim, Petosa, Hertz & Hunt, 2013).

With regards to PYD, evidence from a large scale multi-stage longitudinal evaluation of youth development has identified the importance of self-regulation, as conceptualized through the Selection, Optimization, and Compensation meta-model, in understanding positive youth developmental outcomes (Baltes, Reese, & Lipsett, 1980; Urban, Lewin-Bizan, & Lerner, 2010; Lewin-Bizan, Lynch, Fay, Schmid, McPherran, Lerner, & Lerner, 2010; v, 2010). Through the use of this meta-model the researchers have shown that there are three factors of self-regulation that are positively correlated with PYD and negatively associated with depressive symptoms, substance use, and delinquency at school (Gestsdottir et al., 2010). These three factors are based on the process of setting and achieving goals. The first factor is elective selection which involves actively seeking out goal areas and placing these goal areas into a hierarchy (e.g. being active, academic work, socializing with friends) and being able to continue to work

towards goals when there is the presence of fewer choices (e.g. choosing to concentrate on basketball as hockey participation becomes too expensive). The second factor is optimization which entails understanding the gap between one's current state and their goals and subsequently seeking internal and external resources to close that gap (e.g. seeking out a coach to further develop particular skills). The third and final factor is compensation which involves overcoming obstacles. (e.g., when faced with an obstacle devising a different strategy to achieve a goal; Gestsdotir et al., 2010).

Given that the Selection, Optimization, and Compensation model has been tested with youth to understand PYD outcomes and is consistent with the definition of self-regulation proposed by Maes and Gebhardt (2000), as it recognizes a number of actions or processes that can help individuals achieve their goals, it was included in this research as a measure of self-regulation.

Program Frameworks

To develop a comprehensive PA intervention that integrated life skills and self-regulation skills into a PA intervention, two PYD program frameworks were combined to develop PULSE. These frameworks were the Life Development Intervention (LDI; Danish & D'Augelli, 1980; Hodge & Danish, 1999) and the Teaching Personal and Social Responsibility (TPSR) Model (Hellison, 1995, 2003, 2011). This integration is a unique contribution of this research. Although the integration of these two program frameworks has been advocated for by researchers (Holt, 2008), it has not been done in youth programming or research to date. In addition, these two program frameworks are both community-based and primarily target at-risk youth (Hodge & Danish, 1999). The following section will provide an overview of these two program frameworks.

Life Development Intervention Framework

The LDI is based on a life-span human development perspective within which the major assumption is an emphasis on continuous growth and change (Danish & D'Augelli, 1980; Hodge & Danish, 1999). The LDI recognizes that change can disrupt routines and relationships and may result in increased stress. The LDI considers change resulting from life situations as critical life events and recognizes that individuals will experience many of these critical life events throughout their life. For example, adolescents are at an age where they are experiencing a number of concurrent and potentially stressful life changes with events such as the onset of puberty, transitions from elementary school to middle school or high school, and an expanding peer group that becomes more influential on behaviour and values (Crockett & Petersen, 1993; Petersen & Hamburg, 1989).

Although these changes in one's life may result in challenges or crises the results do not necessarily have to be negative (Baltes, Reese, & Lipsett, 1980; Danish, Smyer, & Nowak, 1980). For example, an individual's reaction to a critical life event is dependent on the resources the individual has prior to the event, the level of preparation for the event, and the past history in dealing with similar events (Danish & D'Augelli, 1983). The specific goal of LDI is to enhance personal resources and competence for dealing with critical life by teaching life skills. As a result, the LDI framework integrates the teaching of life skills to help participants to optimize (as opposed to remediate) physical or psychological development, so that the individual can better deal constructively with critical life events (Danish et al., 1993). Consequently, life skills programs such as SUPER are grounded in the LDI framework (Danish, D'Augelli & Ginsberg, 1984; Danish, Petitpas & Hale, 1993).

More recently, Hodge, Danish & Martin (2012) have advocated for the integration of Basic Needs Theory, a sub-theory of Self-Determination Theory into the LDI framework. Basic Needs Theory postulates that individuals have innate psychological needs that when fulfilled lead to increased optimal psychological functioning, and intrinsic motivation (Deci, Ryan, & Williams, 1996; Ryan & Deci, 2002). Basic Needs Theory outlines three psychological needs: autonomy, competence, and relatedness. Hodge et al. (2012), state that life skills interventions may already be need supportive despite a lack of explicit focus on need support. For example, autonomy is defined as having a sense of control, self-direction and volition over one's behaviour (Ryan & Deci, 2000). In life skill programs, such as SUPER, the focus is on having youth think about and set their own goals. Furthermore, the main characteristic taught about goal setting is that the goal has to be important to you and that it has to be under your control. Therefore, it is plausible that this approach to goal setting may lead to an increased sense of autonomy. Competence refers to individuals feeling effective in their interactions with the social environment and experiencing opportunities to practice and express their capacities (Deci et al., 1996; Ryan & Deci, 2000). In life skills programs like SUPER, the youth work towards achieving their goals which may lead to an increased sense of accomplishment. The youth are also taught problem solving skills to help them overcome barriers they may face in the process of achieving goals and there is also a workshop specifically on developing confidence. Lastly, relatedness refers to having a sense of belonging both with other individuals and with one's community, feeling connected to others, and caring for and being cared for by others (Ryan & Deci, 2002). Within life skills programs like SUPER program, the youth learn about how to seek social support

and develop a dream team of individuals within their communities that can help them achieve their goals and most importantly they have the opportunity to develop supportive relationships with program leaders and other youth in the program. However, while this emerging integration of Basic Needs Theory into the LDI, to date, no evaluation has overtly examined whether the three psychological needs can be supported in a community-based PA and life skills programs.

As mentioned above, the PULSE program is a PA intervention. Therefore, it is important to also consider the research that has examined the tenets of Basic Needs Theory and PA. Relatively little research has looked at this relationship with youth. However, the research that has been conducted has shown that needs support is positively related to intrinsic motivation and positive affect and that task-involving climates are perceived as needs supportive (Standage, Duda & Ntoumanis, 2005; Quested & Duda, 2010). The study by Standage et al. surveyed 950 British secondary school students regarding their perception of need support and subsequent PA motivation in their physical education class. They found that the three psychological needs of autonomy, competence and relatedness strongly predicted intrinsic motivation towards physical education. In another study, Quested and Duda examined relationships between perceptions of the social environment of dance schools, basic needs satisfaction, and dancer's well-being. The results showed that task-mastery environments predicted need satisfaction while ego-involving climates were negatively related to competence and relatedness. Furthermore, needs satisfaction positively predicted positive affect.

In sum, there is a lack of research examining whether life skills programming grounded in the LDI framework can support the three basic psychological needs of

autonomy, competence and relatedness and little research in youth PA and needs support. Therefore, research examining whether a community-based PA and life skills program for youth, such as PULSE, can support the basic needs is warranted.

Teaching Personal and Social Responsibility

The second program framework on which PULSE is based is the TPSR model. TPSR was developed explicitly from Hellison's (1995, 2003) work in settings with at-risk youth, namely after-school sport programming and physical education in urban Chicago. TPSR focuses on the gradual empowerment of youth by focusing on five main components or levels of responsibility (Hellison, Martinek, & Walsh, 2008). The five levels of the TPSR model include: (1) Personal Responsibility or Self-Control; (2) Effort; (3) Self-Coaching; (4) Leadership; and (5) Transference. Each of these five levels arose as practical programming guidelines that have been shown to lead to positive outcomes for youth (Hellison & Walsh, 2002; Martinek, Schilling, & Hellison, 2006; Walsh, Ozaeta, & Wright, 2010). Personal Responsibility or Self-control refers to the ability to control one's behaviour and conduct, effort refers to participants ability to apply themselves to a given task, self-coaching refers to the ability to improve in a chosen area using goal setting and planned practice, leadership refers to the ability to direct a group towards an agreed upon goal, and transference is a second-order latent variable referring to the ability to use the skills outlined above in contexts outside of the program (e.g., school) (Hellison & Walsh, 2002; Martinek, Schilling, & Johnson, 2001).

To achieve these objectives the TPSR model utilizes a specific program structure. Each session of a TPSR program uses the following format. The first 5-10 minutes of the session is set aside for relational time, a time where leaders check in with the youth to see

how things are going in their lives. This relational time is then followed by an awareness talk. The awareness talk addresses the five different levels outlined above. This time can also be devoted to teaching other relevant life skills, such as those outlined above. The awareness talk is followed by the PA plan which is time that the youth have to engage in the sport or the PA that the program is built upon. The PA plan is then followed by the group debrief meeting where the leaders discuss with the youth progress that was made in the program that day or any challenges or difficulties faced. Finally, at the end of the group debrief the youth take a minute to reflect and rate how well they did that day in terms of personal responsibility, effort, self-coaching, and leadership.

A number of studies have examined the impact of TPSR programming on youth and have found positive outcomes including increases in personal and social responsibility, increased communication and positive relationships with adults and authority, increased academic achievement, decreased rates of school suspension, and the ability to transfer the levels outside of the program (Buckle, Walsh, & Veri, 2011; Hellison & Walsh, 2002; Martinek, McLaughlin & Schilling, 1999; Walsh, Ozaeta & Wright (2010).

In sum, although many researchers conclude that TPSR is an exemplary youth program framework (Escartí, Gutiérrez, Pascual, & Marín Suelves, 2010; Holt, Tink, Mandigo, & Fox, 2008; Wright & Li, 2009) it has been most extensively used in the context of physical education and sport. Further research is needed to test the extent to which TPSR is a viable program option in other program settings for at-risk youth, such as community-based PA programming.

Research Purpose and Design

The purpose of this research was to develop, implement, and evaluate the PULSE program, a community-based PA and life skills program for at-risk youth. This research was funded by the Ontario Trillium Foundation and represents collaboration between community (local fitness facilities as well as urban and priority schools) and research partners.

The original design proposed for this research was a quasi-experimental design using an attention wait-list control group (e.g., meeting with the youth once a month to have a healthy active session of discussing healthy eating and playing a few games). However, after experiencing immense difficulty in recruiting and retaining youth in this control group it was decided to focus resources on implementing and evaluating the perceived impact of PULSE using pre and post quantitative and qualitative methods with the youth who participated in the program.

In their review of implementation science conducted for the WHO, Peters and colleagues (2013) discuss specific methodologies for evaluating health-related interventions. One of their recommendations was to use effectiveness-implementation hybrid trials. Effectiveness-implementation hybrid methodologies allow the researcher to develop interventions in real-world settings and evaluate both the participant responses to the intervention and the acceptability of the implementation. In addition, Peters et al., state that effectiveness-implementation hybrid trials also discuss the importance of using these types of methodologies for enhancing knowledge translation. Curran and colleagues (Curran, Bauer Mittman, Pyne & Stetler, 2012) outline three types of effectiveness-implementation hybrid designs that can be used to examine health programs and this thesis used Type 1 which is described below:

Type 1 designs test the effects of a health intervention on relevant outcomes while observing and gathering information on implementation. In this kind of research patient functioning or symptoms in response to a health intervention are measured, while at the same time the feasibility and acceptability of the implementation approach taken is evaluated through qualitative, process-oriented, or mixed-methods. (p. 47)

The evaluation of the PULSE program used a combination of quantitative and qualitative methods to examine both the participant's experience in the program, that allowed for an understanding of the acceptability of the program, as well as program outcomes. This thesis is composed of four articles which are described below. Article 1 provides the rationale for developing PULSE along with a detailed description of the program. Article 2 focuses on understanding the potential for using the TPSR model in a PA program by examining both processes and perceived impact of the PULSE program on the five TPSR levels. Article 3 examines the perceived impact of the PULSE program on fitness, PA levels, personal and social responsibility and self-regulation. Finally, Article 4 addresses the emerging belief that life skills programming, in particular a PA and life skills program, can support the development of the three psychological needs outlined in Basic Needs Theory.

The PULSE Program: A Detailed Description

As mentioned above one of the unique contributions of the current research is combining aspects of the TPSR and LDI, specifically the SUPER program. These program frameworks are considered complimentary as they both utilize explicit life skill programming to help youth develop as socially and individually competent adolescents (Danish & Hodge, 2000; Holt, 2008). As mentioned previously, TPSR programming concentrates on developing four life skill areas referred to as levels (e.g. self-control, effort, self-coaching, and leadership while also working to help youth transfer these skills into other areas of their life; Hellison, 2003; Martinek, & Hellison, 1998) and to implement the teaching of these levels TPSR uses a particular session structure (relational time, awareness talk, activity time, and session debrief). LDI programming, and SUPER specifically use a life skills workshop type structure to teach and target explicit life skills (e.g. goal setting, overcoming barriers, seeking help from other, managing emotions) (Brunelle, Danish & Forneris, 2007; Goudas, Dermitzaki, Leondari, & Danish, 2006; Goudas & Giannoudis, 2008; Kolovelonis, Goudas, Dimitriou, & Gerodimos, 2006; Papacharisis, Goudas, Danish, & Theodorakis, 2005).

The PULSE program utilized these varied aspects of these two approaches. More specifically, the PULSE program remained faithful to the TPSR session structure by beginning with relational time to check in with the youth. This was then followed by the awareness talk which was devoted to working with youth on developing the levels of the TPSR model (self-control, effort, self-coaching, leadership and transferring these levels to life outside of the program). In previous literature there is a lack of specific details or activities on how the different levels can be taught to the youth. As a result, workshop

activities from SUPER that supported the TPSR levels were integrated to help leaders have resources for teaching the levels. For example, when working with youth on self-control specific activities from the emotional regulation workshop in SUPER were implemented while when working with the youth on self-coaching specific activities from the goal setting workshops in SUPER were implemented. The awareness talk was followed by activity time when the youth participated in a variety of physical activities with a focus on providing the opportunity for the youth participants to apply the TPSR levels. For example, in the case of leadership there were a number of opportunities to enact leadership. First, the youth were encouraged to take turns leading the group through a warm-up routine at the start of the activity time. Second, throughout the activity time the youth were reminded and encouraged to be leaders by monitoring and helping their peers to conducting themselves as respectful members of the fitness facility (by replacing weights, acting appropriately, cleaning equipment after use, and ensuring that you are not interfering with other members' exercise routine) and by helping the group to manage their time between resistance and aerobic training. Third, the program leaders provided opportunities and therefore the youth were encouraged to assist one other participant through their workout by encouraging them and applying the lessons learned regarding the proper form for (predominantly) resistance training- this option was especially relevant for participants who were reluctant to lead the entire group and would feel more comfortable working one on one with another participant.

Finally, a short debrief was completed to address the successes and the challenges of the session. In effect, the PULSE program maintained the TPSR levels and program session structure, and reinforced them through a specific activities drawn from the

SUPER program. The goal of this integration was to combine the explicitness and specificity of the SUPER program life skill material with the structure and intuitive progressive levels and enabling language of the TPSR program and the researchers felt that this integration:

1. Allowed non-TPSR specialist program leaders utilize the intuitive check-in, rapport building structure, and vocabulary from TPSR while offering them clear and structured activities when teaching the levels.
2. Gave the researchers the ability to structure the life skill material that could be easily referenced in relation to the stated goals of the participant as goals and other specific life skill sessions were recorded in the workbook.
3. Allowed the researchers to structure the sequence of life skills material so that the progression of activities was in keeping with the program material relating to PA and in keeping with considerations of establishing a baseline of respectful, engaged behaviour within the PULSE program.

The ultimate goal of the PULSE program is to help youth develop life skills that would help them feel confident in self-regulating their PA. To accomplish this goal PULSE was composed of three phases. The first phase was eight weeks in length and consisted primarily of the structure programming described above (the youth attended two program sessions per week for a total of 16 program sessions). The second phase of the program was six weeks in length and consisted of a once per week check-in that referenced material taught in phase one but did not introduce new material. The objective of this phase was to provide greater independence to the youth with regards to their PA. When the youth finished phase one they were provided a membership to the fitness

facility in which the program was implemented so that they could attend on their own. However, it was believed that support would be helpful to the youth as they made this transition to independence and therefore the program leaders were available once per week to help the youth (e.g., choosing a new PA goal). The third phase of the program had no structured programming but was meant to allow the youth to be completely independent and self-directing in their PA within the fitness facility and using the membership provided by the program.

Since this was the first evaluation for the PULSE program as structured above, and there are potential factors that are out of the control or direct influence of the program as youth exercise independently (e.g. adolescence is a period of declining PA, youth may have family and paid-work commitments that interfere with PA) we limited the evaluation to the first phase of programming. In this way we hoped to gain a clearer understanding of how the program functions before beginning to unravel the effects of semi-independent or completely independent PA in phases two and three of the program.

Finally, it is important to provide an understanding of what was meant by at-risk youth for this particular research. The program participants for the PULSE program in the current papers were directly recruited from Urban and Priority Schools in the province of Ontario. Urban and Priority Schools are specifically identified schools that are described by the government of Ontario in the following way: “There are high schools in urban centres across Ontario facing challenges such as poverty, criminal and gang activity, and a lack of community resources, such as recreation centres or libraries.” (Ontario Ministry of Education, 2012). In engaging with these schools for the purpose of the PULSE program the researchers attempted to target the program to at-risk youth within these

schools by establishing and maintaining contact with school administrators and guidance counsellors. The researchers specifically attempted to ensure that participants who were recruited to the program were seen as youth who would benefit from the program. Following these focused recruitment sessions the program was opened up to all participants through recruitment such as advertisements for the program in the school setting and visits by program leaders to discuss the program with interested students. The students that ended up participating in the program were, speaking anecdotally, of varying ranges of at-risk in terms of socioeconomic status, risky peers, or impoverished home environments. It was considered unnecessary to inquire about specific demographic, socioeconomic, or at-risk status with the youth, as the express intention of the program was to help youth at-risk as expressed through the identification of the school as high risk and through youth referred to the program through administrators as opposed to grading youth by at-risk factors or further establishing that risk factors are related to PA or life skill outcomes.

Article One

Blind Spots in the Canadian Physical Activity Guidelines for Youth: A Position Paper on
How Community Programming Could Help Youth Transition to Self-Regulated
Physically Activity in Adulthood

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Abstract

Physical activity guidelines have become a regular part of the discussion in public health, education, and public policy. This paper examines a seeming blind spot in the Canadian physical activity guidelines: the process by which adolescents become goal focused, independent adult exercisers able to self-regulate their physical activity. The implicit assumptions regarding the development of self-regulation embedded within the Canadian Physical Activity guidelines and potential avenues for assisting youth transition to independent, voluntary physical activity in adulthood are examined in detail. The PULSE program is described as a preliminary example of a program focusing on self-regulation in physical activity for adolescents (age twelve to seventeen). Recommendations for focusing on facilitating the transfer of responsibility from the education system, parents, and government systems to emerging, self-directing young adults are presented.

Introduction

With recent trends in obesity indicating a looming worldwide public health emergency (World Health Organization (WHO), 2010) physical activity (PA) guidelines have been one of many responses to begin to address this issue of global and local concern. In Canada, research has shown that Canadian “children are taller, heavier, fatter, and weaker than in 1981” (Tremblay et al., 2010) and more recent statistics indicate that only 7% of children and youth are meeting Canada’s PA guidelines of 60 minutes per day (Active Healthy Kids Canada (AHKC), 2011). Given the strong link between inactivity and the risk of non-communicable diseases this lack of activity is considered a major concern for public health (Tremblay et al., 2010). In fact, the total cost of current physical inactivity is estimated at \$6.8 billion, or 3.7 percent of all health care costs in Canada (Janssen, 2012). If the current levels of inactivity hold for youth as they enter adulthood, the overall health care costs could easily surpass the current financial impact.

The Canadian PA guidelines are a local manifestation of a worldwide focus on PA for health benefits and are crucial documents that form the starting point for a number of policies and interventions around achieving minimal healthy amounts of PA across the lifespan for Canadian citizens (AHKC 2011; Colley et al. 2011; Tremblay et al., 2011). Moreover, the Canadian PA guidelines are often cited as exemplary by the WHO in their global PA guidelines (WHO, 2010). The most recent PA guidelines made available in Canada span the entire life of the individual including infants and toddlers (zero to four years old), children (aged five to eleven), adolescents (aged twelve to seventeen), adults (aged eighteen to 64), and seniors (65 and older) (Tremblay et al., 2012).

This paper will primarily focus on the adolescent stage of life. With regards to adolescence, the current guidelines address how parents can help adolescents choose appropriate types of PA. However, the guidelines and accompanying documents lack information on how adolescents can transition into independent PA. This gap in providing knowledge regarding the developmental trajectory to voluntary, independent PA for Canadian adolescents is worth examining further.

The recommendations for adolescents are presented in a way in which being exposed to PA occurs primarily through guided experiences provided and overseen by parents and caregivers, and then in the guidelines for adulthoods (ages eighteen and above), individuals are expected to be able to self-regulate PA. For example, in the sections for adolescents you see statements like “Parents and caregivers can help to plan their teens’ daily activity: Teens can:” followed by a list of developmentally appropriate PA activities (Canadian Society for Exercise Physiology (CSEP), 2010). In the guidelines for adults however, you see statements like “Pick a time. Pick a place. Make a plan, and move more!” (CSEP, 2010). The recommendations thus encourage adults and seniors to be active and it is implied that these adults have the ability to plan, execute, and revise PA according to their personal goals, preferences, environments, needs, and limitations.

Therefore, the guidelines do not address or help individuals, particularly as they transition from guided activities in adolescence to more independent activity in adulthood, to learn how to self-regulate their PA. This may be a critical blind spot as research shows that self-regulation of PA is an emergent factor in PA interventions for adults (Rhodes and Pfaeffli, 2010).

As a result, providing opportunities to help youth develop the skills necessary to be able to self-regulate their own PA as they mature and take on more independence may be important. In support of this, Rhodes, Naylor and McKay (2010) discussed that even “tweens” (variously defined as pre-adolescents aged ten to twelve or thirteen) are beginning to spend more leisure time with their peers rather than with caregivers, and therefore did not recruit families with children above the age of ten for their intervention to increase family-based PA. The researchers concluded that targeting PA through caregivers and parents seems to be a promising PA intervention practice for Canadian children *aged four to ten*, though conspicuously not children above that age. In addition, in their commentary on earlier versions of PA guidelines which excluded 15-19 year olds at that point, Tremblay and colleagues (2007) discussed the increasing independence of adolescents and the impact that may have on PA levels.

Therefore, there is an acknowledgement that adolescence represents a phase of growing independence and it would seem prescient to tailor PA recommendations and opportunities to reflect this independence. In the current form of the PA guidelines for adolescents, on which many PA interventions are based, there is a potential breakdown in the assumption that active youth receiving the guidance of their parents, caregivers, and coaches will necessarily become independently active adults unless that guidance is explicitly linked to developing self-regulatory skills. Research with adults found that self-regulation is a strongest contributor to PA behavior (Anderson, Wojcik & Winett, 2006; Hallam & Petosa, 2004). However, research has also shown that adults (based on the current guidelines are assumed to be able to self-regulate their PA) often lack the skills, supports, and self-regulation skills to plan, execute, and revise *their* PA plans (Rhodes

and Pfaeffli, 2010). Therefore, it is unlikely that parents and caregivers are helping adolescents these necessary self-regulatory skills.

In sum, while the Canadian PA guidelines are rigorous, evidence-based summaries of the best available evidence in PA research, in their current state they are not formulated to encourage, enhance, or gradually build self-regulation skills in adolescents. Since PA guidelines are a prototypical “upstream” public health resource, this gap may inadvertently lead to public health policies and PA interventions that do not support the development of self-regulation skills to help adolescents to develop independence with regards to PA.

A recently developed community-based PA and life skills for at-risk youth called PULSE program is an example of how after-school programming can begin to address adolescent PA by explicitly focusing on the development self-regulation skills. In the program youth are provided developmentally appropriate opportunities to become physically active within a mastery climate to learn the skills necessary to independently self-regulate their PA. This is accomplished through a gradual shift from supported, guided PA to independently choosing the type, duration, and frequency of their exercise after resetting and reevaluating their goals.

The PULSE Program – A Detailed Description

The PULSE program was developed based on the combination of two positive youth development program frameworks, the Life Development Intervention (LDI; Danish & D’Augelli, 1980; Hodge & Danish, 1999) and the Teaching Personal and Social Responsibility (TPSR) model (Hellison, 2003). The LDI focuses on teaching life skills to help individual navigate different challenges they face in life. In the PULSE

program an explicit emphasis was placed on teaching life skills related to self-regulation such as goal setting, seeking social support, problem solving, overcoming barriers, leading a healthy lifestyle, managing emotions, and relaxation. The TPSR model focuses on helping youth develop five levels of responsibility (self-control, effort, self-coaching, leadership, transference) and uses particular program structure to achieve this goal. In PULSE, the TPSR structure was used and is described below.

The PULSE program was designed to provide a developmentally appropriate understanding of resistance training and aerobic training and incorporates the teaching of life skills and the TPSR levels to foster the development of self-regulation skills. As mentioned above, PULSE began as a guided PA experience in the after-school period at a local community fitness facility. This guided experience was then followed by the provision of memberships to the community facility so that participants can continue to participate in PA more independently. The program was led by four leaders that included the lead author who has completed and obtained certification in personal training, a Masters student in Human Kinetics, and two fourth-year university students in Human Kinetics fulfilling their internship requirements. Overall, the program was broken into three phases and implemented over the course of five months.

The first phase of the program consisted of two months of two weekly two hour program sessions (16 sessions in total). As mentioned above, the purpose of these sessions was to introduce youth to both aerobic and resistance training, the TPSR levels, and various life skills. Each session follows the program structure of the TPSR model. The first 5-10 minutes of the session consisted of relational time where the leaders talk with the youth about what is going on in their daily lives. Following relational time was

the awareness talk. The awareness talk addresses the five different TPSR levels outlined above and the additional life skills of goal setting, problem solving, seeking social support, overcoming roadblocks, emotional regulation and relaxation. The rationale for including additional life skills was to ensure that the youth were taught a variety of skills that would help the youth learn how to self-regulate. The awareness talk was followed by the PA plan which was when the participants engaged in a variety of resistance and aerobic activities. The PA component of the program specifically followed the national recommendations, with progression to independent practice of resistance and aerobic training on a regular basis (Kraemer & Fleck, 2005; Tremblay et al., 2010). Finally, a debrief meeting occurred at the conclusion of each session where the leaders discussed with the youth progress that had been made that day, or any challenges or difficulties faced.

The second phase of PULSE consisted of meeting once per week for a period of six weeks (6 sessions). For this phase the youth were given memberships to the community fitness facility so that they could attend independently from that point onwards. The purpose of these sessions was to help youth become more independent with regards to their PA and therefore the leaders helped the youth adapt and/or set new priorities and goals for their ongoing PA.

The third phase of the program consisted of an additional six weeks of one session per week (6 sessions) during which the participants were encouraged to continue their PA plans independently using their memberships. During this phase the leaders would briefly check in with the youth sporadically to encourage them to plan for ongoing independent

PA. Please see Appendix A for a timeline of the PULSE program and Appendix H for the program manual.

Overall Recommendations for Adolescent Physical Activity

It may be argued that the Canadian PA guidelines are the most widely viewed, utilized, referenced, and implemented public health messages for PA in Canada, and should be developed and evaluated as such, with rigour, close evaluation, and revision based on emerging consensus. Current supplements such as “Tips to Get Active” do include recommendations directed to adolescents, even suggesting that adolescents set PA goals with friends and family. However, without appropriate guidance and resources directed to parents, teachers, and community youth workers that outline appropriate methods to assist youth in developing self-regulation skills related to PA, there is a chance that the current guidelines will not effectively aid in helping youth transition into independently active adults.

We also believe that even relatively minimal revisions to current PA guidelines may help to convey that adolescents are in a period of growing transition and provide ideas for developing self-regulation skills. We recommend the following changes to the current guidelines targeting youth. (1) A stronger emphasis that adolescence is a transitional time that parents and caregivers can encourage or work with adolescents to “Pick a time. Pick a place. Make a plan, and move more!” Emphasize that adolescents can do so themselves, or that they can seek the help of their friends, teachers, coaches, and family members to help them towards their own PA goals; (2) Develop adjuncts to the guidelines that help youth understand how they can set PA goals, begin to plan PA into their schedules, optimize their progress towards goals, revise their goals, seek social

support, and plan for inevitable barriers and relapses; (3) Extend work with partners in sport, physical education, and community recreation to ensure that youth are given the opportunity to be active and to be able to self-regulate as it relates to their chosen sport or activities; and (4) Target adolescents through secondary schools, universities, colleges, and workplaces so that resources for self-regulating PA are widespread, easily accessible and commonplace ideas for adolescents.

Conclusion

In closing, the Canadian PA guidelines and worldwide efforts for standardized recommendations for healthy minimum levels of PA are crucial, but the potential for adolescents to take responsibility for their own PA levels may warrant a revision of the current Canadian guidelines. Given the proper resources adolescents, like adults, may be able to self-regulate their PA more effectively but staggering inactivity rates and research related to PA indicate that adolescents and adults may not have yet developed these important self-regulation skills to establish or maintain healthy levels of PA (AKHC, 2011; Rhodes and Pfaeffli, 2010).

The PULSE program above represents only one example of the types of interventions that are possible and desirable for further facilitating this transition; however it does represent one of many potential alternatives that may help adolescents develop the necessary self-regulatory skills to participate in PA independently. Similar programming can and should be developed where youth are given opportunities to participate in alternative forms of PA that *they* are interested in and can be supported through a process of increasing independence by coaches, caregivers, community program leaders, and teachers. This may include (but is not limited to) sport participation

and competition, dance, outdoor PA activities like hiking and canoeing, and active commuting. Programs can be tailored to local interests, geographical limitations, and to serve youth who are at-higher risk of negative health and developmental outcomes. In the absence of formal programming, tailored resources for adolescents, caregivers, community leaders and teachers are necessary and desirable adjuncts to the current resources. These recommendations may be an appropriate first step in helping youth become independently active and self-regulating their PA as they approach and enter adulthood.

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Article 2

Evaluating the PULSE Program: Understanding the implementation and perceived impact of a TPSR based physical-activity program for at-risk youth.

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Abstract

The PULSE program is a community-based physical activity and life skills program designed to help at-risk youth be physically active. This program is unique in that it integrates activities to help youth develop both the physical skills and psychological skills needed to self-regulate physical activity. The PULSE program was based on the Teaching Personal and Social Responsibility (TPSR) model, a highly utilized program framework for sport and physical activity programming for at-risk youth. The purpose of this research was to examine changes in the five levels of the TPSR model over the course of the program and the perceived impact of the PULSE program related to the five TPSR levels. A mixed-method approach was used that included one quantitative measure of self-ratings of the TPSR levels and qualitative semi-structured interviews. The results indicated that the five TPSR levels showed a gradual increase from the beginning to the end of the program and the qualitative findings supported the quantitative findings as the youth discussed how they learned how to put forth effort, self-coach, become leaders and transfer these skills outside of the program. Based on these results it is recommended that researchers and practitioners working to increase physical activity levels of youth recognize the value and importance of ensuring that physical activity interventions integrate the intentional teaching of self-regulatory skills and that the TPSR model is one framework that can achieve this recommendation.

Introduction

The nature and scope of possible interventions to help children and youth increase their physical activity (PA) levels is vast. However, it has been suggested that in order for such interventions to be effective researchers and practitioners should differentiate youth in terms of their specific characteristics (World Health Organization (WHO), 2004). For example, youth differ on a number of different variables such as age, gender, socioeconomic status, race, religion, and geographic location. One sub-population that has been identified as being in need of increased opportunities to increase PA are youth from families living on low-incomes (Active Healthy Kids Canada (AHKC), 2011; Statistics Canada, 2008; World Health Organization, 2004; Anderson, 2009; Martinek & Hellison, 1998). Indeed, socioeconomic status alone has been repeatedly shown to be negatively associated with regular PA in youth (Dishman, Sallis, & Orenstein, 1985; Sallis, Prochaska, & Taylor, 2000; Trost, Owen, Bauman, Sallis, & Brown, 2002; Van Der Horst, Paw, Twisk, & Van Mechelen, 2007). Importantly, lower rates of PA are associated with decreased health and well-being which has led to calls for effective PA interventions to offset such unhealthy outcomes in this subpopulation (Collingwood, 1997; Flynn, 2008; Pickett, Garner, Boyce, & King, 2002; Public Health Agency of Canada, 2010).

A number of researchers assert that in order to be effective, PA programming should be more holistic or comprehensive by addressing psychological skills that have been shown to be related to PA engagement (Anderson, 2009; Everson-Hock, 2013). This recommendation is in line with changes in more general interventions related to youth development. In recent years a shift has taken place in developmental psychology that has seen programs take a more proactive approach in helping enhance the development of

youth rather than “to fix” the youth (Catalano, 2002, Damon, 2004). This concentration on enhancing the development of the whole individual has been termed Positive Youth Development (PYD). PYD has helped shift the focus of youth programming from an exclusive focus on prevention to a focus on fostering development through providing developmentally appropriate activities. Although PYD interventions are common within the context of sport, rarely have PYD programs focused on PA specifically.

However, PA interventions may be best served to integrate a PYD framework, where researchers and practitioners shift the focus from avoiding or correcting the negative potential negative consequences of an inactive lifestyle (e.g., diabetes, heart disease) and create contexts that intentionally teach and practice healthy living skills. Such skill development will not only help change health behaviour in the short-term but will enable youth to engage in healthy behaviours for a lifetime. Thus, PA interventions that focus on integrating psychosocial components with PA may be more effective in enhancing youth PA levels as opposed to interventions that just offer the opportunity to be active.

The Teaching Personal Social Responsibility (TPSR) model has been used as a program framework based on PYD principles and has been implemented in sport and physical education contexts (Hellison, 2003). In addition, the TPSR model was developed primarily for programming that targeted at-risk youth from low-income communities (Hellison & Walsh, 2002; Martinek & Hellison, 1998; Martinek, Schilling, & Hellison, 2006; Walsh, Ozaeta, & Wright, 2010). The overall objective of TPSR is to enhance personal and social responsibility through what have been referred to as “levels” (Hellison, 2003). There are five levels, starting with *Self-Control* which is the ability to

regulate one's behavior. The next level is *Effort* which focuses on helping the youth achieve their personal bests when learning new skills or behaviors within a program. The third level is *Self-Coaching* which focuses on being able to set goals and work on these goals to improve personal performance within the program activities. The fourth level is *Leadership* which is the ability to organize the group and lead parts or all of a program session. The fifth and final level is *Transference* which focuses on applying the TPSR levels or skills outside of the program (Walsh et al., 2010). While the levels may represent an increase in difficulty for the youth, they are not meant to be strictly hierarchical as the youth will be working on multiple levels at most times in the program (Hellison, 2003).

A number of studies have examined the impact of TPSR programming on youth and have found positive outcomes including increases in personal and social responsibility, positive relationships with adults, and the ability to transfer the levels outside of the program (Buckle, Walsh, & Veri, 2011; Hellison & Walsh, 2002; Martinek, McLaughlin & Schilling, 1999; Walsh et al., 2010). However, the TPSR model has primarily been used in the context of physical education and sport. Therefore, further research is needed to test the extent to which TPSR is a viable program option in other program settings for at-risk youth, such as PA programming.

The PULSE program, a community-based PA and life skills program for at-risk youth, was designed using the TPSR model. The purpose of this research was to examine changes in the five levels of the TPSR model over the course of the program and the perceived impact of the PULSE program related to the five TPSR levels.

Method

Context

The PULSE program was designed to provide a developmentally appropriate understanding of resistance training and aerobic training and incorporates the TPSR model as well as the teaching of additional life skills related to self-regulation such as goal setting, seeking social support, problem solving, overcoming barriers, leading a healthy lifestyle, managing emotions, and relaxation. The PULSE program began as a guided PA experience in the after-school period at a local community fitness facility. This guided experience was then followed by the provision of memberships to the community facility so that participants can continue to participate in PA more independently. The program was led by four leaders that included the lead author who has completed and obtained certification in personal training, a Masters student in Human Kinetics, and two fourth-year university students in Human Kinetics fulfilling their internship requirements. Overall, the program is broken into three phases and implemented over the course of five months.

The first phase of the program consisted of two months of two weekly two hour program sessions (16 sessions in total). Each session follows the program structure of the TPSR model. The first 5-10 minutes of the session consisted of relational time where the leaders discuss with the youth about what is going on in their daily lives. Following relational time was the awareness talk. The awareness talk addresses the five different TPSR levels outlined above and the additional life skills of goal setting, problem solving, seeking social support, overcoming roadblocks, emotional regulation and relaxation. The rationale for including additional life skills was to ensure that the youth were taught a

variety of life skills that would help the youth learn how to self-regulate. The awareness talk was followed by the PA plan which was when the participants engaged in a variety of resistance and aerobic activities. Finally, a debrief meeting occurred at the conclusion of each session where the leaders discussed with the youth progress that had been made that day or any challenges or difficulties faced. The youth also took this time to complete self-ratings on the TPSR levels.

The second phase of PULSE consisted of meeting once per week for a period of six weeks (6 sessions). For this phase the youth were given memberships to the community fitness facility so that they could attend independently from that point onwards. The third phase of the program consisted of an additional six weeks of one session per week (6 sessions) during which the participants were encouraged to continue their PA plans independently using their memberships. During this phase the leaders would sporadically check in with the youth to encourage them to plan for ongoing independent PA. The research study focuses on the first phase, also called the intensive phase, as it was when the program was very structured and integrated the TPSR model.

Participants and Procedure

Twenty-seven youth (aged 13-17, M=15.5) were recruited from two urban and priority schools to participate in the program. There were 21 males and 6 females in the program. Urban and priority schools are secondary schools in the province of Ontario that are located in low-income neighbourhoods and have been reviewed as in need of additional supports due to higher rates of dropout, youth crime and a lack of access to community resources. Thirteen youth completed the program from school A and fourteen

completed from school B. These two schools were located in two different neighbourhoods within a city located in Eastern Ontario, Canada.

This study used a mixed-methods approach. In particular we used triangulation design where the quantitative data and qualitative data are considered of equal importance (Creswell & Clark, 2007). For the quantitative piece, the youth completed self-ratings of the five levels of the TPSR model at the end of each program session. To ensure the youth understood the levels and to help them focus on the levels the leaders began each session by asking the youth to think about how they would do on each of the TPSR levels. Then, at the end of each program session they completed their self-ratings on each of the five levels. In addition, at the conclusion of the program a subsample of participants (N=16; 13 male and 3 female) who completed the program participated in a semi-structured interview regarding their experience of the program. These interviews were conducted outside of actual program time and as a result it was difficult to arrange meetings with all of the participants. All procedures were approved by the University's Research Ethics Board (see Appendices G and H for parental consent and youth assent forms).

Measures

TPSR levels: As mentioned above, at the end of each PULSE session the participants recorded their perceived ability to meet the expectations of each of the five TPSR levels (Self-Control, Effort, Self-Coaching, Leadership, and Transference). Participants were instructed to fill out these self-ratings honestly based on how they were feeling that day, with the explicitly stated understanding that some days would be better than others. The participants rated themselves on a 4-pt scale (1= Needs Work, 2= Okay,

3= Good, and 4= Great) (see Appendix A for PULSE workbook). To the knowledge of the researchers, this approach has not been used as a research tool to examine youth's experience in a TPSR program however it has been used in TPSR programming as a strategy for checking in with youth before the program and debriefing the program session before closing the session (Martinek & Hellison, 1998; Hellison, 2003; Walsh, Ozaeta, & Wright, 2010). Participants were expressly instructed to consider how they thought they would do during that program session, and then at the end of each program session the participant was asked to reflect on how they had actually performed in the session. For the level of transference participants were asked to consider how they were using the skills outside of the program; specifically how they had employed the levels and associated life skills since the last program session.

Qualitative Interviews: As mentioned above, semi-structured interviews were conducted with 16 of the 27 youth who completed the program. Interviews were arranged, usually on school property, or at the community fitness centre where they subsequently received memberships. A semi-structured interview guide (see Appendix B) was developed and included questions related to participants' overall experience in the program, their experience learning about the five levels of the TPSR model as well as the other life skills taught in the program, and finally their plans for becoming more independent with regards to their PA. The interviews were audio-recorded and the length of the interviews varied from 12 to 39 minutes in length with an average length of 20 minutes.

Data Analysis

A time-series analysis was conducted to examine the self-ratings for each level of the TPSR model (self-control, effort, self-coaching, leadership, transfer). A time-series analysis was chosen as this type of analysis can help gain an understanding of participant's progress throughout the program on the five different TPSR levels and also allowed an examination of how the focus of the different program sessions may have played a role in youth's experience of the various TPSR levels.

The interviews were analyzed using an inductive-deductive content analysis (Miles & Huberman, 1994). This type of analysis allows for researchers to use past research or theories/models as a guide to identifying potential themes findings but also allows the identification of emergent themes that come solely from the data. In this study, the TPSR model was used in the deductive analysis, in particular the identification of discussion related to the five levels. The analysis began with a verbatim transcription of the interviews, followed by an initial reading to become familiar with the data followed by two rounds of coding the interviews. The first round focused on identifying themes and then the second round focused on further refining these themes. Once the final themes were identified, quotes that supported those themes were organized under the relevant theme. An independent auditor who was a graduate student familiar with qualitative data analysis reviewed the results of the content analysis to ensure the trustworthiness of the data (Neuman & Robson, 2012). Each of the participants was provided a code to protect anonymity and confidentiality. The number in the code provided was on the transcript number and the letter (A or B) represents the program site (school) in which the youth participated.

Results

TPSR Self-Ratings

The time-series analysis showed that self-ratings of the five TPSR levels fluctuated throughout the course of the program but most levels showed a gradual improvement from the beginning to the end of the program (Figures 1-5). Presented below are the results from each of the levels separately along with a brief discussion as of how the different program sessions may have impacted the different levels. It was decided that including an interpretation of the time-series in the results section would provide a more comprehensive understanding and improved flow to the paper.

Self-Control

The time-series analysis on the first TPSR level self-control indicated that the youth were fairly consistent in their ratings of self-control although there was a slight increase in session eight and a period of peaks and drops in the later sessions of the program. Interestingly, in session eight is when the leaders taught the youth about managing emotions which could explain the slight rise observed in self-control for this specific session. A potential explanation for variability in self-control towards the end of the program was that these later sessions focused on transitioning to more self-directed exercise in the fitness facility, meaning that there was less direct supervision of participants. It may be that along with this increased freedom, participants may have struggled at times to keep themselves in check to the same extent as when they knew they were being supervised more closely.

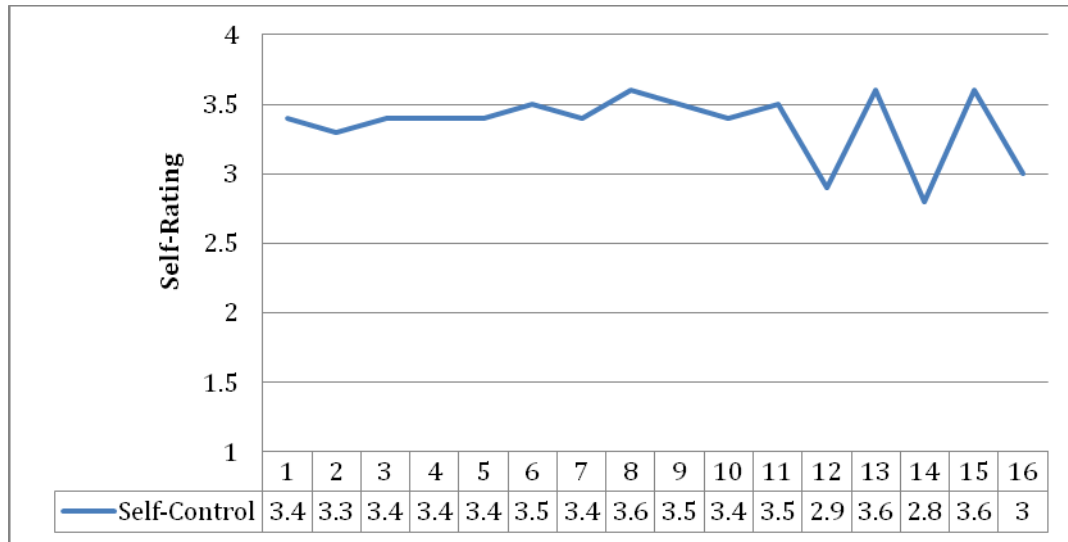


Figure 1. TPSR self-ratings across sessions for Self-Control

Effort

The time-series analysis results for effort showed that effort was pretty consistent ranging from good to great across the sessions. However, compared to self-control we see greater fluctuations. When examining these fluctuations of effort it appears that effort gradually increases from sessions 1-3 with a drop at session 4 and then rises again from sessions 5-11 with another drop in session 12 and then again a gradual increase until the end of the program. The increases from sessions 1-3 may represent the participant's initial excitement with learning new activities and skills and therefore they continued to put forth increased effort. However, as there were slight fluctuations after session three it is possible that once the youth settled into a routine it is possible that the effort put forth depending on how much the youth enjoyed each session or perhaps how energetic they felt that day. Similar to self-control there was a drop when the program shifted to a greater focus on independence in session 12. Such independence may have initially led the participants to feel a little lost and therefore their level of effort decreased but again

increased as they became more comfortable self-directing their own PA.

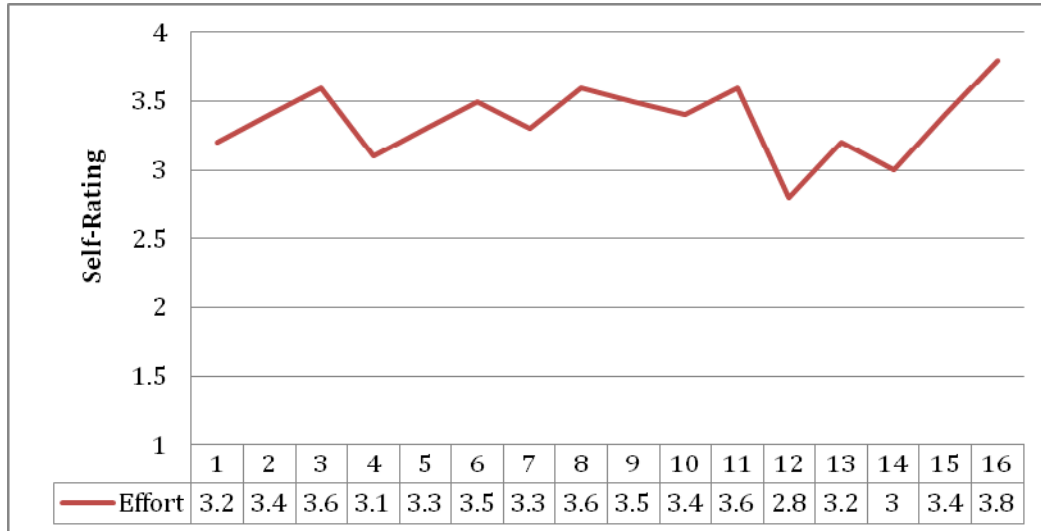


Figure 2. TPSR self-ratings across sessions for Effort

Self-Coaching

The time-series analysis for self-coaching indicated a pretty consistent trend although there were slight increases for sessions 3, 5, 6, 7 and 16. What is most interesting with this finding is that in sessions 3, 5, 6 and 7 the concept of self-coaching was further broken down as the details of setting short and long term goals are discussed, as well as how to overcome barriers and seek help from others to achieve personal goals. Session 16 represented the last session in the intensive phase and a time when the youth had been practicing directing their own PA and it is possible that they were beginning to feel more competent in self-coaching and as a result rated themselves high on self-coaching.

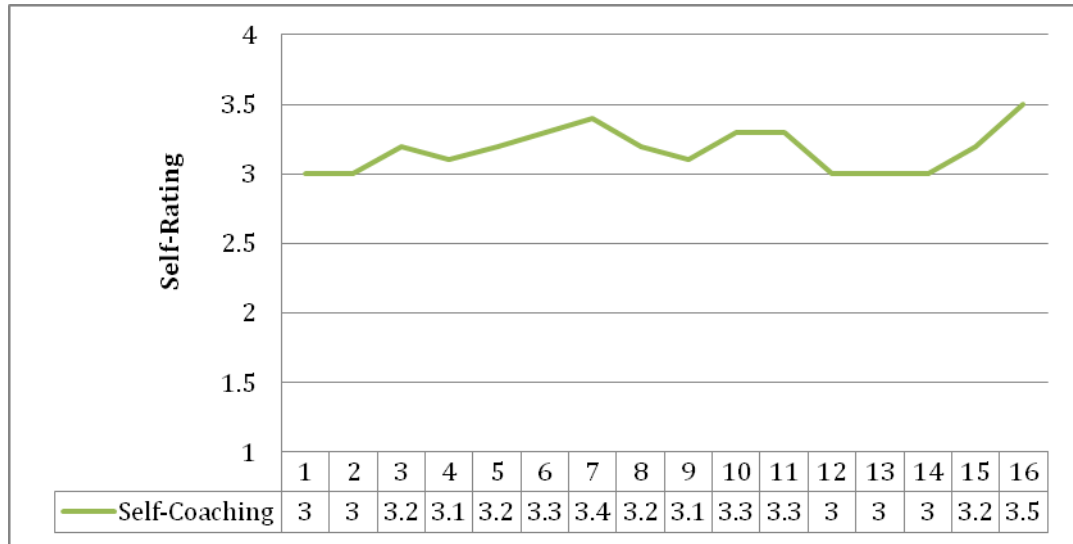


Figure 3. TPSR self-ratings across sessions for Self-Coaching

Leadership

The results of the time-series for leadership also indicated consistency across the program in the self-ratings although it can be observed that there were spikes in the self-ratings towards the end of the program in sessions 10, 13 and 15. As the program progressed participants were given more explicit responsibilities within the program to lead portions of the sessions such as warm-ups, stretching, and ensuring that participants were respectful of other members. These opportunities may have impacted how the participants saw themselves as leaders within the program in a positive way.

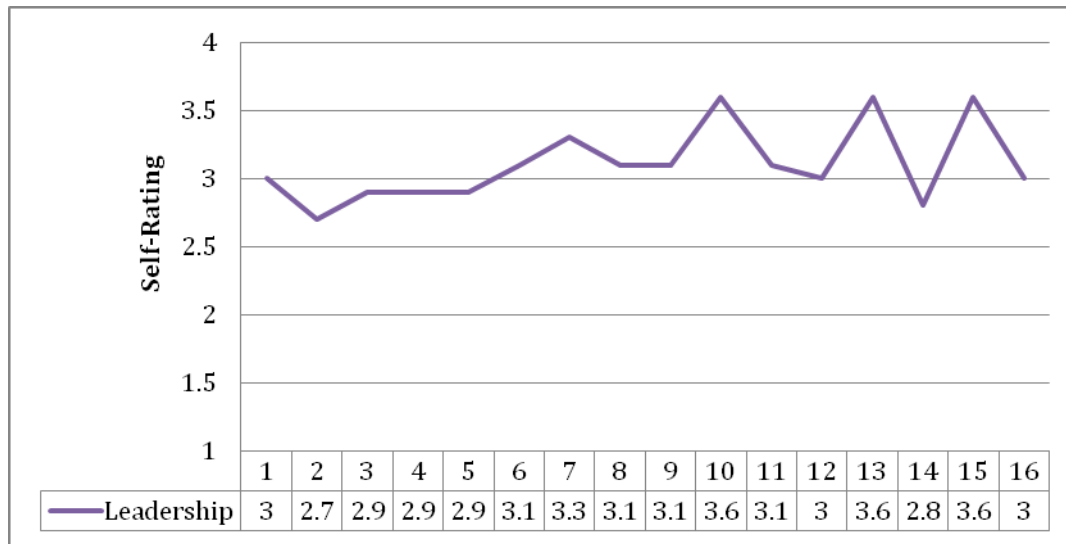


Figure 4. TPSR self-ratings across session for Leadership

Transference

The time-series analysis for the level of transference showed that over the course of the program the youth's self-ratings gradually increased and then showed a drop at session 12 and again in session 14. As the program progressed and participants practiced the life skills they were learning more and more they may have felt more confident taking those skills and using them outside of the program. Session 12 was the start of a shift in the program to increased independence and there was less focus on teaching specific life skills and so for some of these sessions the youth may have not recognized how they could transfer what they were learning in the program to other life contexts.

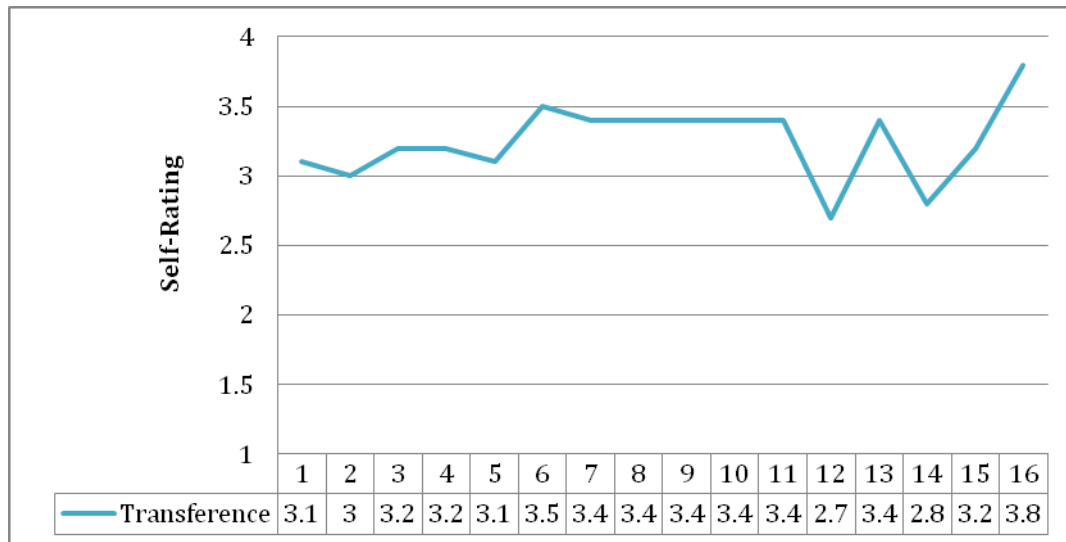


Figure 5. TPSR self-ratings across sessions for Transference

Qualitative Interviews

Five major themes emerged from the qualitative interviews. Two of these themes related to program processes. First, the youth experienced the program as a new opportunity that was fun and motivating. Second, the youth discussed how having to track their TPSR levels (through the self-ratings) during the program helped them maintain focus. The remaining three themes related to perceived impact. First, the youth expressed that they learned how to put forth effort which they were able to transfer out of the program. Second, the youth learned how to self-coach using goal setting. Third, the PULSE program led to an increase in leadership both in and outside of the program.

PULSE Provided a New Opportunity that is Fun and Motivating

Participants in the PULSE program described their overall experience as having an opportunity to do something they would not normally have the chance to and that this opportunity was both fun and motivating. As one youth stated:

I kind of thought about how my life is like my health life and how healthy I am and everything, and then you guys gave us a chance to change something and change

what we wanted to do and it made us think like, ‘Oh, this is going to be how it is from here on, doing exercise you know.’ It was like a first step in thinking about how you want to make life healthier you know, choosing what you want to do.

(B15)

A second youth expressed a similar experience “It’s a good opportunity for a high school student to find time after school to exercise for free” (A5). Another youth talked about how he enjoyed the opportunity to enhance his fitness for the football season: “It gave me opportunities because I got stronger, so it gave me a better chance of making my football team this year. My coach noticed that my body got bigger, so yeah it gave me opportunity” (A6). As mentioned above, a number of the youth talked about how the program was also very motivating in addition to being a unique opportunity. “It was fun and that my friends were there and they motivated me and you guys motivated me to do the activities and to be healthy and it was actually the first time being in the gym like a professional gym” (B16).

Tracking TPSR Levels help Youth Focus

An emergent theme from the interviews was that tracking the TPSR levels themselves through the self-ratings helped them think about what they could accomplish in each program session, and to focus on working harder. As one participant stated:

For example we were asked before how we were going to do for that day and so yeah, that definitely helped sort of change our minds from, it sort of put us in the mindset for how we were going to focus that and so it’s sort of like setting a goal for us before we even start so that we know what is expected of us. (B13)

While for another youth the tracking the daily levels was a type of daily goal setting:

Just effort or know how much you wanted to do and what you wanted to do that day and trying to actually follow through on that...like, 'I'm going to do this today' and if you did it you checked it off and if you didn't you would work harder the next time. (A9)

Furthermore, participants found that tracking the levels served as frequent feedback on their performance and helped them correct course if necessary.

After you do it a couple of times you know what you're going to be looking forward to so you know how to prepare yourself for whatever you're doing that day. Basically by looking at your results from the day before you improve day by day automatically because you know what was wrong. (A4)

Youth Learned to How to Put Forth Effort which Transferred Outside of the Program

The youth expressed that through participation in the program they learned how to put forth effort and persist in achieving their goals. As one youth stated "You learned about effort and planning on how much effort you're going to put and then seeing if you can meet what your actual goal is that day" (A9). Another youth talked about how he learned to put forth a stronger effort when being active. "You always have to push yourself that extra mile, so I think just developing those skills in themselves, getting yourself to go a little bit further" (B15). Another youth expressed a similar experience "Now when I'm working out I know, if my hands are weakening out I can tell myself two more, two more so I teach self-coaching to me through the program" (B14).

Another youth discussed how even though he was familiar with the concepts of effort being in the program helped enhance these skills:

Going into the program I thought I was pretty good at self-coaching and putting in effort. But I think just working with you guys, and working with fellow classmates/friends who are also working out, it always help a little bit, you tend to put in a little more effort that way. You just naturally start to get used to working out with your friends/trainers, and you guys giving us a push, and then you come out of it and you always have that mentality, one more, one more, keep going; I think that really helped. (A2)

Other youth discussed how they learned that this skill could be helpful in life outside of the program:

Well, effort for sure. When I raised the money for Family and Children Services when I was running, the day before the run; I think honestly the day, two days before that I arrived I only managed to run 7km and I was just dead, I didn't know how I was going to do 10km there but when I was running and I was on the track I just felt like, 'I have to do this because it's not just me it's for other people', stuff like that. I ran and I ran like twelve kilometres in one hour so it's a huge jump. And so, if you put that effort in you'll get the goal that you want...even if you're really really tired you can still take one more step. Apply that concept to everything in your life and then nothing is stopping you. (B15)

Learning how to Self-Coach using Goal-Setting

Self-coaching using goal setting was a central feature in the PULSE program and it became evident through the interviews that the youth really learned how to develop goals both in and outside of the program. This youth talked about how he learned how important goal setting is:

Setting goals for yourself. I mean everybody can kind of understand how it's important but I think just sitting down for a few minutes makes you understand how important it can really be. I just thought maybe I should start setting goals for myself, pushing myself for improvement, I think that really worked a lot more.

(A2)

The youth also shared how they learned about setting short term goals to reach a long term goals as well as the importance of writing down goals in the program helped to increase motivation for achieving goals. One youth explained "Now I know that I need to set smaller goals to reach so that I can reach the big one" (A10). Similarly, another youth stated:

I used that one (self-coaching) in managing my time. I quickly learned that you have to have your whole day scheduled to actually achieve those goals and that's what we did - when we had the program we had our papers of all the workouts that we had, we had everything written out. I noticed that when I do my life in the same way, that when I have goals I write them down and I write down proper scores or anything like that so that I know how far I am with them it gives you the motivation and it feels like you're actually doing something when you're keeping track. (B16)

In addition, the youth also talked about how they could use these skills both in and outside of the program. As one youth stated: "Definitely setting goals. In the program it was weight lifting goals and stuff like that, but you can also set goals like get higher marks and do your homework, stuff like that" (A4). Similarly this youth talked about how he would carry the skill of goal setting into his activities in the summer:

I learned the skill that you guys mostly talked about was the setting a goal for yourself, and so I learnt even during the summer when we weren't doing the program anymore, like I learned to set goals for myself...because even before this summer I was talking to you about how I wanted to join track and everything and you sort of helped me, encouraged me, you're ready to help me throughout that period and even this summer I even work at the track place so I got a job there and so I felt like I really achieved my goal. I learned important skill setting goals then working toward them. (A16)

Finally, another youth discussed how he was sharing the knowledge he had learned in the program with others:

At the beginning of the program, and we had a sheet to put all your goals- where you're going to be in five years from now...I keep that with me, And now, when I'm talking to someone or some of my friends I ask them this question, I make them, not really make them I just tell them to figure out to see how they are right now and where they're going to be in five years and I actually do this constantly to my friends and that help them out 'cuz most of them now still don't know what they're going to be so I just tell them how we did it in this program and that help me out. I actually put my goals and try to reach them, I put reachable goals not something like you know I can't reach; Now I set my goal and I have to try to reach it every month or every week, so that's the knowledge I take from your program. Before there was no purpose, I just work out because I know it was right to do but now when I come out of the program I know that it is right to do and I know why I'm working out. So that's basically it. (B14)

The PULSE Program Led to an Increase in Leadership Both In and Out of the Program

Leadership was also a very pervasive theme for participants in the PULSE program. In general, the participants attributed some ability to be a leader outside of the program to their experiences in the program. As one youth shared:

When I was in the program there was sometimes where I was trying to, I would try to help other people and I would try to take a leadership role but I think in my own way I try and be a leader because I was in the program. That helped me in keeping track and try to keep that in mind every day and every opportunity I would be trying to help other people. That's the leader role and I try to take that every day of my life and the program helped me a little bit to keep that in check. (B14)

Other participants who found the leadership component of the PULSE program central to their experience also mentioned how the opportunities to be a leader in the program helped them to take more of a leadership role with their families, at school, and at work. One youth stated, "It got me thinking about being a leader. I've found myself helping people more in class, like if I notice someone struggling I try to help them" (A3).

Another youth expressed how learning to be a leader through the program helped him teach what he had learned to his brothers and at work:

It helped me with leadership skills, so to improve, it helped me to talk to more people and let them know how to work out and stuff like that, because I go with my brothers and work out a lot now, so I tell them how to hold the bar properly and stuff like that...and at my work you have to be able to have your voice heard and stuff like that, and being a leader is a big part of who I want to become so leadership was the most thing that caught me I guess in the program. (A6)

While another youth expressed how learning leadership in the program also helped him in his responsibilities in his work outside of the program:

Leadership...I was sort of able to put that into practice at the Track and Field Club when I was working with the kids. So, for example if we were going out and someone was doing something that they weren't supposed to be I could help them out or if a kid needs help with something, for example maybe he feels left out and he needs help doing something I'll come and help him or get kids in the atmosphere or mood of participating in the activities that we do and just being a leader. (B16)

Finally, another youth expressed how the program helped him become a stronger leader at school:

I was Link crew (school leadership and mentorship for entering students) and it also helped me build up that because being a Link crew you need to show leadership and you need to have, and you need to be a role model. And so, like you have to show the grade nines how the high school life is and to lead them to the right direction. (B13)

Discussion

Taken together, the TPSR self-ratings and the qualitative interviews offer a snapshot of how the participants experienced the PULSE program, particularly as it related to the five levels of the TPSR model. The quantitative results showed that the self-ratings of the TPSR levels fluctuated throughout the program showing but the qualitative findings showed that the youth perceived that they had learned how to put forth effort, self-coach, become leaders and transfer these skills outside of the program.

These fluctuations may be explained by how the PULSE program is designed as different sessions emphasize different skills. For example, the level of self-coaching was rated higher in sessions that focused on skills related to self-coaching such as goal setting, overcoming obstacles while decreases in self-control may be explained by the decrease in the intensity of supervision when the program focused on helping the youth become more independent in their PA behaviour. In addition, some of the fluctuations in self-ratings may be explained by how the youth were encouraged to complete their self-ratings.

Participants were told to honestly assess their abilities and to recognize that ratings would fluctuate as every day can present new challenges which could impact the five levels. An emphasis built into the PULSE program is to help underscore to the youth that a long-term commitment to being physically active or working toward other valued goals would include being persistent even through days and weeks of lower motivation, higher stress, and increased demands on their time. Therefore, throughout the program the youth were not discouraged to rate themselves lower when they may have been experiencing increased stress or decreased motivation. The program leaders wanted to demonstrate that even when the youth face such barriers and may not step up as a leader, or be able to put forth effort as much as they had during the previous week, they can persevere and improve those levels in the next session. It was believed that by encouraging the youth to be honest in their ratings that they also would develop a greater sense of awareness of their behaviours which would ultimately lead to greater ability to self-regulate. These results were reinforced by the emergent theme that indicated the youth valued the process

of tracking their TPSR levels; they learned that if they had a bad day that they would work harder on the levels at the following session.

Furthermore, participants may have initially rated their abilities as high through merely not clearly understanding what the levels entailed, and then as they learned more through the program sessions and through applying these ideas in program sessions they may have experienced challenges that reflected a more realistic experience of the life skills drawn from TPSR. For example, the youth may have felt initially that they were good leaders but once they started to learn more about leadership they recognized that they still had leadership skills to develop and therefore this resulted in changes to the self-ratings throughout the program. As such the above results may be to a certain extent, be expected in programs such as PULSE that teach youth new skills.

There are two key and important findings from this study. First, the above findings suggest that integrating the TPSR model into a PA intervention appears to help youth develop the skills to self-regulate their PA by learning how to set goals and put forth effort to achieve those goals. Recent research shows that learning how to self-regulate behaviour may help close the existing gap researchers have found between intentions to be active and PA behaviour (Rhodes & Bruijn, 2013). However, research has also shown that individuals, particularly adults, often lack the skills to be self-regulate their PA behavior, meaning the ability to plan, execute, and revise their PA plans (Rhodes and Pfaeffli 2010). As a result, incorporating the TPSR model into PA interventions may help individuals learn how to be physically active and develop the skills necessary to self-regulate this behavior.

Second, the youth, as a result of participating in the PULSE program, reported transferring what they had learned in the program to contexts outside of the program at home with family, in school or at work. A number of researchers assert that effective PYD programs are those that facilitate the transference of life skills that will enable youth to succeed in a variety of contexts (Danish, 1996; Gould & Carson, 2008; Petitpas, Cornelius, Van Raalte, & Jones, 2005). Therefore, by integrating the TPSR model into a PA intervention the youth are not only being provided a unique and fun opportunity to be healthy and active as youth but it appears that they have learned how to also transfer the skills that will enable them to live healthier lives as they mature.

This paper may be of special interest to researchers and practitioners interested in developing and evaluating youth PA interventions. With regards to youth development, this study presents the potential utility of incorporating the TPSR model in a PA intervention. In relation to program evaluation this research demonstrates the value in combining quantitative self-ratings of the five TPSR levels with qualitative interviews regarding these levels. The combination of these methods allow for understanding both process and outcomes which in turn provides a more comprehensive picture of program impact.

Although this study does show a number of promising findings there were limitations that should be acknowledged. The data in this study is based on self-report and not on actual observed change, and therefore future research may be necessary to examine actual changes in the TPSR levels versus perceived changes. In addition, the self-rating scale for each of the TPSR levels was measured on a four-point scale which limits variability for data analysis. It is important to note that Hellison's intention for the

ratings of the levels was for self-evaluation as a learning tool within the program and not as a research tool (Hellison, 2003; Hellison, & Walsh, 2002). We used this rating scale to help understand changes in perceptions in the five TPSR levels but in the future, if this measure were to be used as a research tool, it would be recommended to use a broader Likert scale. It is also recognized that even though the youth were asked to be honest in their self-ratings and in the interviews social desirability could have impacted the results.

In sum, there is initial evidence that a program like PULSE, that integrates the TPSR model along with the learning of PA skills such as aerobic and resistance training, may help youth develop the necessary self-regulatory (goal setting, increasing effort) and leadership skills so that they can be physically active outside of the program context. Furthermore, the current findings suggest that these specific self-regulatory skills can be transferred to other important settings such as school and family. As a result, it is recommended that researchers and practitioners working in the field of youth PA recognize the potential value of ensuring that PA interventions integrate the intentional teaching of self-regulatory life skills; the TPSR model is one framework that can achieve this recommendation.

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Article 3

Enhancing Fitness and Life Skills of Youth through the PULSE Program: An Outcome
Evaluation

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Abstract

Adolescence is an essential developmental period to offer increased opportunities to be physically active as research has shown that physical activity rates begin to decline at this point in the lifespan (Brodersen, Steptoe, Boniface & Wardle, 2007). Community-based interventions that focus on enhancing both physical and psychosocial skills may be ideal as they have the potential to help youth become physically active while also developing the skills needed to remain active throughout the lifespan. The purpose of this research was to examine the impact of the PULSE program, a community-based physical activity and life skills intervention, on fitness measures, physical activity levels, as well as psychosocial outcomes such as personal and social responsibility and self-regulation. Participants completed fitness tests, the Godin-Shepard PA Questionnaire, the Personal and Social Responsibility questionnaire, and the Selection, Optimization and Compensation measure both at pre and post program. The results indicated increases from pre to post program on all of the fitness tests, physical activity levels, social responsibility, and two of three self-regulation skills. Overall this research shows that the PULSE program, a community-based program that integrates both physical and psychosocial skills is a promising strategy for enhancing PA and PYD outcomes for at-risk adolescents. However, more research is needed to understand the potential medium-term and long-term impacts of the program and to build causal links.

Introduction

In Canada, it has been estimated that the cost of a physically inactive population is as high as \$6.8 billion, or 3.7 percent of all health care costs (Janssen, 2012). To help promote physical activity (PA) the Canadian Society for Exercise Physiology (CSEP) has developed PA guidelines for various age groups throughout the lifespan, including youth (Tremblay et al., 2012). Although the guidelines recommend that youth, ages 12-17, engage in 60 minutes of moderate and vigorous PA recent statistics indicate that only 7 percent of youth are meeting these guidelines (Active Healthy Kids Canada (AHKC), 2012). Moreover, a number of researchers have voiced concern that although there is ample evidence indicating inadequate levels of PA, very few effective community-based interventions have been implemented which could ultimately play an important role in turning the tide of this physical inactivity (Glasgow, 2008; Maziak, Ward, & Stockton, 2008b; World Health Organization (WHO), 2009). Therefore, effective, community-based youth PA interventions are needed to reverse high inactivity levels and the resulting health consequences.

More specifically, there is a growing need for increased PA programming for at-risk youth (WHO, 2006; Pickett, Garner, Boyce, & King, 2002). According to the 2012 AHKC report card youth from higher income families are 25 percent more likely to participate in organized sport and PA opportunities (AHKC, 2012). In addition, only 51 percent of municipalities offer programming to at-risk youth (AHKC, 2012) and 72 percent of parents report that their children do not have access to after-school programs (AHKC, 2011). Therefore, there is a need for community-based programs targeting at-risk youth that help minimize the structural barriers to PA such lack of access to safe, clean facilities (Alberga et al., 2013; Luttikhuis et al., 2009).

An important consideration in interventions targeting adolescent PA is the relationship to overall development. While it may be tempting to address the health behaviour of PA in isolation there is an opportunity for PA programming to incorporate aspects that will enhance overall development as well as the skills to self-regulate PA. Positive Youth Development (PYD) is a framework that attempts to view youth holistically, and to encourage the overall development of skills, relationships, and abilities that will help youth as they enter adulthood (Catalano et al., 2002; Lerner & Benson, 2003; Lerner, von Eye, Lerner, Lewin-Bizan, & Bowers, 2010; Pittman, Irby, & Ferber, 2001). PYD arose as a reaction to what had become a dominant approach to youth programming; standardized prevention programs focused on individual maladaptive behaviours (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Damon, 2004). Practitioners and researchers began to realize that it was not optimal to attempt to only remediate or avoid health-compromising behaviours (e.g. drug and alcohol abuse), and that the lack of significant negative behaviours is not equal to optimal development. As a result, subsequent programs began to focus on the total development of youth, and opportunities for optimal development (Catalano et al., 2002; Lerner & Benson, 2003; Lerner, Almerigi, Theokas, & Lerner, 2005; Lerner, von Eye, Lerner, Lewin-Bizan, & Bowers, 2010; Pittman, Irby, & Ferber, 2001).

Apart from being a preferred avenue for enhancing youth development, PYD may also have the potential to increase the effectiveness of interventions designed to increase youth PA. Research has shown that PYD programs have the potential to promote positive outcomes in at-risk youth who tend to have limited resources, limited opportunities to be physically active and access to PA and increased prevalence of health problems

(Goodman, Slap, & Huang, 2003; Kroenke, 2008; McDonough, Ullrich-French, Anderson-Butcher, Amrose, & Riley, 2013; Votruba-Drzal, 2006; Yang, Lynch, Schulenberg, Diez Roux, & Raghunathan, 2008).

Personal and social responsibility is a goal of many sport and recreational programs that use a PYD approach (e.g., Brunelle, Danish, & Forneris, 2007; Hellison, 2011). Hellison asserts that PA programs can foster personal and social responsibility by (a) genuinely caring about, respecting, and listening to youth; (b) gradually shifting power and decision-making from staff to youth; and (c) integrating life skills and character lessons into physical activities (Hellison, 2000). Another major focus of sport programs that have used a PYD approach is the development of self-regulation skills. For example, the Sports United to Promote Education and Recreation (SUPER) is a sport-based life skills program that has been implemented internationally and has been effective in enhanced knowledge of life skills such as goal setting, enhanced self-esteem, and self-determined motivation (Brunelle, Danish & Forneris, 2007; Goudas, Dermitzaki, Leondari, & Danish, 2006; Goudas & Giannoudis, 2008; Heke & Hodge, 2001; Kolovelonis, Goudas, Dimitriou, & Gerodimos, 2006; Papacharisis, Goudas, Danish, & Theodorakis, 2005). The SUPER program focuses on teaching youth self-regulation skills such as how to set goals, seek social support and overcome obstacles to achieve their goals. Such skills are important in being able to self-regulate behaviour. Although a number of definitions for self-regulation exist, for the purposes of this research we used the definition proposed by Maes and Gebhardt (2000) as their definition is related to understanding health behaviour. They define self-regulation as “a sequence of actions and/or steering processes intended to attain a personal goal” (p. 345).

Recent research has suggested that self-regulation skills may be an important in for increasing PA behaviour (Rhodes & Bruijn, 2013). Furthermore, a formative evaluation of a school-based intervention called MyFit has shown that a program focus on self-regulation in PA for middle school students resulted in increased use of self-regulation skills (Grim, Petosa, Hertz, & Hunt, 2013). In addition, in research related to PYD, evidence from a large scale multi-stage longitudinal study has identified the importance of self-regulation in fostering positive outcomes. This research used the Selection, Optimization, and Compensation meta-model to examine self-regulation (Baltes, Reese, & Lipsett, 1980; Urban, Lewin-Bizan, & Lerner, 2010; Lewin-Bizan, Lynch, Fay, Schmid, McPherran, Lerner, & Lerner, 2010; v, 2010). This meta-model outlines three factors of self-regulation that are positively correlated with PYD (Gestsdottir, Bowers, von Eye, Napolitano, & Lerner, 2010). These three factors are elective selection, which involves actively seeking out goal areas, placing these goal areas into a hierarchy and also being able to select goals in the presence of fewer choices, optimization, which entails understanding the gap between one's current state and their goals and subsequently seeking internal and external resources to close that gap, and compensation which involves overcoming obstacles. (Gestsdotir et al., 2010).

In sum, PA interventions that also include components that focus on enhancing personal and social responsibility as well as self-regulation (e.g., setting goals and overcoming obstacles) may be more effective in enhancing youth PA levels as opposed to interventions that just offer the opportunity to be active without consideration of such variables that play a role in behaviour change.

The PULSE program was a community-based life skills and PA program developed for at-risk youth in Ontario, Canada. The program integrates a PYD approach using Hellison's Personal and Social Responsibility model (Hellison, 2003) and the Life Development Intervention framework on which the SUPER program was grounded (Danish & D'Augelli, 1980; Hodge & Danish, 1999).

The purpose of this study was to conduct an outcome evaluation of the PULSE program. A number of outcomes were examined including fitness, PA levels and psychosocial skill development and five hypotheses were proposed:

1. Fitness levels will increase from pre to the post-intensive phase (please see description below) of the PULSE program.
2. PA levels will increase from pre to the post-intensive phase of the PULSE program.
3. Personal and Social Responsibility will increase from pre to the post-intensive phase of the PULSE program.
4. Self-regulation skills will increase from pre to the post-intensive phase of the PULSE program.
5. Self-regulation will predict PA levels at the post-intensive phase of the PULSE program.

Methods

Context

The PULSE program was a guided PA experience offered to at-risk youth in the after-school period at a local community fitness facility. The program was led by four leaders that included the lead author who has completed and obtained certification in

personal training, a Masters student in Human Kinetics, and two fourth-year university students in Human Kinetics fulfilling their internship requirements. More specifically, PULSE program was designed to provide a developmentally appropriate understanding of resistance training and aerobic training and incorporates the teaching of life skills and the TPSR levels to foster self-regulation of PA.

The program was grounded in two positive youth development program frameworks, the Life Development Intervention (LDI; Danish & D'Augelli, 1980; Hodge & Danish, 1999) and the Teaching Personal and Social Responsibility (TPSR) model (Hellison, 2011). The LDI focuses on teaching life skills and in the PULSE program an explicit emphasis was placed on teaching life skills related to self-regulation such as goal setting, seeking social support, problem solving, overcoming barriers, leading a healthy lifestyle, managing emotions, and relaxation. The TPSR model focuses on helping youth develop five levels of responsibility (self-control, effort, self-coaching, leadership, transference).

Overall, PULSE was broken into three phases and implemented over the course of five months. The first phase of the program consisted of two months of two weekly two hour program sessions (16 sessions in total). The purpose of these sessions was to introduce youth to both aerobic and resistance training, the TPSR levels, and various life skills. The second phase of PULSE consisted of meeting once per week for a period of six weeks (6 sessions). For this phase the youth were given memberships to the community fitness facility so that they could attend independently from that point onwards. The third phase of the program consisted of an additional six weeks of one session per week (6 sessions) during which the participants were encouraged to continue

their PA plans independently using their memberships. During this phase the leaders would briefly check in with the youth to encourage them to plan and engage in PA independently. This study focuses on the first phase, also called the intensive phase, as it was when the program was structured to teach the youth various PA and self-regulation skills.

Participants & Procedure

The participants in this study included 13 youth (ages 13-18, 10 boys, 3 girls) from two urban and priority schools (schools deemed to be in need of more community supports based on higher dropout rates, lower grades, and higher youth illegal activity). Although it was hoped to obtain pre-post data for all 27 program participants, the researcher experienced challenges based on the evaluation protocol. At pre-program, all participants completed fitness testing and filled out self-report measures of PA levels and psychosocial skills. The same measures were applied immediately following the first two months of programming that corresponded with the intensive portion of the program. If participants were not able to attend these sessions they were not included in the dataset which explains the lower N's in the results. All procedures were approved by the University's Research Ethics Board (see Appendices G and H for consent forms).

Measures

Fitness Testing. The fitness tests included Push Ups, the Standing Long Jump, and the Multi-Stage Shuttle Run. Each of these tests is a commonly applied field test for fitness and helped to differentiate between changes in upper-body strength (Push Ups), lower body strength (Standing Long Jump), and aerobic fitness (Multi-Stage Shuttle Run) (Castro-Piñero et al., 2010; Tremblay et al., 2010; Wiersma & Sherman, 2008). These tests were administered using the same testing equipment (sound equipment and

recording for the Multi Stage Shuttle Run, measuring equipment for the Standing Long Jump, a common depth indicator for the Push Up tests) recording methods, and testing procedures at the two data collection time points.

Physical Activity Levels. The Godin Leisure Physical Activity Questionnaire (see Appendix C) is a self-report measure of PA. This questionnaire is widely utilized, with well-established norms and scoring calculations (Godin, 2011; Sallis, Buono, Roby, Micale, & Nelson, 1993). Youth entering the program completed this measure of PA by estimating their amount of light, moderate, and vigorous PA for a typical week. As mentioned above, youth completed this measure at both pre and post the intensive phase of the program

The Personal and Social Responsibility Questionnaire (PSRQ; Li, Wright, Rukavina, and Pickering; 2008). The PRSQ is specifically designed to evaluate programs using the TPSR framework. The tool is a 14-item questionnaire with two subscales: personal and social responsibility (see Appendix D). The construct of social responsibility examines respect for others and caring for others while the construct of personal responsibility looks at effort and self-direction. This tool uses a 6-point Likert scale (1=Very Strongly Disagree; 6= Very Strongly Agree). Li et al., highlight that this scale is often used because it eliminates the possibility of neutral responses and is a commonly used scale within the psychological field. Cronbach's alpha for the two subscales has been shown to range from .79 - .81 (Li et al., 2008) and in this study it ranged from .74 - .86. The measure was administered at the beginning of the program and again at the conclusion of the intensive phase of the program.

Self-Regulation. The Selection, Optimization, and Compensation (SOC) measure examines intentional self-regulation with documented use in adolescents (Baltes & Smith, 2004; Gestsdottir et al., 2010; Lerner, Freund, De Stefanis, & Habermas, 2001) (see Appendix E). The SOC scale consists of three subscales: Elective Selection, Optimization, and Compensation. Elective Selection examines the ability to electively set goals as well as select goals when there may be fewer choices. Optimization measures how individuals *optimize* progress toward that goal by understanding the gap between where one is and where one would like to be. Finally, compensation looks at how individuals may *compensate* or overcome barriers for a goal area by actively cutting back on potentially competing goals. A total of 18 forced-choice items comprise the three subscales. Example items include “When I decide upon a goal I stick with it/ I can change a goal at any time” (Elective Selection), “I think about exactly how I can best realize my plans. / I don't think long about how to realize my plans, I just try it” (Optimization), “When things don't work the way they used to, I look for other ways to achieve them. / When things don't go as well as they used to, I accept it” (Compensation). The youth read the two choices for each item and choose the statement that best represents their behaviour in all areas of their lives. The measure was administered at the beginning of the program and again at the end of the intensive phase of the program.

Data Analysis

The data was analyzed using SPSS 20.0. First, descriptive statistics (M, SD) were calculated for all measures. We then examined if there were any differences at baseline between the youth from the two different program sites (schools). There were no differences on pre-scores for any of the measures. As a result we combined the data from

both groups into one dataset for the final analyses. To examine differences from pre-program to post intensive phase of the program for the fitness measures (hypothesis 1) 3 dependent t-tests was performed. Similarly, a dependent t-test was conducted to examine differences from pre-program to post intensive phase of the program for PA (hypothesis 2). With regards to psychosocial outcomes 5 dependent t-tests were performed. Two of these tests (hypothesis 3) examined differences on the PSRQ, one for social responsibility and one for personal responsibility. The final three dependent t-tests examined differences for the each of the subscales of the SOC measure of self-regulation (hypothesis 4). Finally, we conducted a multiple linear regression to examine whether changes in self-regulation predicted PA levels at the post-intensive phase of the program while controlling for the PA levels at the beginning of the program (hypothesis 5; step 1 of the regression equation included the pre PA levels while the second step of the model included the total score from the SOC).

Results

Fitness & Physical Activity

Descriptive statistics for the fitness and PA measures showed that all of the fitness measures as well as PA levels increased from pre to the post-intensive phase of the program (See Table 1). The results from the dependent t-tests for the fitness measures showed significant differences on the push-ups ($t(12) = -2.15, p = .05$) while the results for the shuttle run and standing long jump were not significant. However, due to the low sample size which compromised the power of the t-tests (observed power ranged from 0.08-0.17) to detect significant differences effect sizes were calculated (Cohen's d). The

effect size for push-ups was large (0.65) while there was a moderate to large effect size for the shuttle run (0.45) and a moderate effect size for the standing long-jump (.39).

The results of the t-test for PA showed a non-significant effect. However, similar to the fitness measures observed power was low (.06) and therefore Cohen’s d was calculated and the results revealed a small to moderate effect size (.29) for the change in PA levels from pre to the post-intensive phase of the program.

Table 1: Descriptive Statistics for Fitness and Physical Activity

Measure	Pre		Post	
	M	SD	M	SD
Fitness				
Push Ups	24.77	9.83	28.69	12.66
Shuttle Run	7.48	3.98	8.61	2.37
Standing Long Jump	2.20	0.42	2.32	0.31
Godin-Shephard				
Physical Activity	48.52	19.73	54.09	19.19

Positive Youth Development Outcomes

Descriptive statistics for the psychosocial outcomes showed that both personal and social responsibility increased (See Table 2), although the increase for personal responsibility was very small. The dependent t-tests were not significant, however, once again due to low power (0.03 for personal responsibility and 0.06 for social responsibility) Cohen’s d was calculated. The effect size for personal responsibility was low (0.09) while the effect size for social responsibility was low but approaching moderate (.27).

The descriptive statistics for the measure of self-regulation indicated Elective Selection and Compensation both increased from pre to the post-intensive phase of the

program while Optimization slightly decreased (See Table 2). The dependent t-tests showed that compensation showed a significant increase from pre to post program ($t(12) = -2.171, p = .05$). The observed power for these analyses was 0.07 (Elective Selection) and 0.16 (Compensation) and so Cohen's d was calculated. These effect size calculations showed that there was a moderate effect size for Selection (0.33) while the effect size for compensation was large (0.62).

Table 2: Descriptive Statistics for Positive Youth Development Outcomes

Measure	Pre M	SD	Post M	SD
PSRQ				
Social Responsibility	4.98	.48	5.13	.63
Personal Responsibility	4.96	.67	5.02	.67
SOC				
Elective Selection	3.63	1.30	3.69	1.60
Optimization	4.79	1.27	4.54	1.56
Compensation	3.84	1.34	4.66	0.90

The results of the linear regression showed that self-regulation accounted for a large portion of variance in PA levels at the post-intensive phase of the program. Although the model did not show significance due to insufficient power the overall model indicated a large effect size ($R = .822$). It was found that scores on self-regulation accounted for 67% of the variance of post-intensive phase PA levels after controlling for pre-program PA levels.

Discussion

The results of this study indicated that the PULSE program may have had a positive impact on fitness, PA levels as well as psychosocial outcomes. First, the results

supported the first and second hypotheses which hypothesized that fitness levels and PA levels would increase from pre-program to the post-intensive phase of the program. Although the t-tests only showed a significant difference for push-ups it was important to examine effect sizes as due to the small sample size there was insufficient power to detect a difference if one existed. The results of the effect size calculations showed moderate to large effect sizes for the three fitness measures and PA levels. For the third hypothesis regarding Personal and Social Responsibility the results showed partial support. Both t-tests were non-significant and while the effect size for personal responsibility was low the effect size for social responsibility approached moderate. The results from the analyses on the SOC measure of self-regulation also showed partial support for the fourth hypothesis. Two of the subscales, elective selection and compensation, showed mean score increases and compensation showed a significant difference on the t-test analyses with a large effect size. The effect size for elective selection was moderate. Finally, the results supported the fifth hypothesis as changes in self-regulation accounted for a large portion of variance in post-intensive phase PA levels even after controlling for pre-program PA levels.

Overall, these findings suggest that the PULSE program may be a promising intervention for at-risk youth in order to increase fitness, PA levels, social responsibility and the self-regulation skills of setting goals and overcoming barriers. One promising finding was that the PULSE program led to increases in fitness and PA during the typical seasonal decline and an intensifying academic semester. This means that the program may have successfully offset the usual decline in self-reported PA that accompanies the entrance into winter in northern climates such as Canada (Bélanger, Gray-Donald,

O'loughlin, Paradis, & Hanley, 2009; McCormack, Friedenreich, Shiell, Giles-Corti, & Doyle-Baker, 2010). For example, Bélanger and colleagues reported a seasonal decline averaging 11 percent for adolescents moving from fall months into winter months. Furthermore, past research has also shown that a decline in PA often accompanies increased perceived time demands; indeed Neumark, Sztainer and colleagues (2003) found that perceived time constraints were the strongest factor inversely related to PA levels in a sample of adolescent girls.

Another contribution from this research is that it provides initial evidence that integrating a PYD approach into PA interventions may help youth develop a sense of social responsibility and self-regulation skills in addition to PA skills. As mentioned above, social responsibility is a goal of many PA-based PYD programs (Brunelle et al., 2007; Hellison, 2011) and the results of this study supports recent research that also found that youth increased on social responsibility due to their participation in a TPSR program for low-income youth (McDonough, Ullrich-French, Anderson-Butcher, Amrose, & Riley, 2013).

It is believed that social responsibility develops when youth have the opportunity to develop positive social relationships within the context of PYD programs (Benson, Scales, Hamilton, & Sesma, 2006). Although not examined in this particular study, a second study (article 4) that examined the participant's perceptions of their experience in the program indicated that the youth reported have developed positive relationships with the leaders who they described as supportive and trustworthy. More importantly however, is the growing body of evidence that suggests that the development of social responsibility and having positive relationships with program leaders predicts emotional

regulation, prosocial behaviour, physical self-worth and attraction to PA (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Gano-Overway, Newton, Magyar, Fry, Kim, & Guivernau, 2009; Ullrich-French, McDonough, & Smith, 2012). Furthermore, researchers have also recognized that PA contexts that facilitate a sense of social responsibility provide youth with opportunities to develop skills related to conflict resolution, cooperation, teambuilding, and leadership (Fraser-Thomas, Côté, & Deakin, 2005; Hellison, Martinek, & Walsh, 2008).

When examining the results for self-regulation more closely it appears that the youth reported slight increases on the Elective Selection subscale and greater increases on the Compensation subscale. Therefore, the youth perceived that they had learned how set goals but more importantly they reported greater increases in learning how to overcome obstacles in achieving those goals. The development of these skills is significant as research has shown that goal setting and overcoming barriers are two important skills in the maintenance of PA behaviour (Nahas, Goldfine, & Collins, 2003; Wilson et al., 2012; Ziegelmann, Lippke & Schwarzer, 2006). Therefore, based on these promising results it is recommended that researchers and practitioners consider integrating a PYD approach into PA interventions for youth to encourage the above aspects of self-regulation.

The non-significant results for personal responsibility and optimization may be explained by the fact that as the students progressed through the program they were facing increasing academic demands. Since the program started at each of the two sites at the beginning of the semester, the students' school-related work and stress increased while they were in the program. This increase in added demands may have negatively impacted their self-ratings for personal responsibility. Due to the increased

responsibilities the youth may have experienced difficulty putting forth effort to attain one or more of their goals in the timeline they had initially. Further examination of these findings future research is needed.

Similar to other research evaluating community-based programming there were a number of limitations in this study. First, as mentioned above, the evaluation protocol, in retrospect was too rigid. Pre-data was only collected at the first two sessions and if youth joined the program at a later time they were not subjected to the pre-tests. In addition, the final testing was completed only at the final program session so if youth did not attend this session there was no post-data collected for these individuals. Future iterations of the PULSE program or other community-based PA programs for youth may offset this limitation by having on-going pre-testing as youth join the program and to also do a more aggressive follow-up with youth to obtain post-test results. A second limitation was that this study did not use an experimental design and therefore no conclusions can be drawn related to causal effects. However, this problem is typical of much PYD research, and inherent in work with community-based programs that do not limit participation in order to satisfy conditions of random assignment or the creation of a control group (Brunelle et al., 2007). A third limitation was that the PA levels and psychosocial outcomes were based on self-report measures and therefore it is recommended that future research incorporate more direct measures of these variables.

In sum, the PULSE program represents an important contribution to the literature related to the development and evaluation of community-based PA programming for at-risk youth. This study in particular demonstrates that a program such as PULSE may be effective in increasing PA. More importantly this research shows the value of integrating

a PYD approach, focused on responsibility and self-regulation. This integration could lead to a shift in which researchers and practitioners are not only attempting to avoid the negative consequences of an inactive lifestyle (obesity, diabetes, later-developed cancers, etc.), but attempting to create contexts in which youth have the opportunity to form relationships with caring adults and intentionally teach and practice healthy living skills. Such skills may not only help in changing health behaviour in the short-term but will enable youth to engage in healthy behaviours for a lifetime so that they develop into healthy, functioning adults.

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Article Four

Examining Needs Support in a Community-Based Life Skills and Physical Activity
Program for At-Risk Youth: the PULSE program

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Abstract

An effective means of helping youth increase physical activity may be to integrate the teaching of life skills into Physical activity programming. Hodge, Danish and Martin (2013) have advocated that life skills programming may support the development of the three psychological needs of autonomy, competence and relatedness outlined in Basic Needs Theory. Research has shown that supporting these needs can positively impact motivation for being active (Standage, Duda & Ntoumanis, 2005). However, to date, no research has examined whether a life skills program can fulfil the three basic needs. As a result, this study examines whether the PULSE program, a community-based life skills and PA program, supported the three basic needs. The results from the Learning Climate Questionnaire, a measure of needs support indicated that the youth strongly perceived the PULSE program as meeting their basic needs. In addition, semi-structured interviews with the youth resulted in four emergent themes related to the three basic needs. In sum, this research provides initial evidence that a life skills program can fulfil the needs of autonomy, competence and relatedness. Recommendations for practitioners related to program design and for researchers related to the areas of future research are discussed.

Introduction

The growing rate of physical inactivity in youth is contributing to a myriad of negative health outcomes and is a priority in public health in Canada and around the world (World Health Organization (WHO), 2004; Public Health Agency of Canada, 2010; Salmon, Booth, Phongsavan, Murphy, & Timperio, 2007). Adolescence is a critical time in the lifespan to build healthy habits around PA since during this developmental period of the lifespan youth become increasingly independent (Tremblay et al., 2007; Rhodes, Naylor, & McKay, 2010). Therefore, it is also critical to help them develop the necessary skills to plan, execute, and modify planned PA as this is the expected route of performing PA in adulthood (Tremblay et al., 2011).

An effective means of helping youth increase their PA and to develop the skills to be able to self-regulate may be to utilize a Positive Youth Development (PYD) approach when designing PA programming or interventions. PYD arose as a reaction to what had become a dominant approach to youth programming; standardized prevention programs focused on individual maladaptive behaviours (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Damon, 2004). As a result, programs began to focus on holistic development of youth by providing opportunities for optimal development (Catalano et al., 2002; Lerner & Benson, 2003).

A particular PYD approach that has been implemented with at-risk youth is the teaching of life skills. Life skills have been defined as skills that enable individuals to succeed in the different environments in which they live (Danish, 1996; Danish, Forneris, Hodge & Heke, 2004). The framework that grounds a number of life skills programs for youth is the Life Development Intervention (LDI). The LDI is based on a life-span

human development perspective and the primary assumption within this framework is the potential for continuous growth and change (Danish & D'Augelli, 1980; Hodge & Danish, 1999). However, the LDI also recognizes that change can disrupt routines which may result in increased stress. The LDI considers change resulting from life situations as critical life events and recognizes that individuals will experience many of these critical life events throughout their life. For example, adolescents are at an age where they are experiencing a number of concurrent and potentially stressful life changes with events such as the onset of puberty, transitions from elementary school to middle school or high school, and an expanding peer group that becomes more influential on behaviour and values (Crockett & Petersen, 1993; Petersen & Hamburg, 1989). The specific goal of LDI is to enhance personal resources and competence for dealing with critical life events by teaching life skills. As a result, the LDI framework integrates the teaching of life skills to help participants to optimize physical or psychological development (Danish et al., 1993).

Hodge, Danish and Martin (2013) have recently advocated for the examination of the Basic Needs Theory within the context of life skills programming. They assert that given life skills programming focuses on behaviour change by providing positive opportunities to develop skills and form positive relationships with program leaders that the psychological needs delineated by Basic Needs Theory may be supported in such programs. Basic Needs Theory postulates that individuals have three innate psychological needs which are autonomy, competence, and relatedness (Deci, Ryan, & Williams, 1996; Ryan & Deci 2002). As stated by Deci and colleagues (1996): "People are theorized to be inherently desirous of feeling connected to others within their social milieu, of functioning effectively in the milieu, and feeling a sense of volition and personal

initiative while doing so.” It is also posited that when an environment supports or fulfills these three needs the result will be optimal psychological functioning (Deci et al., 1996). Therefore, Hodge and colleagues believe that Basic Needs Theory may be a good theory to help understand how life skills programs lead to optimal functioning.

In addition, research has indicated that there is a relationship between PA motivation, persistence or maintenance and the three basic psychological needs (Pelletier, Fortier, Vallerand, & Brière, 2001; Standage et al., 2005; Quested & Duda, 2010). Standage et al. (2005) surveyed 950 British secondary school students regarding their perception of need support and subsequent PA motivation in their physical education class. They found that perceived basic psychological need support strongly predicted intrinsic motivation for physical education and negatively associated with amotivation. Quested and Duda examined the social environments of dance schools and found that task-oriented environments, those that focus on self-referenced standards where individual effort is emphasized, positively predicted needs satisfaction.

As mentioned above, Hodge and colleagues (2013) state that life skills interventions may already be need supportive despite a lack of explicit focus. For example, in SUPER, a well-established life skills program that has been implemented internationally, the focus is on having youth learn about goal setting and emphasize that the goal has to be important to you and that it has to be under your control which is similar to autonomy and important in creating a task-oriented environment. In addition, the youth are also taught problem solving skills to help them overcome barriers they may face in the process of achieving goals which may lead to an increased sense of competence. Furthermore, in SUPER, there is a focus on training effective peer leaders

and helping the youth learn about how to seek social support which could lead to a greater sense of relatedness. Moreover, as Deci and Ryan (2000; Ryan & Deci, 2002, 2008) contend, when these three needs are satisfied people experience optimal psychological well-being which is also the overall goal of life skills interventions (Danish, 2000; WHO, 1999).

However, to date, no research has examined whether a life skills program can fulfil the three basic needs. This research examines the PULSE program, a community-based PA and life skills program that was grounded in the LDI and inspired by the SUPER program. More specifically, this study used a triangulation mixed-methods design (Hanson, Creswell, Clark, Petska, & Creswell, 2005) to examine whether the PULSE program could support the three basic needs of autonomy, competence and relatedness.

Methods

Context

The PULSE program was designed to provide a developmentally appropriate understanding of resistance training and aerobic training and incorporates the teaching of life skills. It was developed based on the LDI as explained above (Danish & D'Augelli, 1980; Hodge & Danish, 1999) and the Teaching Personal and Social Responsibility (TPSR) model (Hellison, 2011). The TPSR model focuses on helping youth develop five levels of responsibility (self-control, effort, self-coaching, leadership, transference; (Hellison & Walsh, 2002; Martinek, Schilling, & Hellison, 2006; Walsh, Ozaeta, & Wright, 2010). These levels of responsibility were used as a cornerstone of the PULSE program. To help youth develop these levels the TPSR model utilizes a specific program structure that was used to guide the PULSE program. Each session of the PULSE

program used the following format. The first 5-10 minutes of the session was set aside for relational time, where leaders would check in with the youth to see how things are going in their lives. This relational time was then followed by an awareness talk. The awareness talk specifically addressed the five different levels outlined above. The awareness talk was then followed by the PA plan during which the youth engaged in various PA and sport activities. The PA plan was then followed by the group debrief meeting where the leaders discussed with the youth progress that was made in the program that day or any challenges or difficulties faced. As mentioned above the PULSE program integrated both the TPSR and the LDI based SUPER program. More specifically, the PULSE program remained faithful to the TPSR session structure and levels but integrated life skill workshop activities from the LDI based SUPER program to allowed the PULSE program leaders specific material from which to teach the levels within the awareness talk.

The PULSE program targets at-risk youth and provided a guided PA experience in the after-school period at a local community fitness facility. The program was led by four leaders that included the lead author who has completed and obtained certification in personal training, a Masters student in Human Kinetics, two fourth-year university students in Human Kinetics fulfilling their internship requirements. Overall, the program was broken into three phases and implemented over the course of five months. The first phase of the program consisted of two months of two weekly two hour program sessions (16 sessions in total). As mentioned above, the purpose of these sessions was to introduce youth to both aerobic and resistance training, the TPSR levels, and various life skills. The second phase of PULSE consisted of meeting once per week for a period of six weeks (6 sessions). For this phase the youth were given memberships to the community fitness

facility so that they could attend independently from that point onwards. The third phase of the program consisted of an additional six weeks of one session per week (6 sessions) during which the participants were encouraged to continue their PA plans independently using their memberships. During this phase the leaders would briefly check in with the youth sporadically to encourage them to plan for ongoing independent PA. This study focused on the first phase, also called the intensive phase, as it was when the program integrated the LDI by teaching of life skills.

Participants and Procedure

The youth who participated in this study were those involved in the PULSE program. Participants for the program were recruited from two high schools deemed urban and priority schools due to higher dropout rates, increased crime, and lower opportunities for recreation. The sample for this study consisted of 16 of the program participants (13 males, 3 females) ranging in age from 13 to 17 (mean age = 15.5).

As mentioned above, this study used a mixed-method design. More specifically, we used a concurrent triangulation design with equal weighting on the quantitative and qualitative data in the research design (Hanson et al., 2005). The participants completed one quantitative measure to assess the three basic needs and completed a semi-structured interview. The University's Research Ethics Board approved all procedures for the current study (see Appendices G and H for consent forms).

Measures

Learning Climate Questionnaire. The needs support measure employed in the current study was the Learning Climate Questionnaire (LCQ; Williams & Deci, 1996 Black & Deci, 2000 Williams & Deci, 1996) which was superficially adapted from

Standage, Duda and Ntoumanis (2005) (see Appendix F). The adaptation consisted of changing the lead-in statement for each item from “In this PE class...” to “In the PULSE program...” followed by the item. There are a total of 24 items which assess all three of the needs (autonomy, competence and relatedness). The items are responded to using a 7-pt Likert scale. The measure showed good reliability with this sample (Cronbach’s alpha for the total scale was 0.90).

Qualitative Interviews. As mentioned above, semi-structured qualitative interviews were conducted (see Appendix B for interview guide). The interviews took place on school property or in a convenient location for participants. The semi-structured interview guide featured questions regarding the youth’s experience in various aspects of the program such as “Tell me a little bit about your experience in the PULSE program”, “Did the PULSE program give you an opportunity to explore physical activity and try new things?”, and “What kinds of skills did this program get you thinking about?”. Also, included in the interview guide were questions related to the three basic needs. For example, “Were the program leaders able to help you feel competent at performing physical activity on your own?” refers to perceived competency, “Did you feel that you were able to make choices on your own about what the exercises and activities you did in the program?” refers to perceived autonomy, and “Did you feel close to the program leaders or the participants? What helped that, or what got in the way?” refers to relatedness. The guide included Interviews were audio-recorded and ranged in length from 12 to 39 minutes, with an average length of 20 minutes.

Data Analysis

The LCQ was analyzed by calculating descriptive statistics (Means and Standard Deviations) for each of the subscales. The interviews were analyzed using an inductive-deductive content analysis (Miles & Huberman, 1994). This type of analysis allowed for the use of past research as a guide to thematic findings, but to also capture emergent themes. Basic Needs Theory guided the deductive analysis. First, all of the interviews were transcribed verbatim. Second, the interviews were initially coded for possible themes. Third, a second round of coding was conducted to further refine themes. Finally, the broad themes were organized and relevant quotations identified that supported the emerging themes. An independent auditor who was a graduate student familiar with qualitative coding reviewed all coding to examine whether the identified themes were consistent with the data collected. Following the review, all discrepancies were discussed until agreement was reached. These discrepancies were only related to determining which quotes had the best fit for the identified themes. Participants were assigned a unique identifier to ensure anonymity and confidentiality in the responses. The number in the represents the transcript number while the letter represents the program site (school) in which the youth participated.

Results

Learning Climate Questionnaire

The results from the LCQ showed that the youth perceived the program as supporting their overall needs ($M=6.57/7$, $SD=0.39$). When examining scores on the three subscales separately it was also evident that the youth perceived the program as supporting all three of the basic needs (Autonomy - $M=6.50/7$, $SD=0.44$; Competence - $M=6.63/7$, $SD=0.38$); Relatedness - $M=6.57/7$, $SD=0.51$).

Qualitative Data

Analyses of the qualitative data led to the identification of four prominent themes in regards to Need Support. These themes were: leaders provided choice to facilitate autonomy, leaders facilitated the development of competence in PA skills, PULSE develops competence to be active independently, and leaders perceived as supportive, trustworthy and knowledgeable.

Leaders Provided Choice to Facilitate Autonomy

In the interviews the youth discussed that one of the aspects of the leaders and the program overall was that once they had learned the basic PA skills they were provided the opportunity to choose or develop their own workout plans. As one youth stated “You got to choose the weight, you got to choose what you want to do...we were able to choose depending on how you feel and you just try to do the best you could” (A10). Likewise another youth shared, “I always had a choice. I feel like I had a say in what I was doing” (A5).

Other youth talked about the progression to independence, how the leaders provided more teaching moments and supervision initially but then allowed the youth greater autonomy:

I think to begin with, it (the program) was a little bit more telling us what areas to focus on, but once we got a little bit more comfortable in the program it was more you guys kind of lead us in some areas, and then we make our own choices from there. I think the worksheets, recording our workouts is a good example. Basically once we got more knowledgeable and comfortable about focusing on a certain area/body part, and then we make our own options what to do from that. (A2)

Another youth also expressed how being able to have that autonomy was exciting and helped them develop the skills to self-coach:

Like the second week you helped us, you help us how to do it but then, and then you helped us do it on our own so it was kind of an exciting moment - how you teach us and then we had to do it on our own. When you was there if we did something wrong you would tell us but would give us the chance to be our own leaders. (B14)

In addition, the youth explained how this progression to having more autonomy also helped them become more responsible:

I think the program helped us, because we started off it was basically do everything as a group and then week by week, day by day we'd get to do our own thing for a little bit longer and that kind of thing and then eventually it was just on your own so I felt more responsible in the gym. (A8)

Leaders Facilitated the Development of Competence

The youth noted that the program helped them to feel competent by building up knowledge regarding how to properly engage in PA. As one youth described “like on the first day when we went to work out I didn't know how to use some of the tools that was there so like, once you guys told me how to do this and how to do that and how to do this, right away I could do it myself” (B13). Other youth expressed how leaders helped them learn how to navigate a gym so that they would know how to use the equipment “before the program I would go up to the gym and I wouldn't know where to start and where to end and stuff and so it made it easier to know” (A6). Moreover, other youth shared how the leaders helped them learn the ‘why’ and ‘how’ of different exercises:

I feel like you guys were a lot of help, because a lot of the stuff we did we really didn't know much about it and we couldn't have done by ourselves. I went to the weight room before a few times a week, and I would do whatever I did but I didn't know why or how I was doing it. I didn't have a specific reason in my head for why I was doing it. (A5)

Therefore, competence, in this case was not only the ability to do exercise but the knowledge base of understanding why doing certain exercises with proper form is important in meeting specific goals.

The youth also expressed how they developed competence by having the leaders believe in them “You pushed us as in ‘You can do a few more, I bet you can do a few more.’” (A10) as well as encourage them:

At the beginning we could do five push ups and then you would give us like encourage us to maybe the next time to get maybe eight push ups so you gave us like a general idea of where we should be at at a certain point and you'd sort of give us an opportunity to achieve higher than we did before. (B16)

PULSE Develops Competence to be Active Independently

Apart from learning the PA skills to perform them in the program the youth often expressed how, as a result of participating in the program, they now had the skills needed to work out on their own, independent of the program. As one youth shared: “Now I feel like I can go to the gym alone, without any help or anything now I can do my own thing without getting hurt” (B11). Another youth expressed having the same experience “It was good, like right now if I went to the gym without this program I would have no idea what some of the machines do or how to use them. This gave me the knowledge to do it

properly” (A4). Similarly, another youth stated “It did, I’d prefer not to, but I definitely am capable of going and working out by myself just keeping focused on what I have to do” (A3).

Furthermore, the youth discussed how this competence they had developed led them to be more active on their own outside the program. As one youth shared “It helped, because in the month of December when I stopped going, I just worked out at home, I did about 30 minutes of exercise on a nightly basis” (A1). In the same way another youth shared the following:

I go to the gym at least four times a week with my brothers. I just love being in the gym and I love like being active so that’s why I’ll keep going all the time...it (PULSE) helped me because now, lately I write my own program I bring like the way you guys taught us to use the sheet and write the weights and then go through each week and see if I can add weight, so I use a lot of the stuff that you guys taught us at the PULSE program. (A6)

Leaders Perceived as Supportive, Trustworthy, and Knowledgeable

The participants of the PULSE program universally described their relationships with the program leaders as positive. This quote provides an example of how many of the youth felt and therefore expressed in their interviews:

One big thing I noticed was that you guys were always available to talk to us after the program. Even after everybody leaves you would stand on the side and be like, if you need help with something. You were just open and ready for any conversation to help someone and being friendly and everything like that. So all those things, it sort of encouraged us and gave us the confidence to approach you

and speak to you guys about certain things. So yeah, I felt that it was really important...like really understand what we need and how to help us and you were very flexible and very understanding, so I really enjoyed that. (B16)

More specifically, the youth also shared that the leaders provided the support they needed to succeed “by coaching and pretty much giving us whatever we need to succeed” (A7). As well the youth discussed how the leaders structured the program so that they would feel comfortable learning the skills at their own pace.

Well when you guys were telling like just to take our time with the workout, it actually made me feel comfortable, like we didn’t have to rush for others... We needed to just be calm and do what we can. That was proper thing; that was helpful in feeling calm and comfortable (A3).

Similarly another youth discussed how the leader encouraged just the right amount “You guys more encouraged us. You guys always pushed us but not, but not pushed us as in forced us” (B15).

In addition to feeling support when learning the PA skills the youth also shared that they felt good going to the program as they had developed a friendship with the leaders. One youth shared “Yeah, I was friends with you guys. Like when I went there I’d feel good” (A9). Also, the youth expressed that the leaders supported them by also expressing interest in the participant’s lives outside of the program as well. “I guess you guys tried to talk to us other than, you know, other than sports you know, other than what we were doing you guys tried to like be friends with us you know?” (B15).

This sense of support seemed to lead to a feeling of trust with the leaders. As one youth expressed: “Actually, I feel close with y’all. If I had some problems I could come

up to you and talk to you and you would be there without judging my side of the story- you just give me your opinion honestly so I think that I felt close to all of you” (B13). Likewise another youth shared “Most things, even things I wouldn’t normally talk about with my friends I would talk with you guys” (B11).

In addition, to feeling support and having a sense of trust in the leaders, the youth also explained that the leaders were knowledgeable and open to answering their questions. For example one youth stated “Well there was the plan being given out, but if you wanted to an exercise other than that I could come ask you, “what is this”, and you would show me and I could do it” (A4). Similarly, another youth shared:

I thought it was pretty good from the actual exercise stuff you guys were always able to answer our questions, and then you have the workbook stuff too, so it’s more in depth in understanding. So I thought you guys were great at answering questions and everything. (A2)

Discussion

Taken together, the current findings highlight that the participants perceived the PULSE program as supporting their three basic needs. Mean scores from the LCQ indicated very high perceptions of needs support on all three subscales as the mean scores were all above 6.5 on a 7-pt likert scale. These high scores were then further supported by the qualitative interviews.

From the interviews it was evident that the youth felt that their needs were supported in a variety of ways. The youth discussed the experience of having choice in the types of physical activities they could engage in during the program sessions and it appears that they greatly appreciated this freedom of choice. It may be particularly

important to support the need for autonomy for youth by providing choice as research has shown that this is a time when youth become increasingly independent (Tremblay et al., 2007; Rhodes, Naylor, & McKay, 2010). In addition, it appears that this autonomy support may also help the youth develop competence in a variety of PA behaviours. The youth explained how the leaders first taught and demonstrated the different exercises and then provided the encouragement for the youth to practice these skills on their own. A key strategy used in the PULSE program that may have also helped the youth develop competence was the use of individual workbooks (see Appendix A) where the youth would track their own progress for all of the different activities in which they engaged. Previous research has shown that the use of self-referenced standards as indicators of improvement instead of comparative or competitive standards led to increased competence (Ames, 1992; Ntoumanis, 2001; Quested & Duda, 2010).

The results also indicated that the leaders supported the need for relatedness. The youth discussed how they felt supported by the leaders by being available whenever the youth needed them and helping them succeed in the program. The youth also shared that they could trust the leaders and as a result many of the youth discussed how they would talk to the leaders about personal issues because of this trust they felt. Finally, the youth seemed to appreciate the level of expertise and knowledge the leaders had to share with them related to PA. Although research has found that relatedness is not as strong of a predictor compared to competence for intrinsic motivation for PA and leisure time PA (Cox, Smith & Williams, 2008) it is a very important component for positive youth development programming such as life skills-based PA programming as research has shown that providing a supportive and caring environment that promotes bonding is

needed to enhance the overall development of youth (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Durlak & Weissberg, 2007)

An important finding from this research is the finding that youth report transferring what they have learned in the PULSE program into their lives outside of the program. A number of researchers assert that youth programs that can facilitate the transfer of life skills outside of the program are the most promising in fostering positive outcomes that will enable youth to succeed (Danish, 1996; Gould & Carson, 2008; Petitpas, Cornelius, Van Raalte, & Jones, 2005). Moreover, research has shown that meeting the psychological needs of youth in the context of PA may aid in fostering PA beyond adolescence (Standage et al., 2005). One of the overall goals of the PULSE program was to help youth transition to being active on their own. The results of this study suggest that when program leaders support the psychological needs of youth, in particular autonomy and competence, youth seem to be able to learn the skills necessary to develop their own workout plans to use outside of the program as well share what they have learned with family and friends.

This is the first study known to the authors to examine the link between the basic needs and life skills programming. Recent theoretical commentary posited that life skills programming should support the basic needs (Hodge, Danish & Martin, 2012) and the current findings serve as initial evidence in support of this claim. Thus, it seems that the basic needs can be indeed supported in properly structured PA and life skills programs. In addition, Basic Needs Theory posits that supporting the three psychological needs will lead to increased psychological functioning and the goal of life skills programming is to enhance youth development. Having such similar goals combined with the results from

this study provides further support of the integration of Basic Needs Theory into the LDI framework on which a number of life skills programs for youth are based.

Based on this study and the research which has shown that needs support can lead to increased intrinsic motivation for PA and leisure time PA (Cox et al., 2008; Ntoumanis, 2001; Standage et al., 2005) there are a number of recommended strategies for leaders of PA interventions for youth. First, to nurture perceptions of autonomy, leaders can provide opportunities to choose different types of activities and ask for input from the youth. To support the development of competence leaders should focus on individual improvement through encouragement and the having youth track their own progress as opposed the youth competing or comparing themselves to others. Finally, to support the need for relatedness it is important that the leaders of the program make time to create positive relationships with youth and establish a trusting non-judgemental environment.

However, this research is not without its limitations. A potential source of bias for the current evaluation was the use of self-report measures to examine needs support. Future research is needed that incorporates observational data to more objectively measure whether the leaders are providing a needs supportive environment. A second limitation was that the program leaders conducted the interviews. Although this method may lead the youth to rate the program positively and to discuss positive aspects of their experience, researchers have recognized that youth are often more likely to open up to an individual with whom they know, have interacted with and trust, rather than a third party interviewer (Heath, Brooks, Cleaver, & Ireland, 2009). However, it should be noted that the youth were able to discuss concrete examples of how these needs were met which

provides evidence that the youth were not just agreeing with leaders and providing socially desirable responses. In addition, these results are based on a small sample in a unique program and therefore may not be generalizable to other life skills-based interventions.

In addition to limitations, there are also a number of recommendations for future research. First, longitudinal research is needed to examine the link between needs support and sustained independent PA. Second, studies are needed to examine whether supporting the three basic needs leads to positive developmental outcomes for youth. Third, there is a need for qualitative studies to better understand how these needs are best supported in life skills programming.

In sum, the PULSE program is a community-based PA and life skills program that appears to have supported the three basic needs of autonomy, competence, and relatedness. Moreover, based on the experiences the youth shared it appears that this support helped them feel confident enough to be independently active outside of the program. In addition, researchers in both positive youth development and PA programming may note the current findings and recognize that community-based youth programs which explicitly address PA and life skill development using the LDI framework may be able to support the basic needs which, based on the tenets of the Basic Needs Theory, should lead to the development of optimally psychologically functioning youth.

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General Discussion

The overall purpose of this doctoral dissertation was to evaluate the impact of the PULSE program, a community-based PA and life skills program. The following general discussion will focus on providing a summary of this overall evaluation. First, a review of four articles will be presented with a focus on how the findings from the different studies intersect. This review will then be followed by a discussion of the overall perceived impact of PULSE. Finally, the general limitations of the research, directions for future research and recommendations for practitioners working with youth will be presented.

The first article presents the impetus for the formation of the PULSE program. More specifically, the need for more PA opportunities for youth, particularly at-risk youth, to help reverse the current trend of physical inactivity (AHKC, 2011). After reviewing the research and current guidelines it was recognized that there is a need for interventions to help youth develop the self-regulation skills as they are in a life phase that represents transition to independence (Tremblay et al., 2007). More specifically, the intersection of life skills that emphasize self-regulation and PA has been posited as a central mechanism for long-term PA adoption and maintenance for adolescents entering adulthood (Rhodes, & Pfaeffli, 2010; Rhodes, & Dickau, 2012; McDonough, Ullrich-French, Anderson-Butcher, Amrose, & Riley, 2013). To respond to this lack of PA opportunities for youth The PULSE program was developed. The overall goal of PULSE was to provide a developmentally appropriate understanding of resistance training and aerobic training as well as to help youth learn how to self-regulate their PA. PULSE was grounded in two PYD frameworks for community-based programs, the LDI (Danish & D'Augelli, 1980; Hodge & Danish, 1999) and the TPSR model (Hellison, 2011).

The first evaluation study (article 2) examined changes in the five levels of the TPSR model over the course of the program as well as the perceived impact of the PULSE program related to the five TPSR levels. The findings indicated that the youth showed a gradual increase in the TPSR levels. Although the changes from pre to post program were not extensive the interviews with the youth provided further evidence that the youth did progress on the levels. The youth were able to provide concrete details regarding their use of the TPSR levels and associated life skills both inside and outside of the program. The participants also explicitly stated that they obtained practice at specific skills in the program context, and attributed subsequent changes in their use of life skills outside of the program to their involvement in the program.

Findings from this research also demonstrate that using self-ratings of the TPSR levels throughout the course of a program may be quite valuable in fostering positive outcomes. One of the qualitative themes that emerged was that participants believed that by tracking their own levels of the TPSR model helped them to maintain focus and enhance effort in the program. This finding is supported by past research that has shown that when social environments, such as youth programs, create a task-involving climate by incorporating self-referenced standards, it can lead to a number of positive developmental outcomes (Eccles, Wigfield, & Schiefele, 1998; Larson, 2006). According to Nichols (1989) a task-involving climate focuses on self-referenced perceptions of ability. One in which the individual learns that success is evidenced through developing new skills, putting forth effort, and improving personal performance (Nicholls, 1989). Therefore, these results suggest that recording the TPSR levels through self-ratings may be an effective practice for creating a task-involving environment.

Furthermore, the results of this study showed support for the combination of the TPSR model and the LDI framework. It was noted in the results that in sessions where the youth showed increases in their self-ratings of a particular TPSR level, it was also a session when a life skill related to that level and drawn from the SUPER program was integrated. For example, for self-control, session eight recorded the highest self-rating and it was also the session that the leaders taught emotional regulation. It was also observed that there were increases in self-ratings of self-coaching in sessions 3, 5, 6 and 7 when the leaders taught the youth about goal setting through the specific life skill material drawn from SUPER. In addition, the results of the qualitative analysis showed that a prominent theme in this study was that the youth discussed learning how to self-coach because they learned about how to set goals. These findings suggest that the LDI framework (SUPER) and TPSR model may be complementary, and as such help reinforce the development of self-regulation skills in youth in the PULSE program. As noted above, this combination of program frameworks also allows program leaders who are not specifically skilled in the TPSR framework to understand and apply the PULSE program.

Another finding that further supports the integration of LDI and the TPSR into community-based youth programming was the reports from participants using a combination of levels and life skills to achieve a goal or desired state of being. For example, one participant stated that she was able to practice self-control by consciously having a goal that involved using focused relaxation techniques as a coping mechanism for times where she felt she was about to “blow up”. While self-control would be the TPSR level that this participant was discussing, she used goal-setting and relaxation, two

life skills that were taught but are also important in learning how to self-coach. A number of other examples followed the same pattern, where one TPSR level or life skill was the conscious label that the participant used, but in order to effectively enact this level the participant discussed using additional life skills. This speaks to the fluid integration of the TPSR model and the LDI based SUPER program.

In regards to article 2, but also to the overall evaluation across the current articles, it is worth noting that the program may have had variable effects for participants due to both varied internal assets upon entering the program, but also varied ability to engage with the program material, build relationships with other participants and program leaders, and to apply the ideas from the program in their own lives following the intensive program (Gould & Carson, 2008).

The second evaluation study (article 3) focused on the outcome evaluation of the PULSE program. In brief, the results were promising in that participants performed better on a variety of fitness measures and also reported increases in PA levels, social responsibility and self-regulation skills. In addition, an interesting observation was that the PULSE program led to increases in PA levels despite the documented seasonal effect in Canada on PA may have also contributed to moderate increases in fitness. Bélanger and colleagues (2009) found through their longitudinal research with youth that there is an average of an 11% percent decline in PA when transitioning from Fall into Winter months. Furthermore, Bélanger and colleagues note that these drops in PA behaviour are quite concerning as PA levels increase in the spring the levels do not return to baseline. Therefore, the increases observed in this research may be considered more successful than a cursory glance at the descriptive statistics suggests.

This increase in PA may be in part explained by the teaching of self-regulation skills as the SOC measure of self-regulation accounted for a large percentage of variance in the PA levels. Recently, researchers have recognized the role that self-regulation may play a role in PA behaviour and as a result very little research has been conducted in this area with youth. One study examining a youth PA program called MyFit found that youth can develop and increase the use self-regulation skills in a school-based PA intervention (Grim, Petosa, Hertz & Hunt, 2013). The results of the evaluations regarding the PULSE program are consistent with the research by Grim and colleagues but also extends this work as it provides initial evidence that self-regulation can predict PA behavior. Overall these findings provide further support for integration a PYD approach, in particular the development of self-regulation skills into PA interventions for youth.

The findings regarding the optimization subscale of SOC and the personal responsibility subscale of the PSRQ are problematic; however, as mentioned above the intensification of school demands may negatively affect both the personal responsibility items of the PSRQ and the ability of participants to optimize their progress towards achieving their goals. Follow-up measures and timing the program in order to collect measures to correspond with periods of low and high academic demand may further the understanding of these results.

The results from the third evaluation paper (article 4) indicated that the youth perceived the PULSE program as supporting the three psychological needs of autonomy, competence and relatedness. As discussed above, this study was the first study to test whether a life skills program could support these needs and provides initial evidence that life skills program based on the LDI can support the basic psychological needs of

autonomy, competence, and relatedness. Research has shown that autonomy supportive relationships, such as those reported by the youth participating in PULSE can help meet the basic needs of competence, autonomy, and relatedness, and as a result can lead to increased self-determined motivation, prosocial behavior, and PA behavior (Amorose & Anderson-Butcher, 2007; Gagné, 2003; Mageau & Vallerand, 2003; Vierling, Standage, & Treasure, 2007).

These findings may also extend to the support of integrating the LDI (through the SUPER program materials) and TPSR to develop the PULSE program. A recent study by McDonough et al. (2013) that examined a TPSR based program discussed how Basic Needs Theory could provide a useful framework understanding positive outcomes such as social responsibility. They explain the construct of autonomy support largely reflects Hellison's (2000) second principle of social responsibility where within a TPSR program there is often a gradual shift in power and decision-making from leaders to youth. Therefore, the results from article four and the recent paper by McDonough helps to further recognize the potential value in combining program frameworks such as the LDI and TPSR. It appears that the combination of these frameworks contributed to a successful PA program that was perceived by the youth as leading to increases in PA behaviour, the development of self-regulation skills, as well as supporting the three basic psychological needs.

Overall, the four papers outlined above have shown that the PULSE program may represent a viable community-based physical activity and life skills program that was perceived by the youth as a success in a number of ways. PULSE successfully combined two life skills program frameworks to simultaneously increase fitness, PA levels and self-

regulation skills both in and outside of the program setting. The success of PULSE may be explained by the fact that it was successful in incorporating a number of characteristics that research has shown to be important in the development of effective youth programming. Related to Catalano's (2002a) recommendations the PULSE program appeared to be successful in developing behavioural competencies in PA, increasing healthy bonding with adults and providing structure and consistency in program delivery. In line with the recommendations from Durlak et al., (2010) PULSE presented a Sequenced, Active, Focused, Explicit (SAFE) program structure. The youth shared that the leaders taught the skills first (sequenced) and then provided time for them to engage and practice the skills taught (active). In addition, PULSE placed a primary emphasis on skill development (focused) which seemed to lead to the youth developing self-regulation skills, an overt goal of the PULSE program (explicit).

Finally, the PULSE program incorporated the majority of recommendations recently forwarded by the WHO for encouraging adolescent PA (Kelly et al., 2012). These included providing ease of access of the location, keeping costs of the program low, ensuring a high quality of equipment and facilities, promoting positive attitudes, placing a focus on personal achievement, integrating mentors when possible, creating an awareness of the benefits of being healthy, providing a choice of activities, increasing independence and self-confidence, helping youth learn skills to be able to relax, and ensuring the activities integrated into the program are fun and enjoyable. In this regard the PULSE program may be considered an example of potentially effective way to integrate a PYD approach into PA intervention to enhance the overall health and well-being of youth.

Limitations

The general limitations of this research represent those that are often inherent in working with a community-based sample of at-risk adolescents. The necessary challenges regarding implementing health programs with community samples are summarized in Peters et al. (2013):

This approach implies a readiness on the part of the implementation researcher to embrace the unpredictable and otherwise problematic on occasion, in a way that other researchers might not. It also implies using study subjects in all their complexity and in their natural environments. This means working with populations that are actually going to be affected by an intervention, for example, rather than selecting populations on the basis of narrow eligibility criteria. (p. 35)

The smaller sample size for the current study affected the statistical power of the quantitative analyses and potentially the diversity of themes from qualitative data..

Although the researchers foresaw a time commitment necessary to recruit the current sample, and while recruitment is a universal struggle for interventions, the school context and specifically targeting at-risk youth proved to be especially labour-intensive. In addition, many of the youth had competing activities such as other extra-curricular activities, work commitments, and family responsibilities (e.g., taking care of younger siblings).

Although recruitment efforts helped to recruit the core group of youth who completed the program, there were youth who attended at least one program session, and up to as many as six program sessions. However, these youth did not attend with enough regularity to have completed the program measures or to have been considered a participant in the program. In select cases, these youth were referred to the program through the guidance department as highly at-risk adolescents. It is a potential limitation that a structured, regular program like PULSE that is tied to a secondary school may not

serve this highly at-risk subgroup. Therefore, community-based PA and life skills programs may need to be designed differently if highly at-risk youth are the target population.

The nature of a voluntary, community sample also led to high initial attrition rates, and later program dropouts. The initial group of participants at both program sites varied over the first few sessions before the participants who completed the program became a cohesive group. The effects of dropouts and those potential participants who attended the program only very sporadically may have affected the sample in unforeseen ways.

Future research may incorporate different strategies to ensure that a group more likely to attend all sessions is recruited such as explicitly requiring consistent attendance in initial program sessions. Problems of initial attrition and dropout is a known issue in conducting program with at-risk adolescents in the community (Whitley, Forneris, & Barker, 2013). However, as noted by Martinek and Hellison (2009) when working in the community with youth it is recommended that a small group is recruited. They further explain that since all community programs will have kids who attend often or from time to time, it is best to select the youth who will attend often. Overall, although the sample for PULSE was rather small it appears that this may have been a realistic sample for a community-based program for at-risk youth.

The PULSE program faced a number of challenges as a result of choosing to collaborate with a community youth service provider to offer the PULSE program (through a grant from the Ontario Trillium Foundation). Inherent in the intentions of the researchers involved in the PULSE program was to design, implement, and evaluate programming that addressed life skills and PA for at-risk adolescents in a community

context (Barker & Forneris, 2011; Barker, Forneris, & Fortier, 2013). However, in choosing to operate in this context the researchers accepted the potential for smaller sample sizes, additional responsibilities regarding recruitment, programming, retention of participants, navigating the secondary school context, and the other difficulties associated with working in the community context. Furthermore, the unique pressures of developing and implementing PULSE using community-based funding and working with a youth serving organization based in the community presented, at times, unique challenges. Program funders have a set of criteria for success that is potentially at odds with research (Peters et al., 2013). Had the PULSE program been funded by a research body the ability to apply resources (research assistants, paid staff, more researcher capacity) to apply to the program at different stages of recruitment, active programming, data collection, and follow-up at the two high schools would have improved. This, in turn, could have assured that the original intended methodology including a control group would have been feasible. As noted by Peters and colleagues there are “mismatches between programme needs and research objectives, and creates a disincentive for researchers to link their work to the actual barriers and challenges that are encountered during the implementation of programs” (p.37). While the above statement is true for the overall evaluation of the PULSE program it specifically became pertinent through the ability to both carry out a quasi-experimental design with a control group as well as effective implementation and reporting for the community-based grant.

In working with various stakeholders (funders, schools and youth) while also evaluating the program as a researcher it was important that the program was both relevant and perceived as worthwhile. The youth in the program were diverse in a

number of respects (cultural and racial profile, socioeconomic status, risky peers, and access to community resources) while sharing membership in an Urban and Priority School. As a result, they likely varied in their ability to receive, understand, and apply the central message of the program, that learning and applying life skills in their PA and other important pursuits can improve their effectiveness in these areas. Hence, the above results may be hampered by a subset of participants who did not “get” the program or were unable to apply the central ideas in the program regarding life skills. However, as the leader of the program and after working with the community funder and schools it was evident that this program was perceived as valuable and having an impact on the youth as well as within the community.

Finally, in this research because the main program leader was also the lead researcher, the necessary presence of the primary researcher as program leader may have unduly contributed to social desirability, unconscious biases in data collection (both quantitative and qualitative), and using expert knowledge in a non-replicable manner. However, in the current case and with the above community program funding structure for the program these potential biases were unavoidable. Further, in the case of qualitative data collection, research has identified that youth are more likely to open up to those with whom they are familiar and have built a relationship of trust (Heath, Brooks, Cleaver, & Ireland, 2009).

Overall, this doctoral thesis has facilitated the development, implementation and evaluation of the PULSE program. Despite the limitations discussed above, the results appear to support for the overall objective of PULSE which was to provide at-risk youth the opportunity to be active and develop skills related to self-regulation.

Future Research

There are a number of potential directions for future research based on the findings of this thesis. These include employing a quasi-experiment or experimental design as a control group would allow for the examination of causal relationships between participation and outcomes. As discussed above, this type of research design can be difficult when using community-based funding and therefore it is recommended that researchers ensure enough funding to have the resources to make a quasi-experiment or experimental design feasible. In addition, since self-regulation is forwarded as a potential mediating factor in PA (Maes & Gebhardt, 2000; Rhodes & Pfaeffli, 2010), future studies of the PULSE program may be able to further examine, using longitudinal research, whether or not the development of self-regulation skills leads to greater levels of PA behavior past the completion of the program (in phases two and three). Similarly, future research is needed to examine the relationships between perceived support of the basic psychological needs of autonomy, competence and relatedness and PA behavior as well as other positive youth development outcomes.

In contrast to extending the above research designs towards control-group and semi-randomization there may be value in attempting utilize multiple case studies in further understanding the PULSE program and the experience of participants as they transition into independence away from the program. The potential benefits of case studies might include further understanding successful and unsuccessful experiences with the program that may in turn help to suggest future variations on the PULSE program or more generally for PA and PYD programming. The further potential benefit of case studies or multiple case study designs would be the potential feasibility of these research

designs given the potential for ongoing community program funding for the PULSE program.

Another goal of this work was to develop a program that would extend beyond just this doctoral thesis. Currently, there may be a future of the PULSE program with the YMCA of Ottawa. In recent pilot work with the YMCA a group of youth were recruited through a community-specific social worker program to examine the feasibility of implementing the PULSE program independent of the high school context. This pilot work has been promising and has led to further discussions of how to move forward with the PULSE program together. Furthermore, the PULSE program material has also been adapted to the leader training and participant materials for the Y Kids Academy, a structured introduction to PA at the YMCA for grade six students in the National Capital region of Ottawa, Ontario. These initial steps are promising signs that the PULSE program can continue to help youth become physically active through a concentration on applying life skills in an after-school program. Given the potential scale of programming if the PULSE program is incorporated at multiple locations of the YMCA, the potential future research opportunities outlined above may be feasible.

Practical Implications

There are also a number practical implications of the current research. First, the PULSE program provides initial support for integrating a PYD approach into PA programs for at-risk youth. More specifically, the PULSE program showed that through such integration youth can develop and practice self-regulation skills inside and outside of the program while simultaneously increasing PA levels and fitness. Therefore, it is recommended that practitioners involved in helping youth become active consider the

value of integrating a PYD approach. Second, related to designing community-based PA programs, this research demonstrated that integrating the LDI and TPSR frameworks can result in tenable programming. Moreover, it was also observed that this integration can result in the teaching of life skills reinforcing the development of the TPSR levels. For example, the teaching of goal setting from SUPER through the program workbook material may help youth enhance their ability to self-coach while teaching how to manage emotions (drawn again from SUPER) may further reinforce the TPSR level of self-control. As a result, practitioners may want to consider the integration of such frameworks to ensure that youth have a greater opportunity to develop the life skills and levels of responsibility to succeed in life outside of the program. Third, this research also provided support for the integration of Basic Needs Theory into the LDI framework and showed that a program based on the TPSR model may also support the three basic needs of autonomy, competence and relatedness. Hence, the results of this research provides even further evidence for incorporating the LDI and TPSR when wanting to develop programs that support the three basic psychological needs. This may be particularly important given the past research showing that supporting these psychological needs can lead to increased motivation for PA for youth (Standage et al., 2005).

Conclusion

From the current and emergent literature, the need for remediation of PA levels in youth is clear (WHO, 2010; Public Health Agency of Canada, 2010; Salmon, Booth, Phongsavan, Murphy, & Timperio, 2007). There is also a need to get kids active, particularly in the after-school period (AHKC, 2011). The PULSE program represents a promising opportunity that would respond to these needs. Despite the inherent challenges

in implementing a community-based program with at-risk youth, the above findings suggest that a community-based PA and life skills program such as PULSE may contribute to increased PA levels and enhance the overall development of youth, particularly the use and transfer of self-regulation skills.

Statement of Contribution

I, Bryce Barker, was responsible for the development and implementation of the PULSE program as well as the data collection of each submission paper included in the current thesis submission. I was also responsible for writing each of the four articles included in this submission. Tanya Forneris provided reviews and suggested edits for each of the papers and offered her perspective on the presentation of the data in each of the submission papers. Michelle Fortier offered suggested edits and guidance on the individual papers to ensure that they were clear and offered valuable feedback to improve the quality of the current submission.

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Appendices

Appendix A
The PULSE Workbook





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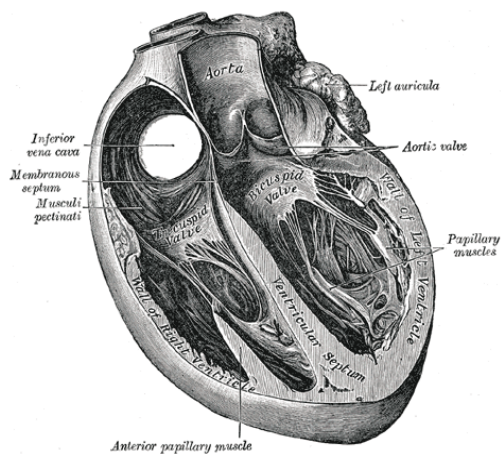
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Exercise is a Science. Exercising is an Art!

Exercise is really scientific. It's how your muscles move, how you take in and use oxygen, it's how your body moves objects through space. This is why we put pictures of anatomy in the workbook.

Exercising is an art, you do it because it feels good, helps you function or compete better, and because you like it. You choose how you exercise, where, for how long, and with whom. You do it when you're busy, at school, at home, in a gym. Exercising is an art. This is why there's a bit of art in the workbook. Just like art, it takes skills to work out regularly. We call these life skills.

These are the same skills that we use on a daily basis to get things done, maintain healthy relationships, and work towards our goals in life, so we will often talk about those ideas here. In this program we focus on resistance training and aerobic training because that's what we know best. We'll bring in different sports and exercise professionals from different backgrounds so that we all get the chance to try new ways to have a good time exercising and playing sports.



The PULSE Program

After you finish this program hope you'll be PULSED, excited, ready to go out and use the exercises and skills we've worked on.

The PULSE(D) Program

The PULSE(D) program is an acronym for:

Push

Pull

Lift

Stand

Educate

Drive

Before we go any further I want to ask you to flip for me. Not you, the word PULSE(D). DESULP, not a great word, but a great approach to this program.

DRIVE

EDUCATE

STAND

LIFT

PULL

PUSH

These are physical movements that, if we learn to do correctly, can help us achieve and better strength and fitness. They are also things we do in our lives; push ourselves out of bed to start the day, pull good things and people in to our lives, and so on.

Drive means everything that pushes us forward (walking, running, biking, swimming, etc.) and takes us to new places. We need to drive these movements and ideas in to different parts of our lives for them to make a difference in the way we go through life. We're here to help you do that.

Below is a table that explains how the program will use our name to represent what we are doing here. These aren't set in stone, we just want to drive home the idea that it takes skills to be successful with exercise, and we'll work on those skills while we work on movements.

<u>Acronym</u>	<u>Movements</u>	<u>Skill</u>
Drive	Run, Swim, Skate, Bike, Sport	Transfer to Life
Educate	Motor Learning	Healthy Lifestyle
Stand	Squats, Lunges, and Variations	Leading
Lift	Deadlift, variations	Seeking Help, Leading
Pull	Row, Chin Up, variations	Road Blocks
Push	Push Up, Press, Dips, variations	Effort

Your Responsibilities

1. Self-Control

Of your language and conduct

When using the facilities

2. On-Task

Focus

Effort

3. Self-Coach

Can work independently

Can set and do goals

4. Leader

Can teach training skills

Can give positive feedback

Can step up, take charge, & quickly begin the activity

Unselfish: Cares about the development of others

5. Truly Strong Person

Lives these responsibilities outside of the program

Is a role model for others

Uses personal strength to help others

Our Responsibilities

We are here to:

- Teach you how to train
- Help you become a leader
- Help you to become a truly strong person

The Rules

- 1
- 2
- 3
- 4

The Consequences

- 1
- 2
- 3
- 4

Evaluate Responsibilities

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Date:	1	2	3	4
	Needs Work	Okay	Good	Great
Self-Control	1	2	3	4
On-Task	1	2	3	4
Self-Coach	1	2	3	4
Leader	1	2	3	4
Truly Strong Person	1	2	3	4

Evaluate Your Fitness

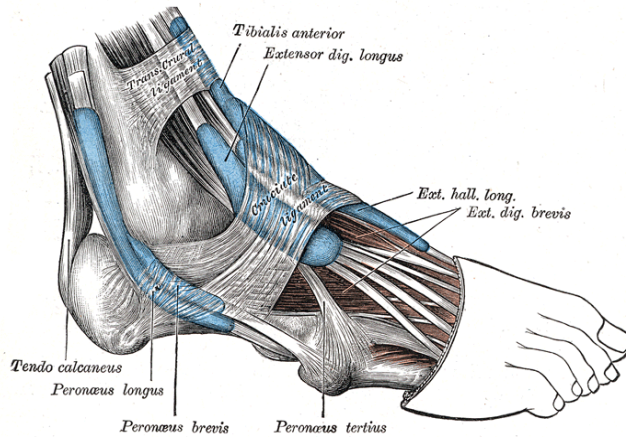
Date	# of Pushups	Broad Jump	2 minute run

The Breakdown

Every section will be broken down in to an exercise section and a life skill section. We'll talk about exercise and life skills every day in the program.

Day 1

Drive



John Brown, 1681 (a compleat treatise of the muscles...)

There are a hundred ways to *drive* yourself from Point A to Point B. Walking, Running, Biking, Rollerblading, Skating, Snowboarding, Cross Country Downhill Skiing, Swimming, and we can think of a lot more.

The science behind these physical activities can be very easy or it can be very complex. All of these physical activities can be used to manage weight, and improve the health of our organs, muscles, and bones.

Form

Take the time to learn the form of any DRIVE exercise at the beginning of doing it. All exercises can be healthy if done correctly. When done with bad form you can injure yourself in some pretty nasty and hard to repair ways. Seek one on one instruction or use the resources you have access to. Once you understand the principles you can then begin to apply simple training ideas to improve on your chosen exercise

Intervals

Intervals are a work period followed by a rest period for a given number of minutes or for a given number of sets (groups of work and rest periods). Certain intervals have been tested scientifically; others come from developing on the scientific literature and from strength coaches. Intervals are a good way to “get strong before you go long”, a way of working on good form for short bursts and then working to maintain good form as you work for longer periods of time. They are also widely used in athletic conditioning, as you work hard and then begin to work before you are fully rested, just like in a lot of sports. Here are some ideas for using intervals.

Always warm up by engaging in your activity for a few minutes before beginning intervals. It is also helpful to cool down after intervals, and stretch.

Work for 20 seconds, rest for 10 seconds, repeat eight times.

Work for 30 seconds, rest for 30 seconds, repeat 3-6 times.

Work for 45 seconds, rest for 15 seconds, repeat 3-6 times.

Work for one minute, rest for one minute, repeat 2-4 times.

Work for five minutes, rest for one minute, repeat 2-4 times.

Distance

Distance is a useful way to gauge your progress in all DRIVE exercises. There are a few ways to approach distances. One is to run for a set period of time and see how far you can get. This idea forms the basis for a very popular fitness test where a person will see how many times they can run twenty meters and back in two minutes. The more laps you can finish the better you've gotten at running, and the better running shape you're in. Another variation on this approach is to pick a distance and see how fast you can finish it. This option is what almost all races are based on in bicycling, track, swimming, etc. You pick a distance and try to see how fast you can run that distance. The distance will depend on the activity. A few examples are given below.

It is important to warm up and cool down, and to make sure that your form is good before you attempt to run for distance or time. Always warm up and cool down to avoid injury.

Timed

See how far you can go in:

5 minutes

15 minutes

30 minutes

Distance

Running: 1km 2km 3km 5km+(build a base for a few months before attempting 5km or more for distance)

Biking: 5km 10km 20km+(build a base for a few months before building to 20km or more for distance)

Swimming: 100m (4 lengths) 200m(8 lengths) 400m(16 lengths) 800m (32 lengths)
1km(40 lengths)

You can use the same ideas to work on your fitness for other DRIVE activities like walking, rollerblading, skateboarding (or longboarding), any physical activity that gets you from point A to point B.

Remember to warm up, cool down, use good form (or get some instruction) and stretch.



DESTINATION: MY FUTURE

*Dreams are what you want for yourself. You can have many different dreams. Think of some of the dreams you have for your future. Think of your **BEST** possible future-- the things you would most like to happen.*

10 Years From Now

I will be _____ years old.

MY CAREER

What am I good at?

What am I interested in?

MY HOBBIES

What do I like about fitness and/or sports?

What other sports or activities do I like?

Day 2

For a dream to be a reachable goal it must have four characteristics:

Important to you

Stated positively

Specific

Under your control

Your Goal must be IMPORTANT TO YOU!

If a goal is important to you, you will work hard to reach it. Ask yourself, “Is this goal important to me?”

Write down a goal that you have that is important to you!

Your Goal must be STATED POSITIVELY!

- Positive goals create a picture of what to do. Negative goals only tell you what not to do. Ask yourself, “Does my goal create a picture in my mind of what to do?” If it does, then it is a positive goal.
- Goals can be positive, but not positively stated. For example, “I do not want to miss school” is positive, but not positively-stated because it has a “not” in the sentence.

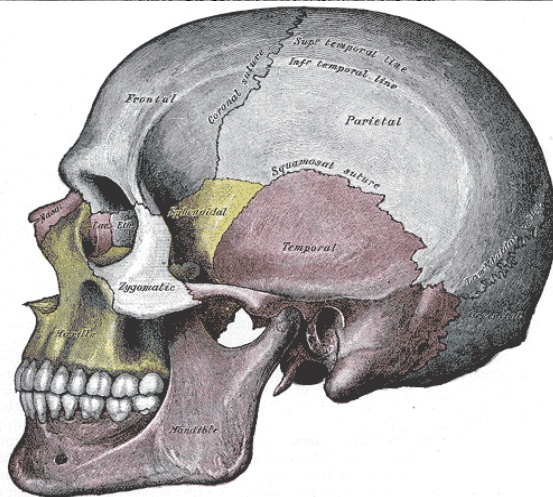
When we state something positively, we create a picture in our minds of what it is we want to have happen, rather than something we don't want to have happen. Your body will listen to what you tell it to do

Rewrite your goal on the lines below and make sure that it is positively stated.

Positively stated goals never have words like “cannot”, “not”, or “avoid” in them.

Day 3

Educate



While the connection to physical activity might not seem to be very literal here, we literally must go through the process of learning when it comes to new exercises and skills in sports. There are hundreds, if not thousands of variations and combinations of the basic resistance and aerobic activities, especially when we look at different sports, types of dance, and martial arts. From Motor Learning, a branch of Sport Science we have a few clues about training our bodies to become proficient at new movements:

1. Practice Makes Perfect

The more you practice a new movement, the more proficient you will get at it. Remember how awkward it was to try to get on a bicycle the first time? *If you want to get good at something give yourself some time, and practice often.*

2. Perfect Practice Makes Perfect

In practicing advanced techniques keep in mind that sloppy practice makes for sloppy execution. If you want to get good at a movement, exercise, sport, or any physical skill you must practice with good form. *Try to use perfect form when we try a new skill in sport or exercise.*

3. Our Bodies Remember the Last Try (or Repitition), So Make it Good

Have you ever wiped out trying something new and then felt nervous the very next time you tried again? The same thing happens in exercise and sport. If you always do a new exercise or skill until you fail at it, your mind and body will remember the sloppy form and feeling of failure, just like you remember the wipe out mentioned above. *Make the last rep or attempt a success to learn how to be successful. Build on constant success. Know that if you are consistent and use good form you will get to your goal.*

Day 4

Developing a Healthy Lifestyle

One who has health, has hope; and one who has hope, has everything.

~ Arabian Proverb

Some behaviors can hurt your health and from reaching your goals.

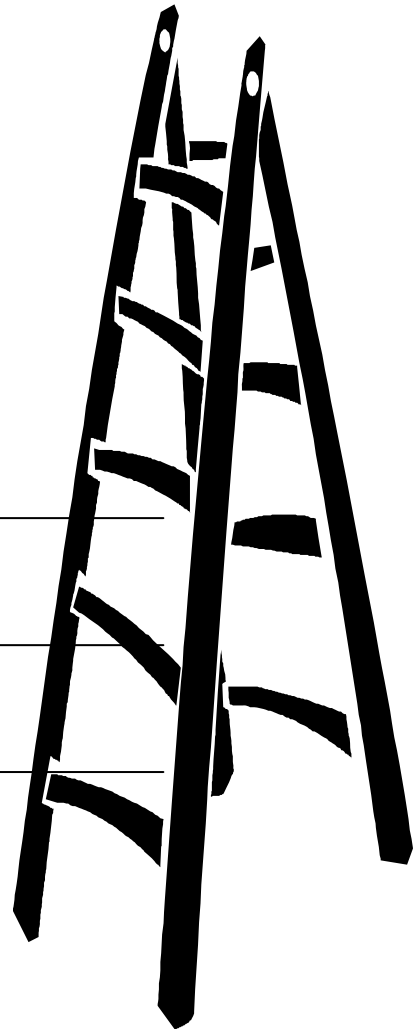
Some of these unhealthy behaviors that may stop you from reaching your goals:

- Hanging around with the wrong people
- Dropping out of school
- Getting into fights
- Not managing your emotions
- Breaking the law
- Smoking, taking drugs, drinking alcohol
- Not being in good physical condition.
- Lacking self-confidence
- Unsafe sexual activity

It is important that you have your own activities that you do to stay healthy:

Write down six things that you will do to stay healthy and help you reach your goals:

1. _____
2. _____
3. _____



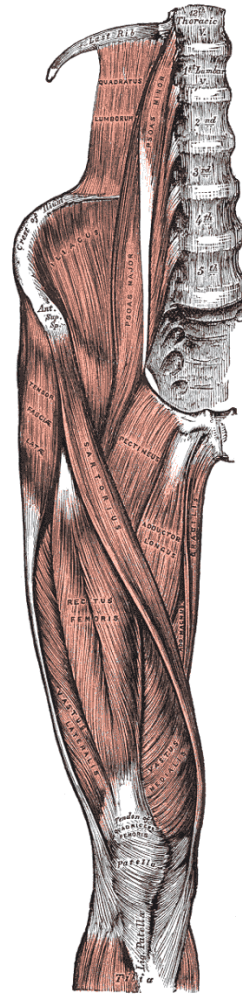
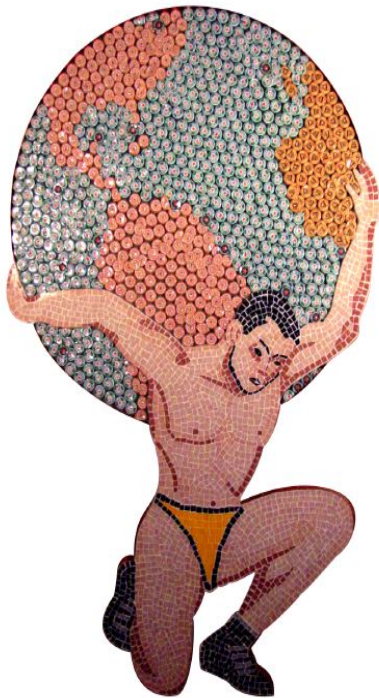
4. _____

5. _____

6. _____

Day 5

Stand



Standing exercises have a lot of names, mostly centering around the squat (picture standing up from a chair), or the lunge (a big step forward where you let your trailing knee lightly touch the ground). We've matched standing with leading and with seeking help from others because standing up to a situation or person is sometimes the most important thing that we can do, and if we have help we can make a positive difference in our lives, and the lives of others.

Bodyweight	Dumbbell	Barbell	Machine
Squat	Goblet Squat	Squat	Smith Machine Squat
Sumo Squat	Reverse Lunge	Reverse Lunge	Leg Press
Reverse Lunge	Lunge	Lunge	
Lunge	Walking Lunge		

Walking Lunge			
---------------	--	--	--

LEADERSHIP

Leaders are a natural part of any group of people. Someone usually begins to direct groups of people to do one task or another when they get together as friends, in class, or at home. Some leaders don't necessarily act nicely in their leadership roles and may be more like Dictators or *Destructive Leaders*.

Other people are very good leaders, and help the groups they lead by being constructive members of a team that help direct the efforts of the group towards a certain goal. We could call these *Constructive Leaders*.

Name a few of the qualities of:

Destructive Leaders:

1. _____
2. _____
3. _____

Constructive Leaders:

1. _____
2. _____
3. _____

What opportunities do you have to be a constructive type of leader in your everyday life?

1. _____
2. _____
3. _____

Day 6

Seeking Help From the Truly Strong People in Our Lives

GOAL KEEPERS AND GOAL BUSTERS

- There are people in our lives who can support us and help us achieve our goals. These people are called **Goal Keepers**. For example, a friend or family member who supports you when you try something new, a teacher who does his or her best to help and understand you, or a member of your community who shows you how good and kind you can be to others. Goal Keepers may have you question your goals but they want to help you, not to hold you back.
- There are also people who try to get in the way or prevent you from reaching your goals. These people are called **Goal Busters**. For example a **Goal Buster** might try and get you to stay out late the night before you have school or work, they tell you your goals are stupid and you won't make it. A **Goal Buster** is any person who tells you that you won't reach your goal.

Even though we might know we need help, we may not know who to ask for help or how to ask for it. Five things to remember are:

- Seek help from people you see often.
- Seek help from people who know your strengths and weaknesses.
- Seek help from people who are concerned about you.
- There are two kinds of help, "Caring" and "Doing" help. "Caring" involves things like listening and being supportive. "Doing" involves things like helping with homework and coaching you to be a better athlete.

When choosing the Truly Strong People in your life:

- Choose family members or others who provide love, support, and caring to you and who help you reach your dreams and goals when you face roadblocks.
- Choose friends; they may be your best friends, people you really trust, and/or people with whom you spend a lot of time.

- Choose adults or people that are older than you, that help you and serve as good role models. These people may be teachers, coaches, ministers, youth group leaders, and family friends.
- It is important that you choose Goal Keepers to help you reach your goal and to stay away from Goal Busters who will only get in the way of your success.

MY TRULY STRONG PEOPLE

Identify three people in your life who are truly strong in your life. They can be family members, friends who you really trust, and/or people that help you and serve as good role models, such as teachers, coaches, ministers, youth group leaders, and family friends.

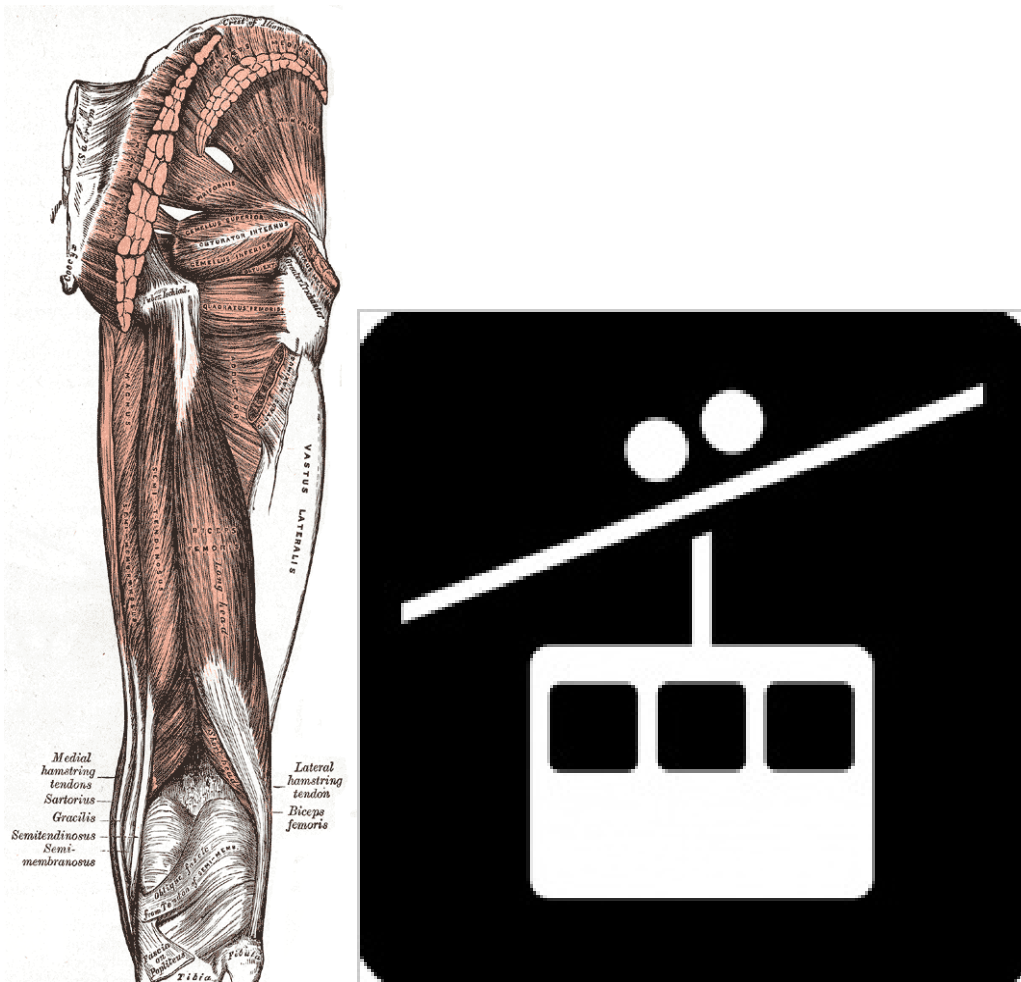
1. _____

2. _____

3. _____

Day 7

Lift



Lifting is an important movement to do right. The exercises that we associate with lifting often look like someone literally picking up an object, these exercises are referred to as deadlifts (we lift from a dead stop). Other lifting exercises don't look like someone lifting but they use a lot, or all, of the same muscles. Lifting exercises generally involve moving around your hips and keeping your back straight, or neutral (the same shape as when you are standing). Sometimes we can try to lift too much and we roll our backs toward the ceiling, this might be because we're lifting too much or we need to work on the muscles that keep our backs straight. In our lives we can often try to do too much at once, and while it can be very hard it's often important to choose what not to do as much as it is choosing what activities to do. Another aspect of the word lifting is when we say we found something *uplifting*, it's important to know what you find uplifting so that you can get yourself back to normal when things feel crazy.

Bodyweight	Dumbbell	Barbell	Machine
Torso Lift	Romanian Deadlift	Romanian Deadlift	Smith Machine Romanian Deadlift
Single Leg Deadlift	Deadlift	Deadlift	Smith Machine Deadlift
Skater Deadlift	Single Leg Romanian Deadlift Single Leg Deadlift	Sumo Deadlift	Lying Leg Curl Glute Ham Raise

Relaxation

Relaxation is a key skill for successful performance in our whole lives (school, work, fitness, sports, and relationships). It can literally lift us out of a rut and get us back on track.

What do you find relaxing?

1. _____

2. _____

3. _____

How can you work these relaxing activities in to your everyday routine?

1. _____

2. _____

3. _____

Relaxation Activity

1. Stand up and imagine that you are in a situation in your life when you don't have much time to relax.
2. Think of an object in your life that you would like to focus on in this type of situation. Picture that object in your mind.
3. Get a good picture of this object in your mind.
4. Then take three deep breaths.

Relaxation Activity #2

1. Find a comfortable position, sitting, standing, or lying down.
2. As you take in a deep breath try to feel the tension in your face and hands.
3. As you breathe out try to let out all of the air, and all of the tension in your face and hands.

4. Repeat this process, trying to relax your hands and face each time you breathe out.
5. After five breaths, stand up, take note of how much better you feel and do what you need to do.

Day 8

Managing Emotions

To be successful in reaching your life and fitness goals you need to learn how to control yourself so you can do what you planned and be successful.

There are times we get upset with ourselves (like when we play poorly). When this happens we sometimes blame other people. Blaming other for our mistakes isn't helpful. Neither is calling yourself names. Instead, focus on what you did and how to correct it. This is where the 4 R's help you to play smart.

FOUR STEPS TO LIVING SMART

1. **REPLAY** – Know what happened and what you did
2. **RELAX** – Take a deep breath
3. **REDO** – Tell yourself what you need to do next time. Make a Plan.
4. **READY** – Keep the focus on what you need to do next.

HOW I PLAY IT SMART

Think of a time when you made a mistake while playing your sport and became upset. Complete the following four steps to help you play it smart.

REPLAY- Think about and write down what happened.

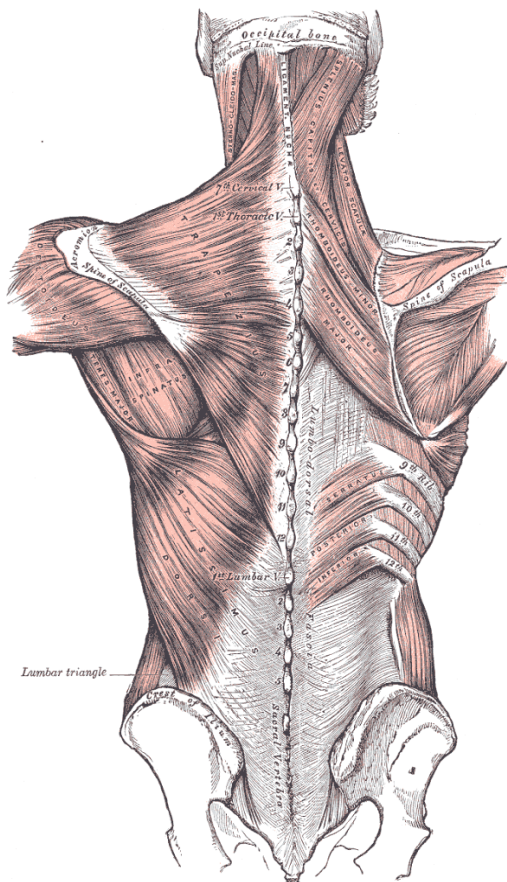
RELAX - Write down three ways you can relax.

REDO - Write down what you are going to do next time and imagine yourself REDOING your plan.

READY – Write down how you will get refocused and back into the game.

Day 9

Pull



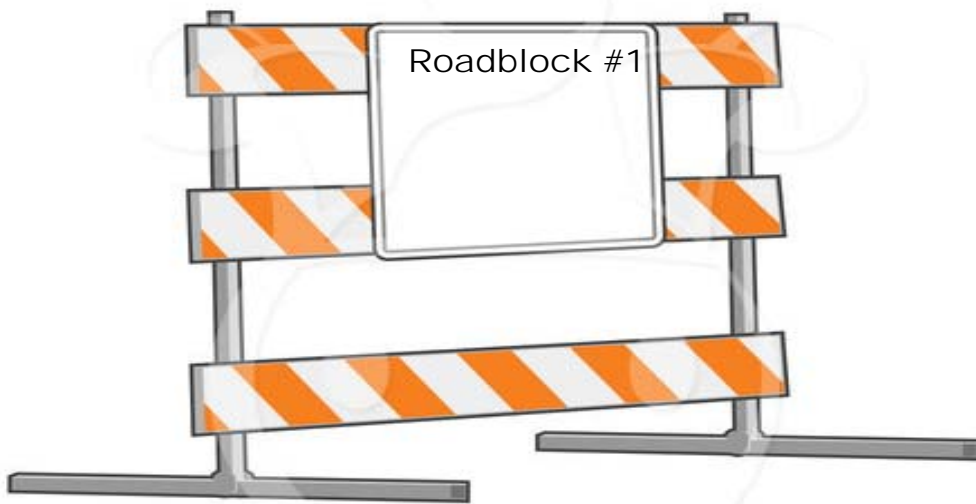
Pulling movements literally pull something toward you as in a row, or you pull yourself towards something. We often forget to pull good things in to our lives, like new friends and people who will help us towards our goals. Pulling other people up is also an important life skill, especially here at the PULSE program.

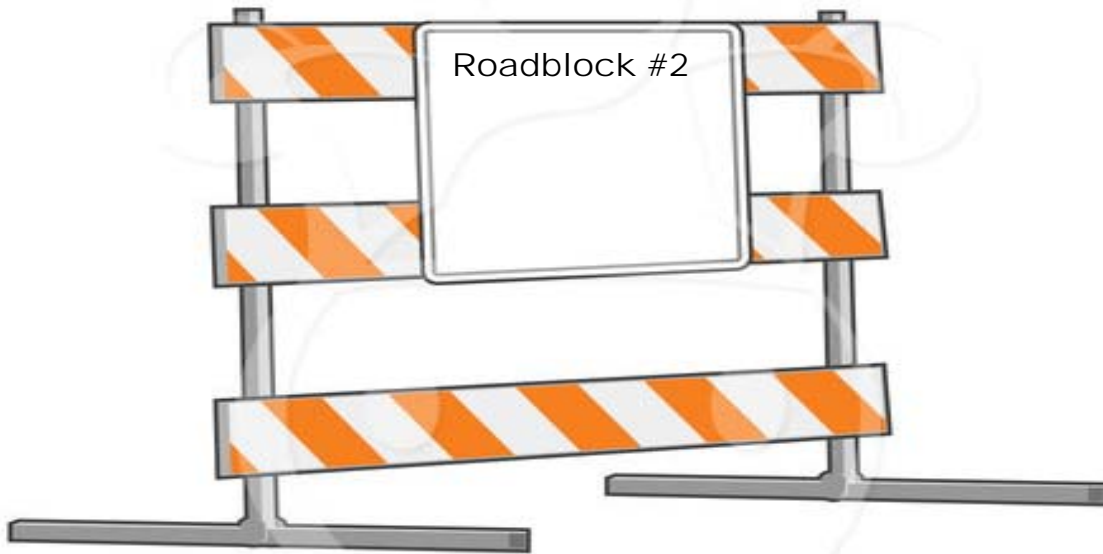
Bodyweight	Dumbbell	Barbell	Machine
Inverted Row and Variations	One-Arm Row	Bent-Over Row	Lat Pulldown
Kip Up	Two-Arm Bent-Over Row		Face Pull
Chin Ups	Chest Supported Row		Stirrups
Pull Ups	Horizontal Bench Row		Seated Row
Explosive Pull Up	Head-Supported Row		
One-Arm Pull Up			

Roadblocks

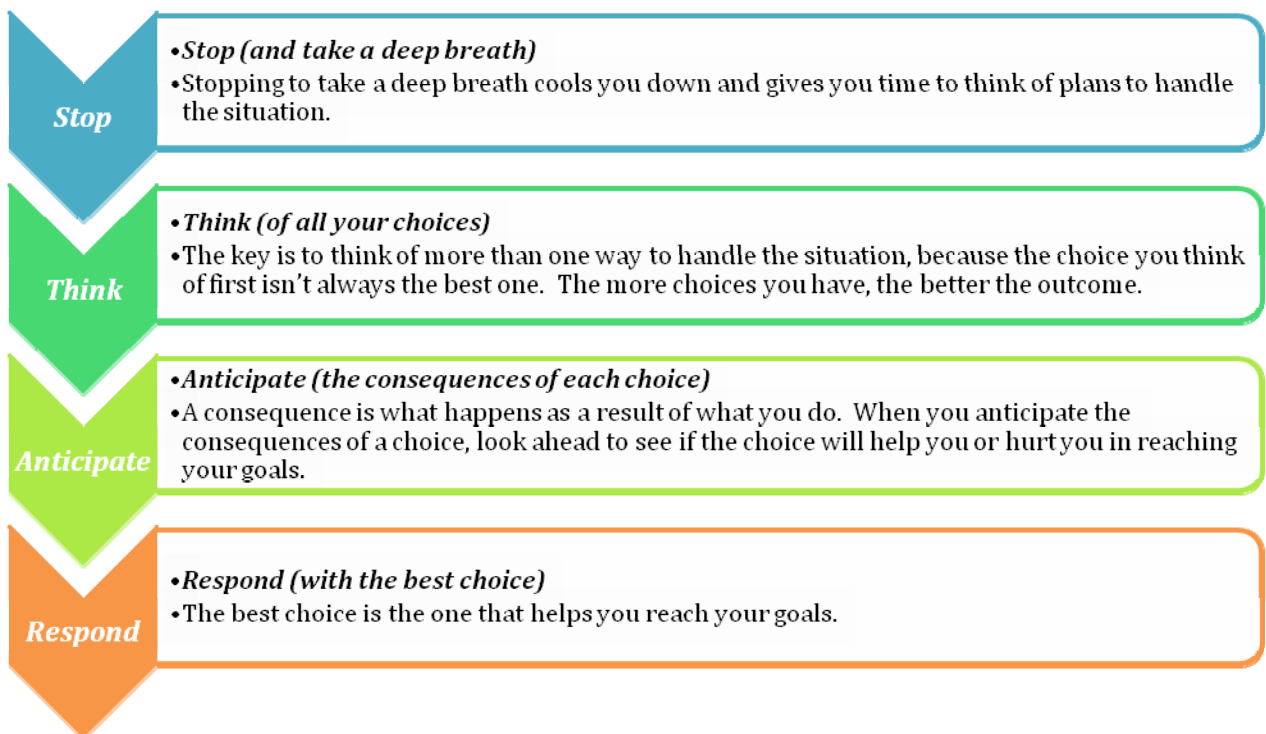
Possible Roadblocks to My Current Goal

Think of two roadblocks that may prevent you from reaching your goal. Write these roadblocks down in the space below.



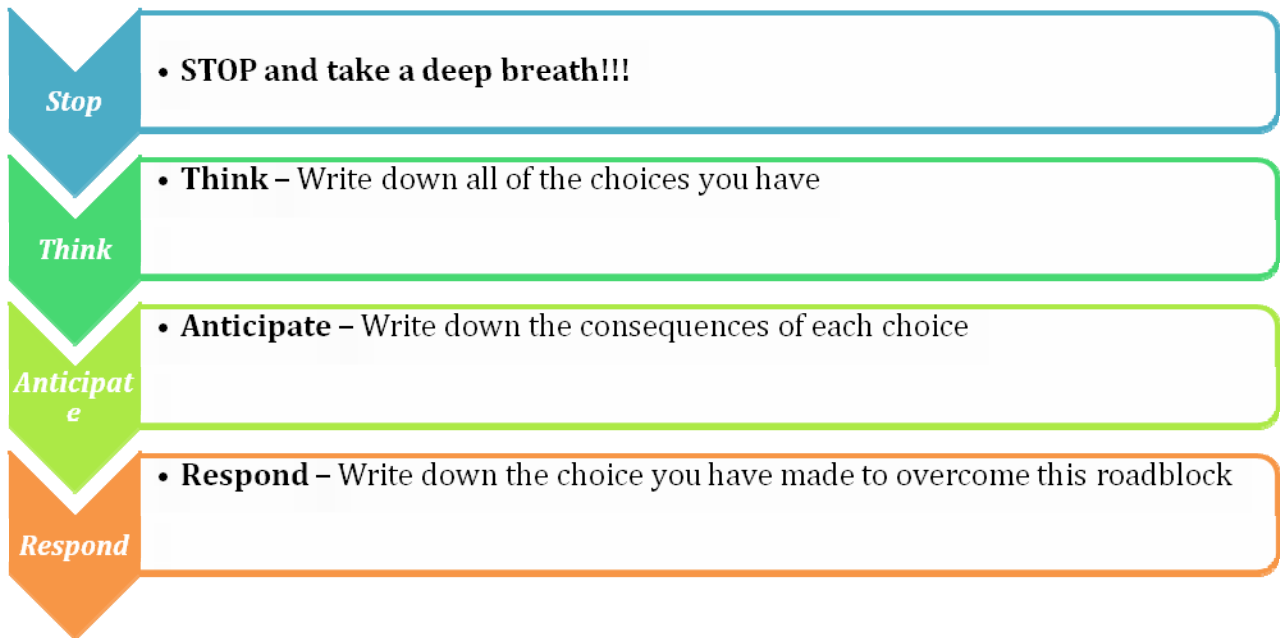


There are 4 steps to good problem-solving. When put together, the first letter of each step spells STAR.

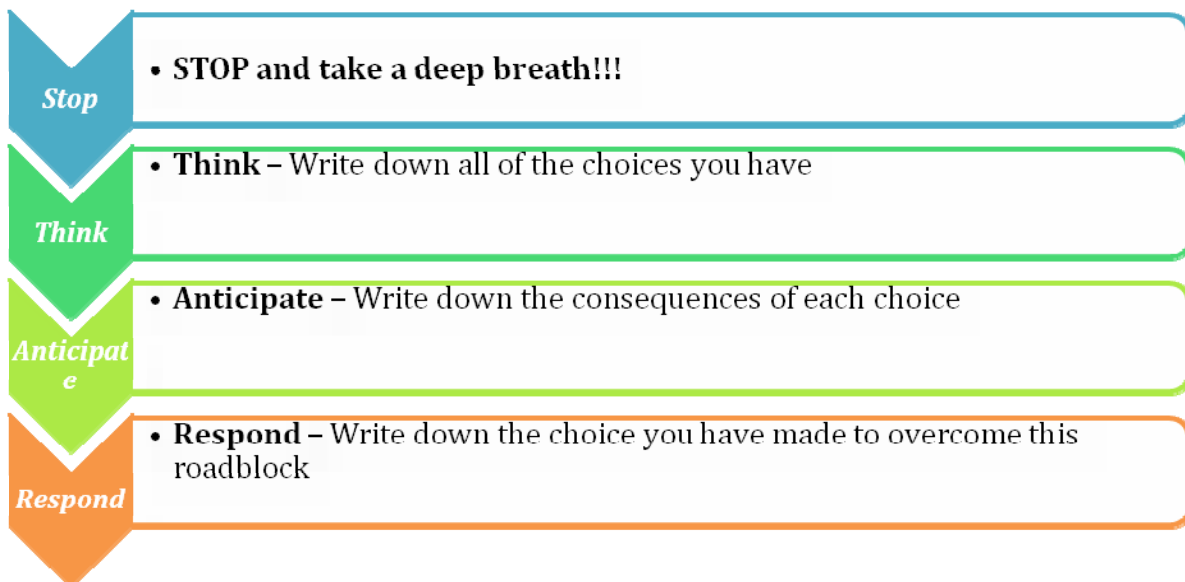


STAR WORKSHEET

Roadblock # 1

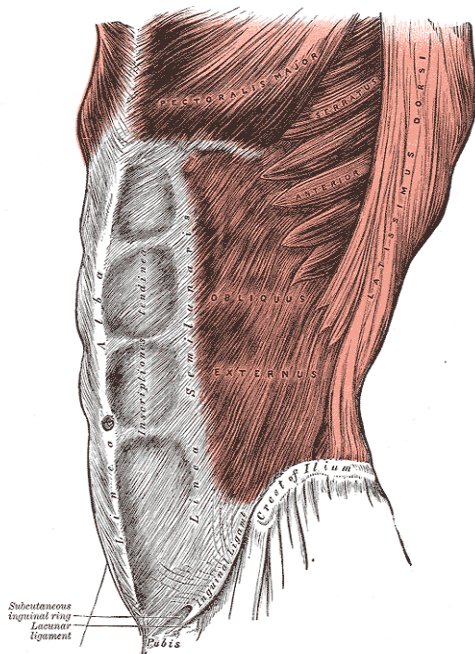


Roadblock # 2



Day 10

PUSH



We push on a daily basis, pushing open doors, pushing ourselves off of the ground, pushing our friends around (hopefully not too hard). The movement of pushing can be anything from pushing the arms straight down from the armpits (picture pushing yourself

out of a chair with your arms) to pushing straight overhead (putting groceries away on the top shelf of a cupboard).

Here are a few examples of ways we push to train our bodies.

Bodyweight	Dumbbell	Barbell	Machine
Wall Push Up	Overhead Press	Overhead Press	Standing Cable Press
Kneeling Push Up	Incline Press	Incline Press	Chest Press
Push Up	Bench Press	Bench Press	Shoulder Press
Close-Grip Push Up	Close-Grip Bench Press	Close Grip Bench Press	
Pike Push Up	Decline Press	Decline Press	
Feet Elevated Push Up			
Dip			
Handstand Push Up			
Explosive Push Up			
One-Arm Push Up			

Day 11

Self Talk

- Self-talk is what you think and say to yourself.
 - You act, move, and play the way that you talk to yourself. You may not even realize that you are telling your body to focus on failure, negative events and negative feelings.

Three Steps:

1. Listen to what you are telling yourself. Is it negative or positive?
2. The second step is to think of positive statements that will help you stay positive
3. Replace your negative statements with your positive statements.

Think of three statements that will help you stay positive. Write these down in the Power Box below!

Power Box

<p>My Positive Self-Statements</p> <p>1. _____</p> <p>_____</p> <p>2. _____</p> <p>_____</p> <p>3. _____</p> <p>_____</p>
--

Day 12

Drive Out of this Program!

We hope that you've found this program useful. We wanted to help you work out correctly and start to use some of the life skills needed for working out long term, and that are helpful to achieve the things that you want to in your life. We'd like to set some goals to finish off the program.



Write your new fitness goal here

Target Date

Step 6: _____

Step 5: _____

Step 4: _____

Step 3: _____

Step 2: _____

Step 1: _____

Appendix B

Interview Guide

Youth Experience

1. Tell me a little bit about your experience in the PULSE program?
2. Did the PULSE program give you an opportunity to explore physical activity and try new things?
3. How would you describe your relationships with other participants in this program?
4. How would you describe your relationships with the program leaders?

Life Skills and TPSR

5. What kinds of skills did this program get you thinking about? What about skills outside of exercise or sport?
6. Which life skill did you find the most useful? Why?
7. Do you feel that you improved as a person (self-control, effort, self-coaching) in the PULSE program? Why or why not?
8. Did you have an opportunity to be a leader in this program?
9. Were you able to try the skills from the PULSE program in other settings (school or work)?

Need Support

10. Were the program leaders able to help you feel competent at performing physical activity on your own?
11. Did you feel close to the program leaders or the participants? What helped that, or what got in the way?
12. Did you feel that you were able to make choices on your own about what the exercises and activities you did in the program?
13. Did you feel that you were in control of the amount of physical activity you did and what you did in the sessions?

Physical Activity Motivation

14. Do you feel like you want to continue doing physical activity after this program has finished? Why or why not?
15. If you had to give one or two reasons why you will/will not continue with physical activity what would they be?

Overall Program

16. What did you like best about the PULSE program?
17. What would you do to improve the PULSE program?

Appendix C

Godin Leisure Physical Activity Questionnaire

Instructions: During a typical **7-day period** (a week), how many times on the average do you do the following kinds of exercise for **more than 15 minutes** during your free time (write on each line the appropriate number)

1. During a typical **7-Day period** (a week), how many times on the average do you do the following kinds of exercise for **more than 15 minutes** during your free time (write on each line the appropriate number).

Times Per Week

**a) STRENUOUS EXERCISE
(HEART BEATS RAPIDLY)**

(e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)

**b) MODERATE EXERCISE
(NOT EXHAUSTING)**

(e.g., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)

**c) MILD EXERCISE
(MINIMAL EFFORT)**

(e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snow-mobiling, easy walking)

2. During a typical **7-Day period** (a week), in your leisure time, how often do you engage in any regular activity **long enough to work up a sweat** (heart beats rapidly)?

OFTEN

1.

SOMETIMES

2.

NEVER/RARELY

3.

Appendix D

Personal and Social Responsibility Questionnaire

1. I respect others	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
2. I respect my program leaders	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
3. I help others	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
4. I encourage others	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
5. I am kind to others	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
6. I control my temper	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
7. I am helpful to others	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
8. I participate in all of the activities	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
9. I try hard	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
10. I set goals for myself	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
11. I try hard even if I do not like the activity	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
12. I want to improve	Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree

13. I give a good effort					
Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree
14. I do not make any goals					
Very Strongly Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Very Strongly Agree

Appendix E

Selection, Optimization, Compensation

Selection items

1. When I decide upon a goal, I stick to it. / I can change a goal again at any time.
2. I always pursue goals one after the other. / I always pursue many goals at once, so that I easily get bogged down.
3. I concentrate all my energy on few things. / I divide my energy among many things
4. I consider exactly what is important for me. / I take things as they come and carry on from there.
5. I always focus on the one most important goal at a given time. / I am always working on several goals at once.
6. When I think about what I want in life, I commit myself to one or two important goals. / Even when I really consider what I want in life, I wait and see what happens instead of committing myself to just one or two particular goals.

Optimization items

7. I keep trying as many different possibilities as are necessary to succeeding at my goal. / I don't keep trying very long, when I don't succeed right away at a goal.
8. When I want to achieve something difficult, I wait for the right moment and the best opportunity. / When I want to achieve something, I take the first opportunity that comes.
9. I think about exactly how I can best realize my plans. / I don't think long about how to realize my plans, I just try it.
10. I make every effort to achieve a given goal. / I prefer to wait for a while and see if things will work out by themselves.
11. When I start something that is important to me but has little chance at success, I still make an effort. / When I start something that is important to me but has little chance at success, I usually stop trying.
12. When I want to get ahead, I also look at how others have done it. / When I want to get ahead, only I myself know the best way to do it.

Compensation items

13. For important things, I pay attention to whether I need to devote more time or effort. / Even if something is important to me, it can happen that I don't invest the necessary time or effort.
14. When things don't work the way they used to, I look for other ways to achieve them. / When things don't go as well as they used to, I accept it.
15. When something doesn't work as well as usual, I look at how others do it. / When something doesn't work as well as usual, I don't spend much time thinking about it.
16. When something does not work as well as before, I seek out information from books or media. / When something does not work as well as before, I am the one who knows what is best for me.
17. When things aren't going so well, I accept help from others. / Even in difficult situations, I don't ask for help from others.

18. When I can't do something as well as I used to, then I ask someone else to do it for me. / When I can't do something as well as I used to, I accept the change.

Appendix F

The Learning Climate Questionnaire

In the PULSE program:

(Autonomy Support)

1. I felt that the leaders provided us with choices and options.
2. I felt understood by the leaders.
3. I was able to be open with the leaders during the sessions.
4. The leaders showed confidence in our abilities to do well.
5. I feel that the leaders accepted us.
6. The leaders helped us to really understand the goals of the session and what we need to do.
7. The leaders encouraged us to ask questions.
8. I feel a lot of trust in our leaders.
9. The leaders answered our questions fully and carefully.
10. The leaders handled our emotions very well.
11. I felt that the leaders care about us as people.
12. I don't feel very good about the way the leaders talked to us.
13. The leaders tried to understand how we see things before suggesting new ways to do things.
14. I felt that I could share my feelings with the leaders.
15. The leaders listened to how we would like to do things.

(Competence support)

16. The leaders helped us to improve.
17. The leaders made us feel like we are good at physical activity.
18. I felt that the leaders liked us to do well.
19. The leaders made us feel like we are able to do the activities in the program.

(Relatedness support)

20. The leaders supported us.
21. The leaders encouraged us to work together in practice.
22. The leaders had respect for us.
23. The leaders were interested in us.
24. I felt that the leaders were friendly towards us.

Note: Measured on a 7-pt. likert scale (Strongly Disagree to Strongly Agree).



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de la santé

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Faculty of Health
Sciences

Appendix G

Parental Consent Form

Title of Project: Evaluation of the PULSE program.

Researcher:

Supervisor:

Purpose of the Study: The purpose of the current research is to evaluate the PULSE program. This research is intended to help researchers and community programmers to better understand how participation in a community program designed to get youth physically active and learn life skills can impact their development.

Participation: If you provide consent for your child to participate in this research project, s/he will be asked to participate in a fitness test, to complete questionnaires and to participate in a short interview. The fitness test will take between 15-20 minutes to complete and will occur on the first and last day of the program. For the questionnaires, your child will complete one questionnaire (5 minutes) on the first day of the program and 3 questionnaires on the last day of the program (15-20 minutes). The interview will take place during one of the last two sessions of the program and will take 15 minutes to complete and will be audio-taped. However, you have the option of not permitting your child's interview to be audio-taped.

☎ 613-562-5432
📠 613-562-5437

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Ottawa ON K1H 8M5 Canada
www.uOttawa.ca

Risks: I do not anticipate any negative effects during or following participation in this project.

Benefits: The participation of your child in this project will help contribute to scientific knowledge. In particular, this project will help us better understand the impact of programs that help youth learn about physical activity and life skills.

Confidentiality and Anonymity: Apart from the consent form and the assent form completed by your child, the name of your child will not be written on any documents including the survey and the interview. This consent form and your child's assent form will be placed in a locked filing cabinet within a locked office and filed separately from the surveys and the interviews. Also, the audio-recordings of the interviews will be placed in a locked filing cabinet in a locked office. At the end of the project the data will be kept secure for a period of five years, after which all of the data will be destroyed.

Recording Procedures: The interviews will be recorded using a digital voice recorder. No identifying information (e.g., name) will be recorded.

Voluntary Participation and Withdrawal: The participation of your child is completely voluntary. S/he may withdraw from the project at any time without penalty.

If you have any questions regarding this research project you can contact me by phone at 613-562-5800 ext. 7354 or by e-mail at bryce.barker@gmail.com. You can also contact my supervisor, Dr. Tanya Forneris at 613-562-5800 ext. 4280 or by e-mail at tanya.forneris@uottawa.ca.

For any questions regarding the ethical conduct of this project, you can contact the Protocol Officer for Ethics in Research, University of Ottawa, 550 rue Cumberland, Room 159, Ottawa, ON, K1N 6N5, (613) 562-5841 or ethics@uottawa.ca

Consent:

I have read this consent form and I understand the procedures of this research project. Also, I understand that the participation of my child is completely voluntary and s/he may withdraw from the study at any time without penalty. My signature indicates my consent for my child to participate.

I permit my child to participate in this project

I permit my child to participate in this project but do not permit the interview to be audio-taped.

Name of Child (Please Print)

Name of Parent (Please Print)

Date

Signature of Child

Signature of Parent/Guardian

Signature of Second Parent/Guardian (if applicable)



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Appendix H

YOUTH ASSENT FORM

TITLE: The evaluation of the Skills for Fitness and Life (SFL) Program

This form may have some words that you do not know. Please ask the researcher to explain any words that you do not know.

What is this study about?

The purpose of this research is to understand how a physical activity and life skills program effects the development of youth.

What happens to me if I choose to be in this study?

If you are in this study you will have to complete a fitness test and complete some questionnaires two times (once at the beginning of the program and once at the end) and also an individual interview at the end of the program. The fitness test will take 15-20 minutes to complete, the questionnaires will take about 20-30 minutes to complete and the interview will take about 15 minutes to complete and will be recorded. You do not have to complete any fitness task or answer any question you do not want to and you can stop at any time.

Risks: I do not believe that you will experience any negative effects from participation in this program evaluation.

Benefits: Your participation will help us understand whether physical fitness and life skills programs, like the one you will participate in, are positive for youth and whether youth believe these programs are important and help them develop in healthy ways.

Recording Procedures: The interviews will be recorded using a digital voice recorder. No identifying information (e.g., name) will be recorded.

Will you tell anyone what I say?

We will not share your results or your answers with your parents, teachers, friends, or anyone else. Also, when discussing or writing about this research, we will never use your name.

☎ 613-562-5432

📠 613-562-5437

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Ottawa ON K1H 8M5 Canada
www.uOttawa.ca

Questions?

If you have any questions about being in this study, you can call or have your parent call:

Consent:

I have read this form and I understand the information about this study. I am willing to be in this study.

Youth name printed	Youth signature	Date
--------------------	-----------------	------

Signature of person conducting informed consent	Date
---	------