A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers

By:

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B.A., St. Francis Xavier University, 2005

B. Ed., University of Western Ontario, 2007

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SUPERVISORY COMMITTEE

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Abstract

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The literature suggests that many teachers are burning out and are stressed and unwell. Health promotion in the school setting with a focus on students is becoming more and more prevalent. However, research has not adequately investigated the effects of health promotion in the school setting focused on the teachers. This study explores the experiences of the teachers who took part in the "Step It Up" program which is a pedometer program including goal setting and teams. This is a mixed methodology as the data was collected using semi structured interviews, open ended questionnaires and a document review of the step logging records. Interviews were transcribed and analyzed according the Colaizzi procedures seeking the barriers and the benefits of the program as experienced by the teachers. Through data analysis, the benefit main themes were; motivation, awareness and social support. The barrier themes found were; step logging, time management and goal setting. In conclusion with the recommendations and modifications suggested in this study, the "Step it Up" program is feasible in the school-setting.

Table of contents

Title Page i

Supervisory Committee ii

Abstract iii

Table of contents iv

List of Tables viii

List of Figures ix

Acknowledgements x

Dedication xi

Chapter One: Introduction 1

Rationale 1

Purpose Statement 5

Research Question 5

Propositional Statement 5

Delimitations 5

Limitations 5

Operational Definitions 6

Chapter 2: Literature Review 7

Benefits of Physical Activity 7

Costs of Physical Inactivity 7

Health Promotion 8

Worksite Wellness and Health Promotion 9

Team-based research 10

Goal setting 11

Pedometers 12

Multifaceted Physical Activity Interventions 14

School-based Health Promotion 16

Comprehensive School Health Framework 17

Action Schools 20

Teacher Health and Wellness 20

Chapter Three: Methodology 24

Researcher Statement 24

Background` 24

Procedure 28

Design 28

Setting 28

Participants and recruitment 28

Intervention 29

Data Collection 30

Qualitative interview 30

Qualitative Questionnaire 30

Quantitative Document Review 31

Data Analysis 31

Trustworthiness 31

Chapter Four: Results 33

Characteristics of participants 33

Interviewees Profile 33

Description of Participation in the intervention 34

Qualitative Findings 36

Categorical, Clusters and Thematic Structures 37

Category one: Benefits 37

Cluster one: Motivation 38

Activity 38

Health consciousness 39

Team Dynamics 40

Cluster two: Awareness 40

Pedometers 41

Inactivity 41

Cluster three: Social Support 42

Fun/enjoyment 43

Role modeling for students 43

Category Two: Barriers 43

Cluster one: Step Logging 44

Inconvenience 45

Team responsibility 45

Cluster two: Time Management 46

Additional Responsibilities 46

Cluster three: Goal Setting 46

Realistic/Unrealistic 47

Challenge vs. getting point 47

Category Three: Recommendations 48

Chapter Five: Discussion 50

Summary 50

Research Contributions 50

Benefits 51

Barriers 57

Recommendations for teachers and administrators 61

Directions for Future Research 63

Final Summary 63

References 65

Appendices 79

Appendix A- Recruitment Poster 79

Appendix B- Letters to School Director 80

Appendix C- Telephone Script For Informational Interview 82

Appendix D- Confirmation Sheet and Interview Schedule 85

Appendix E- Confirmation Letter 86

Appendix F- List of Appendices 87

Appendix G- Interview Field Note 88

Appendix H- Consent Form- Teachers 90

Appendix I- Fieldnote Reporting Form 92

Appendix J- Thank You Letter To Teachers 94

Appendix K- Questionnaire- Teachers 95

List of Tables

Table 1: Team 1 Step Logging Points 32

Table 2: Team 2 Step Logging Points 33

Table 3: Team 3 Step Logging Points 33

Table 4: Team 4 Step Logging Points 33

Table 5: Team 5 Step Logging Points 33

Table 6: Total Team Step Logging Points 33

Table 7: Categories and Clusters 37

Table 8: Category One: Benefits 37

Table 9: Category Two: Barriers 42

Table 10: Recommendations from “Step It Up” Participants 46

List of Figures

Figure 1: Key Components of the CIPP Evaluation Model and Associated Relationships with programs. 28

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Dedication

I want to dedicate this thesis to my parents. They are the ones who have taught me anything is possible if you work hard. They always encouraged me and believed in me. You have instilled a love for learning. You are the rock solid foundation keeping me grounded through the storms. Thank you for preparing me so well to go out in the world and be who I am.

I would also like to dedicate this thesis in loving memory of Lindsay Bolger. When I wanted to pack it in and give up, I thought of Linds. She taught me the power of determination, to never take anything for granted and to always B-Strong. Through so much adversity, she never ever gave up. Her life was short but will continue to impact my life and the lives of so many others.

Chapter One: Introduction

Rationale

One of the most effective and practical way to control rising health issues and healthcare costs is to engage in physical activity. Regular physical activity is associated with improved quality of life, enhanced health and reduced health risk factors (Public Health Agency of Canada, 2010; Sallis & Patrick, 1994; Tremblay, Inmann, & Willms, 2000; Tremblay & Willms, 2000). People who participate in moderate to high levels of physical activity experience a 20 to 30% risk reduction in all causes of mortality (Murphy, Nevill, Biddle, & Harman, 2002). The health benefits of physical activity are improved cardiovascular health, decreased risk of ischemic stroke, type 2 diabetes, colon cancer, osteoporosis, depression, and fall –related injuries (Murphy, 2002). Despite these benefits physical activity among adults is below recommended levels; only 25% of adults participate in moderate activity for at least 30 minutes, 5 or more days per week, or vigorous activity for at least 20 minutes, 3 or more days per week (Public Health Agency of Canada, 2010; U.S department of Health and Human services, 1999). Obesity due to inactivity continues to be on the rise and is now considered an epidemic (Public Health Agency of Canada, 2009). The comorbid diseases associated with obesity are type 2 diabetes, hypertension, cardiovascular disease and multiple cancers. These diseases not only account for a significant amount of the overall health care expenditures, but also results in a decrease of quality of life and life expectancy.

The workplace has been identified as an ideal venue to address these health issues among adult populations (Chapman, 2005). One third of individuals spend over 60% of their waking hours at work (Morrison, & MacKinnon, 2008). Therefore the workplace

has great potential as a site for developing and promoting employee health and wellness (Morrison, 2008). Providing a healthy and well workplace not only affects the health of individual employees but also positively influences how the company functions and thrives (Chapman, 2005; Baker, Goetzel, Xiaofei, Weiss, Bowen, Tabrizi, et al. 2005; & Downey, 2007). Mental health, physical health, heart health, balanced nutrition and social inclusion have all been shown to increase productivity and focus on the job, while positively affecting quality of life (Baker, 2005; & Chapman, 2005). For the employer, preventable health issues cause rising health care costs and losses in productivity (Chapman, 2005). Evidence suggests that worksite wellness programs can increase job satisfaction and produce a large return on investment (ROI) (Baker, 2005). In the United States (USA), where the employer is responsible for the health care costs, wellness programs have been known to yield as high as a 14:1 ROI (Chapman, 2005). With the privatized health care system in the USA employers must pay for their employees' poor health choices. It is not surprising that in the United States the number of worksite wellness programs has grown. The employer invests money into a wellness program and realizes a return of investment through the decrease of medical costs. In Canada the employer pays for a wellness program which results in the public health care system reaping the economic benefits. To encourage workplace wellness in Canada a slightly different perspective must be presented to employers such as: promoting the resulting improvements in productivity, job satisfaction, job retention and decreases in absenteeism (Downey, & Sharp, 2007).

Many successful worksite health and wellness programs have been implemented in both the USA and Canada (Gregersen, Zimber, Kuhnert, & Nienhaus, 2010; Chung,

Melnyk, Blue, Renaud, & Breton, 2009; Finkelstein, Linnan, Tate, &Leese, 2009; Dishman, Oldenburg, O' Neal, & Shephard, 1998). A number of these programs address multiple dimensions of well being and include mental health and stress management sessions, nutrition and health eating education, self-care options, goal setting and exercise intervention. Strategies used to actualize positive changes in these areas are the use of personal wellness coaches, lunch and learns, healthy eating potlucks, goal setting consulting, pedometers and team-based approaches (Chapman, 2005).

A worksite model that has had extensive use is Hettler's Six Dimensions of Wellness (Hettler, 2003). The six dimensions of wellness are: occupational, intellectual, emotional, physical, social and spiritual. Each dimension is equally important (Hettler, 2003). In recent years worksite wellness programs have successfully incorporated all aspects of this model.

Although research has shown that workplace wellness programs have created effective and feasible solutions to increasing the health of employees and company productivity (Chung, et al., 2009; Dishman, et al., 1998), one workplace that is not reaping the benefits of a healthy work environment is the school-setting. Schools have been identified as one of the best avenues to address the low levels of physical activity among children and adolescents (Lister-Sharp, Chapman, Stewart-Brown, & Sowden,1999; Blum, McNeely, & Rinehart, 2002; St Leger, & Nutbeam, 1999). As a result school health promotion programs have begun to focus on the well-being of students (West, Sweeting, & Leyland, 2004). However a key factor in these programs is the teachers. Since teachers are the fundamental agents of change in any school health promotion effort, without their guidance and engagement these programs are not likely to

succeed. In addition teacher health has been an ongoing concern over the past few decades. As a result the teaching job has potential risk factors for adverse health outcomes (Kyriacou, 1987; Capel, 1992; Byrne, 1995; Beehr, 1995; Guliemi and Tatrow, 1998). Literature suggests teachers are becoming overworked, burnt out and stressed, causing many teachers to leave the profession completely (Carroll, & Fulton, 2004; Tye, O'Brien, 2002; Ingersoll, 2001, 2002a, 2002b). Although, an emerging body of literature suggests that teacher wellness is a cause for concern (McConaghy, 1992; Lauzon, 2001; Russell-Mayhew, 2007; & Ritter, 2007), health promotion programs aimed at teachers' health and wellness are very limited.

In Canada health promotion in schools has moved towards the Comprehensive School Health (CSH) framework, which is an integrated approach to health promotion that students numerous opportunities to observe and learn positive health attitudes and behaviors (St. Leger, 1999). The four frameworks of the CSH include: (1) instruction, (2) support service, (3) psycho-social environment, and (4) a healthy physical environment (Canadian consensus). However little has been done to substantially support the health and well being of teachers. Research investigating the wellness of teachers and schools as a worksite requires further investigation. Within the CSH model teacher health and wellness is a key component and yet the majority of CSH literature focuses on children. In order to provide teachers with a healthy worksite and to continue to use schools as an effective avenue to promote physical activity and health among children and adolescents, teachers- the delivery agents and role models of health promotion programs- cannot be forgotten.

Purpose Statement

The purpose of this study was formative investigating a teacher wellness initiatives by assessing the feasibility and short term efficacy of a middle school staff pedometer challenge; a team-based worksite exercise intervention to create positive change. This study will assess the factors influencing the implementation of the school-based exercise program.

Research Question

The following research question was addressed in this study:

1) What factors influenced the feasibility and implementation of the "Step It Up" program as experienced by teachers and administrators at an independent middle school?

Propositional Statement

The "Step It Up" pedometer challenge will affect positive change in the school wellness culture, which will promote and support an increase in the following outcomes: positive relationships between staff members and teacher's willingness to add exercise (walking) into their daily life. Pedometers, goal setting and a team-based approach will be shown to be motivators/facilitators in achieving more steps. Implementation of the pedometer challenge will be feasible for primary, middle and senior schools.

Delimitations

1) The study will be restricted to the staff at an independent Middle School

2) The primary outcome variables will be measured by self-reported instruments

Limitations

1) The study will rely on self selected, volunteer participants which compromises the generalizability of the results to other schools and staff.
2) The study will be limited to a focus on walking thus limiting the generalizability of the results to all exercise programs.
3) Self-report measurements of the outcome variables may be vulnerable to bias.

Operational Definitions

1. Factors- barriers/challenges and facilitators/successes.
    a. Barrier- characteristic that inhibits full participation in the program.
    b. Benefit- characteristic that enhances the participation in the program.
2. Team-based approach- Teams of five staff members with one team captain.
3. Goal setting- that which one wants to accomplish; it concerns a valued, future end state (Lee, 1989).

Chapter 2: Literature Review

This chapter begins with an overview of the health benefits offered by physical activity and the costs of inactivity. Research describing health promotion initiatives in a range of settings, focusing both on worksite followed by the school setting will follow. The chapter concludes with a discussion of the current state of teacher health and wellness.

Benefits of Physical Activity

Evidence shows regular physical activity is associated with improved quality of life, enhanced health and reduced risk factors for many other conditions (Sallis & Patrick, 1994; Tremblay, Inmann, & Willms, 2000; Tremblay & Willms, 2000). People who participate in moderate to high levels of physical activity experience a risk reduction of 20 to 30% in all causes of mortality (Murphy, Nevill, Biddle, & Harman, 2002). The health benefits of physical activity include improved cardiovascular health, decreased risk of ischemic stroke, type 2 diabetes, colon cancer, osteoporosis, depression, and fall – related injuries (Public Health Agency of Canada, 2010). The Surgeon General stated in 1999 that only 25% of American adults participate in the recommended level of moderate activity for at least 30 minutes five or more days per week or vigorous activity for at least 20 minutes three or more days per week (U.S department of Health and human services, 1999).

Cost of Inactivity

Inactivity comes with a cost to one's health and to the health care system. There were 1.9 million global deaths attributed directly to physical inactivity in recent years (WHO, 2002; WHO, 2002). Fifteen % of some cancers, diabetes and heart disease have been traced back to physical inactivity (WHO, 2002). Obesity, which is linked to

inactivity, is predicted to become the leading cause of premature and preventable deaths in North American (WHO, 2002).

Along with the health costs of inactivity are the economical costs to society. In 2004 health costs from injuries and illness stemming from inactivity amounted to $5.3 billion, which was 2.6% of all health care costs in Canada for that year (Katzmarzyk & Janssen, 2004).

Health Promotion

Health promotion is defined by the American Journal of Health Promotion as "the art and science of helping people discover the synergies between their core passions and optimal health (O'Donnell, 2009). Optimal health is a dynamic balance of physical, emotional, social, spiritual and intellectual health. Lifestyle change can be facilitated through a combination of learning experiences that enhance awareness, increase motivation and build skills by creating supportive environments that provide opportunities for positive health practice. (O'Donnell, 2009). By becoming aware, motivated and skilled one is more equipped to gain control over their health requirements and effect change. The World Health Organization defines health promotion as "the process of enabling people control over, and to improve their health (WHO, 2002)."

Health promotion has historically been aimed at the individual focused on facilitating change in their health behaviors. The "setting-based" approach is a recent trend to move health promotion to include not just the individual's risk profile but also the risk profile of a community; the individual in a social context. Taking into consideration that the health of an individual is created and experienced within their daily life, this approach recognizes ecological, multi-level and whole system perspectives

(Dooris, Poland, Kolbe, deLeeuw, McCall, & Wharf Higgins, 2007). A 'setting' has been defined as "a physical place or a social context where multiple environmental, organizational and personal factors come together to affect health" (WHO, 1998.)

Workplace wellness and health promotion

The workplace has become one logical and popular health promotion setting (Morrison, 2008). Hettler defines occupational health as a measure of job satisfaction, job attributes, job status, and workplace structure (Raphael, 2004, & Hettler,2006). Raphael (2004) suggests that occupational wellness can be considered a key determinant of health and includes working time, work pace, stress, physical environment and conditions, opportunities of self-expression, individual development, social connections and work life balance.

A worksite wellness program is defined as " an organized program in the worksite that is intended to assist employees and their family members (and/or retirees) in making voluntary behavior changes which will reduce their health and injury risks, improve their health consumer skills and enhance their individual productivity and well-being " (Chapman, 2005). Physical activity interventions have been excessively studied and successfully implemented into the work setting. Different strategies have been examined and evaluated. An effective workplace health promotion program can benefit both the employer and employee.

The motivation for a wellness program may differ depending on whether you are funding the program, organizing it or participating in it. This difference in motivation is shown in the Economic Clinical Humanistic Outcome Model developed in 1993 after studying pharmaceuticals companies (Chapman, 2005). This model includes three

categories. The first category, the clinical rationale which looks at the health related quality of life, hospital visits, healthcare, and disability. The second category presents the economic rationale, the bottom line, which considers sustainability, return on investment (absenteeism, presenteeism, and productivity) and direct and indirect medical costs. The third is the rationale from humanistic perspective which looks at overall satisfaction and quality of life. For the corporate CEO's, however, the economic rationale would be the most compelling and its impact is well documented.

Worksite wellness programs and initiatives can be implemented in a number of ways. The following sections will discuss briefly, some common strategies used to introduce and manage such programs.

Team-Based Approach

Many work-site wellness programs are structured using a team-based approach (Kozlowski & Bell, 2003 & Srivastava, Bartol & Locke, 2006). Kozlowski and Bell (2003) define teams as "collectives, who exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity (Kozlowski and Bell, 2003, pg. 411)." Teams can facilitate support systems and promote healthy competition within an organization leading to enhanced job satisfaction and feelings of social inclusion. These feelings increase ones external efficacy to perform. Efficacy to perform was measured in economic gain at Credit Union in Iowa when communication and cohesion in top management teams positively affected their firms' financial ratios (Barrick, Bradley, Kristof-Brown and Colbert 2007). This increase

in performance efficacy has been supported by many other studies and with respect to the team-based approach it is very valuable in terms of organizational structure (Srivastava, Bartol & Locke, 2006, Sutcliffe, 2002). Health promotion initiatives have also begun to utilize a team based strategy. Physical activity interventions can be used as a way to introduce the idea of teams into a workplace in a fun and enjoyable way. A team based approach to promote activity level and other wellness changes can enhance existing workplace teams and will help create long-term positive behavior changes (Pascual, Perez-Jover, Mirambell, Ivanez, & Terol, 2003).

Goal-setting

Behaviour change is a difficult task. Goal setting is a strategy that has been shown to assist in promoting physical activity and nutritional behaviour changes among adults (Shilts, Horowitz, & Townsend 2004). A goal is " that which one wants to accomplish; it concerns a valued, future end state (Lee, Locke & Lathan, 1989)." Over the last 30 years goal setting has permeated the worksite. It is only in the last decade that professionals have begun to assess the effect it has on community health promotion.

Locke *et al.*. have established three goal properties that result in higher task performance when compared to groups who set no goal or set a goal that is too easy. The three properties are: specificity, difficulty and proximity. A goal should be specific to behaviour, difficult yet attainable, and proximal in time (not too far into the future). In addition to Locke's three properties to promote behavioural changes are feedback and rewards (Zegman, & Baker 1983; Mento, Steele, & Karren,1987; Bandura; 1977; & Locke, Shaw, Sarri, & Lantham 1990). All five are vital to making goal setting an

effective strategy in improving self efficacy and ultimately changing ones behaviour (Shilts, 2004).

Three types of goals have been identified and previously mentioned; self-set, assigned/prescribed and participatory/collaborative. Although different types may be necessary in different situations or by different people, it has been proven that assigned goals are more effective than self-set (Mazzeo- Captuto, Danish, & Kris-Etherton, 1985). An assigned goal fosters social responsibility.

Cullen *et al.*. have investigated the process of goal setting and have developed a four step process: recognizing a need for change, establishing a goal, adopting a goal directed activity with self monitoring it, and self rewarding the goal attainment (Cullen, 2001). A proposed theoretical framework for the goal setting process that has been created by Shilts *et al.* is similar to Cullen's steps. It moves through the processes beginning with self assessment and finding a behaviour that one desires to modify. Next is goal setting; making sure the goal that is set is specific, difficult and proximal. After setting the goal the individual will move to goal commitment, involving effort, concentration, persistence and motivation. Shilts proposed that goal attainment is positively correlated if these steps are followed.

Pedometers

With the increase in wellness programming, a number of worksite physical activity interventions have been explored and implemented. Some include: yoga, jogging, in house gyms, exercise to music and walking. A current approach has been with the use of pedometers. A pedometer is a device you wear on your hip, on the waistband of your pants, which counts the number of steps you take. Being able to see the

number of steps you are walking provides the individual with visible feedback and motivation.

Pedometer validity, reliability and accuracy have been tested in many studies (Hasson, Hailer, Pober, Stadenmayer & Freedson, 2009; Holbrock, Barreira & Kang, 2009). The Omron HJ-112 is amongst the most reliable and valid and has been used in many interventions. It shows validity in treadmill testing and shows consistent accuracy amongst different body mass index (BMI) groups (Hasson, Hailer, Pober, Stadenmayer & Freedson,2009). Holbrock et al. (2009) concludes that the HJ-112 is both reliable and valid with both healthy and overweight adults.

The literature on exercise intervention programs shows pedometers are very effective in increasing motivation and awareness (Chan, Ryan, & Tudor-Locke, 2004). A healthy recommendation has been set at 10,000 steps per day. In recent years technology increases have made it possible to manufacture cost effective and accurate pedometers, making them a reliable and economical product for companies to incorporate into their programs (Sidman, Corbin, & La Masurier, 2004).

An example of a successful program is the "First Step Program" which was evaluated using individuals with type II diabetes (Tudor-Locke, Bell, Myers, Harris, Ecclestone, Lauzon & Rodger, 2004). The First Step Program is a program that incorporates self monitoring, individual goal setting, social grouping along with education on behavior change. The results of this study show that the participants increased their steps more than 3000 steps a day during the intervention. The study concluded that the walking program using pedometers created an "immediate and profound" change in walking behavior which is necessary to began to increase volume

and intensity of physical activity to experience health benefits (Tudor-Locke et al., 2004). The same "First Steps" program was used with sedentary workers. Participants made step increases between 3200 steps a day and 34000 steps a day. A significant reduction in BMI, waist girth and resting heart rate was found in the participants who increased their steps (Chan, Ryan, & Tudor-Locke, 2004). This shows that not only do pedometers aid in increasing steps walked in a day but can also lead to health benefits. In a systematic review done on "Using Pedometers to Increase Physical Activity and Improve Health" , using 26 studies and a total of 2767 participants, results show that on the mean increase of steps was 2491 over the control groups (Bravata, Smith-Spangler, Sundaram, Gienger, Lin, Lewis, Strave, Olkin & Sirard, 2007). The results also found that BMI was decreased by 0.38 and systolic blood pressure was decreased by 3.8 mm Hg. A notable finding in the study was that an important predictor in increased physical activity was have an individual step goal (Bravata et al., 2007). Literature shows successful results when combining the use of pedometers with the other physical activity intervention strategies such as teams and goal setting (Dishman, Oldenburg, O'Neal, & Shephard, 1998).

Multifaceted Physical Activity Interventions

It is important to determine which types of strategies or combination of strategies is most effective in changing physical activity behavior. In 2006 Kahn, Ramsey, Brownson, Heath & Howze completed a large systematic review into the effectiveness of interventions to increase physical activity.

Kahn et al. (2006) identified a total of 95 worksite interventions in the systemic review and categorized them by the strategy used. In a study done by Mc Eachan,

Lawton, Jackson, conner & Lunt (2008), they identify some strong recommendations for successful worksite wellness program. Some examples are social support, environment changes (enhancing or creating new environment conducive to the facilitation of the program) and having multiple components and variety within the program.

Abraham and Michie (2008) have also determined a taxonomy of behavior change techniques that have been implemented in interventions to change behavior. The taxonomy was used to code the specific strategies that made up the intervention described within each document. The description in each paper was read by the author and coded using the taxonomy. Those techniques/strategies that were found most frequently in these effective physical activity interventions found to be:

"1) Planning for social support/social change,

2) Prompting intention formation,

3) Providing instruction,

4) Providing opportunities for social comparison,

5) Prompting self-monitoring, and

6) Prompting barrier identification" (Abraham, 2008).

It can be difficult to isolate any of these components on their own because many of the interventions are multifaceted. Therefore it is hard to conclude which strategies are truly the most effective in creating behavioral changes.

Despite the difficulty in directly comparing the elements with those identified above in the Kahn review, it seems there is a clear need to provide information, support, and performance monitoring (pedometers). After examining these reviews, it was easier to identify important components for our intervention and to better understand the intervention's target behavior – goal setting, social support and moderate activity such as frequent walking- that appear to yield positive results.

The "Move to Improve" was a group randomized 12 week intervention incorporating organizational action action, personal and team goal setting with the staff of "The Home Depot". This was a large study including 1442 employees at 16 different stores. Results showed an increase in moderate and vigorous physical activity and walking, when compared to the control group. This study found 51 % of the participants met the *Healthy People 2010* physical activity (P.A) recommendations, compared to 25% of the control group. On average they report a 300 minute weekly average for physical activity and 9000 steps daily (Dishman, De Joy, Wilson, & Vanderberg, 2009). The feasibility and efficacy of the *Move to Improve* intervention were supported and showed positive results for the role of goal-setting and P.A levels.

School-based health promotion

The school setting has become a popular place for health promotion. The Canadian Association for Health, Physical Education, Recreation and Dance, have defined a healthy school as a school that

1) Respects the body, spirit, heart and mind of every person within the school community.
2) Is free of prejudice, bullying and fear.

3) Where people, culture and traditions are valued.
4) Is clean and safe, and values learning.
5) Has proper lighting, ventilation, heat, fire, and safety protection, clean water and proper waster disposal.
6) Shows it healthy with positive student-teacher bonds; positive role models; healthy food choices; and opportunities for physical education and activity (CAHPERD, 2005).

Since all of these concepts align with the idea of "health promotion schools" and the Comprehensive School Health framework, it may be useful to apply the same principles in the worksite setting.

Comprehensive School Health framework

In recent years school health promotion has moved towards an ecological model of health. This model recognizes that an individual's behavior is not only influenced by their own beliefs, but is also greatly affected by the context or environment that surrounds them, where they live and learn, work and play (Shilton, 2007). This model calls for a more multifaceted approach that combines education about health in the classroom and creates an enabling social and physical environment that incorporates the local community; parents, local agencies and policy makers. The World Health Organization began to investigate this idea and published a document about health promotion in schools in 2006. The Health Promoting Schools framework was adapted by the Canadian government and is otherwise known as the Comprehensive School Health model (CSH) (Canada Consensus, 2007). Canada tailored the objectives created by the WHO and has developed 4 main goals:

1) "Foster health and learning with all measures at its disposal;
2) Engage health and education officials, teachers, teachers unions, students, parents, health providers and community leaders in efforts to make the school a healthy place for all;
3) Strive to provide a healthy environment, school health education and school health services, health promotion programs for staff, healthy food choices, daily physical activity/education, and programs for counseling, psychological intervention, social support and mental health promotion;
4) Implement policies and practices that respect an individual's well-being and dignity, provide multiple opportunities for success, and acknowledge good efforts and intentions as well as personal achievements." (Canadian Consensus Statement, 2007, p. 2)

The CSH model is broken down into a four part framework: instruction, support services, psycho-social environment and a healthy physical environment (Public Health agency, 2008). Instruction includes teaching and learning and is the basic method in which teachers and students receive resources about health and wellness (Canadian Consensus, 2007). It encompasses and fosters health literacy, lifestyle-focused physical education, social responsibility, curriculum, and teaching education (Public Health Agency, 2008; Canadian Consensus, 2007).

A support service comprised of health, social and psychology services promotes screening/assessment and early detection and treatment. A holistic support service can require collaboration with outside agencies such as government, public health specialists

and social services. A school is sometimes the only place students and parents can access these services and get help for problems that would otherwise go untreated (Canadian Consensus, 2007).

Psycho-social environment steaming from the ecological model addresses both the informal (friends, peers and teachers) and formal (school policies, rules, and clubs or support groups) social and psychological support in the school and extends to home and community. Some examples of this support are: role modeling by school staff and others, staff wellness program, active student and parent participation and peer/group support development (Canadian Consensus, 2007).

A healthy physical environment refers to the physical space of the school campus. It includes creating a safe, clean, health promoting environment which is achieved through safety regulations, hygienic standards, environmental policies, food and nutrition, smoke free school polices access to a range of physical activity opportunities, and anti-bullying/harassment campaigns (Canadian Consensus, 2007).

For the CSH model to be effective there is a need for partnership between everyone in the community from the ministries, voluntary sectors to the law enforcement and governments at all levels to work together. Contribution from every individual and organization will strengthen the framework, increase the health and well-being of the entire community and create the truly effective multifaceted approach.

The Canadian Association for School Health suggests when beginning to apply this model to the real life school setting it is of the utmost importance to plan properly. The association advocates for checklists, practical strategic planning which includes planning the assessment tool to be used in the future to evaluate if objectives are being

met prior to implementation. Since the CSH is such a large concept it may be more feasible to address small issues or one framework at a time instead of trying to change the entire school environment all at once (www.safehealthyschool.org/applyingCSH.com)

Action schools

One example of the CSH model being implemented currently in the province of British Columbia is Action School. Actions Schools slogan is "providing more opportunities for more children to make healthy choices more often" (Action school Planning Guide, 2008). The "framework for Action" is broken down into six action zones: school environment, scheduled physical education, classroom action, family and community, extra-curricular and school spirit. In all of these different settings Actions Schools is looking to promote healthy living. The steps to becoming an Action School are: registration, taking stock, taking action and reporting. Any school in BC is eligible to participate in this program. Actions Schools also supply a box of supplies and resources when the school joins the program. Again this program is a comprehensive model that incorporates many settings and people, however although the teachers may benefit from simply being submersed in this culture, there are no programs specifically designed to improve the teachers well-being (Actions schools planning guide "Act Now", 2008).

Teacher Health and Wellness

Teachers are at the forefront of the health promoting school model. The Quality School Health even published a paper on the role of the teacher in the Comprehensive school health model which states that "teachers are involved with all four aspects of a CSH program and can work towards specific goals to enhance each component (CAPHED, 2005)." The article is written to help teachers implement the program better

so that they may meet the needs of more of the students. Teachers may be better equipped to meet the needs of more of the students if they were living the active, healthy life that teach about. Teaching by example.

Teacher health has been an ongoing concern over the past few decades (Kyriacou, 1987; Capel, 1992; Byrne, 1995; Beehr, 1995; Guliemi and Tatrow, 1998). In a two year study titled "Teacher Wellness: an educational concern" 600 of 20,000 teachers were on disability leave. These are teachers that are not able to share their knowledge and teaching skills with their students due to the stress of the job (McConaghy, 1992). Weasmer, Woods and Coburn did a study in 2008 that followed up on the ideas of McConaghy. They focused on the common characteristics of teachers who remain in the profession to try to aid in correcting the problem of teachers leaving the career permanently. These characteristics were personal environments, individual dispositions, positive critical incidents, and family support (Weaser, Woods, & Coburn, 2008).

An intervention study done in 1984 showed that, in a seven week training program where they had 32 volunteers and 15 facilitators for the program, feasibility in each school depended on the administration's support. Additionally there was a need for release time from school for volunteer teachers to commit to organizing the program (Falck & Kilcoyne, 1984).

How can we help these teachers find a healthier balanced lifestyle? A book written by Queen; The Frazzled Teacher's Wellness Plan is a five step program for reclaiming time, managing stress, and creating a healthy lifestyle. The five steps include:

1) Identifying schools as a culture of stress
2) Restructuring Personnel and Teaching Priorities for a healthy lifestyle

3) Mastering the science of stress management for better health
4) Arresting time bandits at home and at school.
5) Using nutrition to support a healthy lifestyle (Queen, 2006).

A study on teacher burnout also suggests "social support should be an important variable to include when designing a prevention or intervention program in specific work settings. It might be very useful to try to increase social support networks, and to teach staff ways of maintaining or increasing support at work order to buffer potential negative effects of high demands (Pascual, Perez-Jover, Mirambell, Ivanez, & Terol, 2003, pg. 520). "

Literature has proven that there are many benefits and increased performance when team-based approaches are adopted (Barrick, Bradley, Kristof-Brown, & Colbert, 2007). Team dynamics with teachers may include: social support, social connection, feelings of inclusion, making new friendship, creating confidantes, avenues of collaboration. Social support involves the relationship among individuals. It has been defined as "information from others that one is loved and cared for, esteemed and valued and part of a network of communication and mutual obligation (Cobb, 1976; Cohen & Wills, 1985; Seeman, 1996). It has been proven to reduce psychological stress, like depression, and anxiety (Fleming, Gisriel, & Gatchel, 1982) and has also been linked to physical health benefits, for example positive adjustment to a number of diseases: heart disease, cancer, arthritis and diabetes (Holanhan, Moos, Holahan, & Brennan, 1997; Stone, Donatone, & Gonder,1999). A large body of literature states the benefits to social support as a coping strategy (Kim, Sherman, & Taylor, 2008). The psychological

and physical benefits of being part of a team can largely affect an individual's overall wellness.

In the school setting there is a social support that offers the teachers many benefits. As previously mentioned social support could lead to increased teacher collaboration, which would help to unify what is being taught across grades and increase opportunity for cross curricular activities. It could positively affect the workplace atmosphere and make the halls and staffrooms a friendlier place to be. Social support has also been linked feelings of stability and when you feel comfortable in your surroundings you are more able to take risk and grow in personal development.

Another benefit is that social connection can help combat teacher stress and burnout. One of the leading symptoms of teacher burnout is depersonalization (Alvarez Gallego, 1991). In many studies on teacher stress one of the well-documented coping strategies or prevention methods is seeking social support (Gana, 2000, Laugaa, 2005).

Chapter Three: Methodology

Researcher Statement

I, the researcher, have a vested interest in teacher wellness. As a teacher, competitive athlete, and a person dedicated to fitness and exercise, this area interests me a great deal because my true passion has long been the area of health and wellness and my current career is teaching. I see this study as an effective way of combining my two degrees (human kinetics and education) to explore the evident need that I have recognized in the short time I have been immersed in the teaching community. Being a new teacher and a less experienced staff member I observe the hectic lifestyle and time constraining schedule of my colleagues and see how their wellness suffers. Two things I consider are: "how can I prevent it from being my future?" and "how can I assist my colleague in addressing these problems?" I feel my dual perspective in these areas makes me a valuable, creditable researcher. Also as a National Wellness Institute (NWI) certified wellness coordinator and wellness manager I am hopeful that this evaluation and research will contribute to the literature on teacher wellness and preventative teacher health.

Background

An independent middle school in British Columbia has begun to address this issue. This school is extremely busy and demanding on both students and teachers, offering a high level of academics with an extensive extracurricular program. Like most private schools, it expects heavy time commitments from teaching staff, more of a lifestyle than a career. The middle school has taken part in a unique physical activity

intervention as part of their wellness initiative involving teachers using pedometers and combining a team-based approach with goal setting in the school atmosphere.

As master's student researching teacher health, the school sought me out to do a process evaluation of their "Step It Up" program. Process evaluation is a component of intervention research that investigates if the intervention was delivered and received as intended.

Design

In the proposed study a mixed-methods design was utilized. Both qualitative and quantitative methods were combined to gain an understanding of the factors of implementing the "Step It Up" program. Qualitative research is a valuable method to understand and interpret aspects of the world, increase the universal knowledge of objective and subjective lived experiences, and make sense of the phenomenon being studied. (Thomson, Nelson & Silverman, 2005.) The qualitative approach to research is utilized with the intent to collect and gather insightfully rich, meaningful and textured data (Creswell, 2002). The qualitative portion was a concurrent design where the two methods will be given at the same time. Therefore, the implementation and analysis will not be influence by the other method.

Qualitative interviews provided an in-depth insight into a selected number of participants in the program. Although not all participants were interviewed, all were invited to take part in a qualitative questionnaire to further explore the barriers/challenges and facilitators/successes of the "Step It Up" program.

Quantitative research was used to describe the population and changes in the environment. Quantitatively the demographics and the descriptive statistics of the step logging documents and goal records were collected and calculated.

Process evaluation is used to accept, refine or correct the program design. It offers the insight to monitor and ensure quality of intervention implementation as well as providing information on the depth of adherence, feasibility, implementation and potential problems that may have arisen (Young, 2008). Typically a process evaluation focuses mainly on:

1) Dose - the amount of intervention that was delivered.

2) Reach - number of those who received it.

3) Fidelity- the quality of the intervention.

In some cases, mostly in interventions running for the first time such as this one, an in-depth report of qualitative findings from interviews and questionnaires can be complied for evaluation (Griffin, 2010). A "process evaluation is used to identify programmatic and contextual moderators of effectiveness and determines if a program was delivered as designed" (Baranowski, 2000). Process evaluation enables an understanding of how the programs were developed and why programs were (or were not) implemented successfully.

Stufflebeam's CIPP model of evaluation was used when deciding on a method of evaluation (Stufflebeam & Shinkfield, 2007).

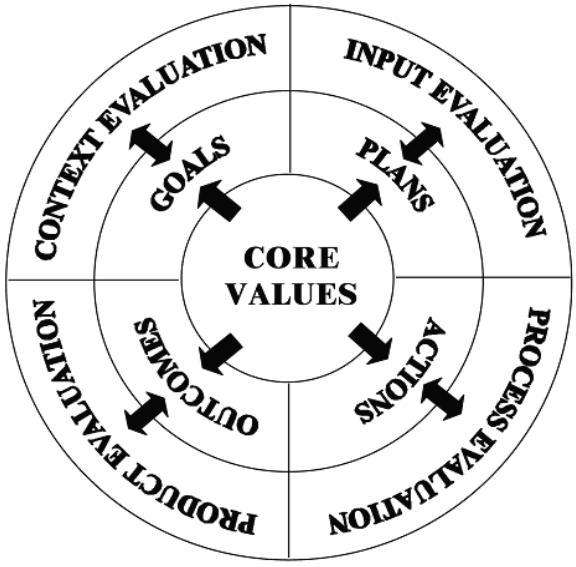

Figure 1: Key Components of the CIPP Evaluation Model and Associated Relationships with programs.

This model shows the things to consider when deciding on a type of evaluation. First of all deciding on what the core values of the program are. For example, effectively engaging teachers in a physical activity intervention to support their health and well-being. The root word of evaluation is "value". These values help to create a foundation for validating the criteria of evaluation. Process evaluation provides judgments of actions plus feedback to strengthen staff performance and future programs. In a CIPP evaluation model checklist it is stated that process evaluation uses are to; coordinate and strengthen staff activities, strengthen program design, maintain a record of the program's progress and program costs, and this evaluation can be used to be presented to show program's progress to program's financial sponsors, policy board, community members, and other developers interested in similar programs (Stufflebeam, 2007). Process evaluation was

chosen because the uses and aims of this type of evaluation fit with "Step It Up" program desires to explore the implementation, design and feasibilitiy.

Procedure

After receiving ethical approval from the University of Victoria, and obtaining permission to conduct research from the middle school, data collection began. Participants were recruited for both the interviews and the questionnaire/survey portion of the evaluation. Participants completed a questionnaire and short survey and returned it within two weeks. The researcher contacted the chosen key members and set up interview times.

Qualitative inquiry was done through the process of interviewing some key members who were purposely sampled. The interviews were open ended, face-to-face, one on one, semi- structural style and recorded using a Sony Digital voice recorder. Field notes were taken in the event of technological difficulties. A qualitative questionnaire and quantitative survey were given in hard copy to all participants to be self completed and returned in two weeks. The step logging sheets and goal records were gathered to analyze and explore the feasibility of the program.

Setting

An independent private day/boarding school located in Victoria, BC. It is divided into three separate schools. The junior school, grade K-5 on one campus and the middle school (grade 6-8) and senior school (grade 9-12) on another campus. The middle school was the focus of this study.

Participants and recruitment

Participants were 25 members of the middle school staff that participated in the "Step It Up" program (86% of staff), 16 females and 9 males (plus the coordinator), ranging from age 30-60. The middle school staff members were informed about the study at a staff meeting and were asked to sign up on a sheet that was be posted in the staff room if they were interested.

The poster was put up in the staffroom requesting participants to sign up if they would like to be included in the survey. A separate sheet was posted to identify those that were willing to be interviewed; five were purposively chosen. A third party representative went into the school to obtained signed consent and hand out the questionnaire and survey from those that participated in the study.

Intervention

The "Step It Up" program integrated school-based teacher-focused efforts to modify physical activity levels using pedometers. The four-week intervention designed by school staff with health promotion and healthy lifestyle expertise incorporated a team-based approach with goal setting in the workplace atmosphere. Participants were separated into groups of five with a team leader on each team by the coordinator of the program, a staff member from the physical education department. The role of the team leader was to communicate between the coordinator and their team. They helped to gather record sheets, motivate and inform their team of any news from the coordinator.

The pedometer choosen for the intervention was a Omron HJ-112. This pedometer has been proven to be reliable, valid and accurate in comparison to other pedometers (Hasson, Hailer, Pober, Stadenmayer & Freedson, 2009; Holbrock, Barreira & Kang, 2009). The pedometers were calibrated for each individual and participants had

a three day trial period before choosing a goal of daily steps. Following a consultation with the program coordinator and the team leader the participants set their daily goal of steps. Each participant received a point on each day that they attained their goal and were awarded zero points when the goal was not reached.

The intervention involved an element of friendly competition. The participants completed a tally sheet with the daily steps and whether they attained their goal. At the end of each week the tally sheets were collected by the team captain and handed in to the coordinator. Points were tallied and the team with the most goal points and/or the highest total steps at the end of the week would receive a "prize", external reward or incentive.

Data Collection: Procedures and instrumentation

Qualitative inquiry was done through the process of interviewing some key members who were purposely sampled (Patton, 2002). The interviews were open ended, face-to-face, one on one, semi- structural style and recorded using a Sony Digital voice recorder. Field notes were taken in the event of technological difficulties. A qualitative questionnaire and quantitative survey were given in hard copy to all participants to be self completed and returned in two weeks. The step logging sheets and goal records were gathered to analyze and explore the feasibility of the program.

Qualitative interview

The proposed number of participants for the interview portion were five. Participants were purposefully sampled based on their role in the program (for example: the coordinator, a team leader, and participants). The interview was scheduled for 30 minutes and was scheduled at the participant's convenience. The interview was recorded using a Sony digital voice recorder.

Qualitative Questionnaire

A standardized qualitative questionnaire were given to all staff members who were part of the program and agreed to take part in the study. It included three questions to gain specific feedback on the program. Questions addressed the successes and the challenges of the "Step It Up" intervention and to gain information from the participants on recommendations for future programs (See Appendix). This questionnaire took no more than 15 minutes to complete.

Quantitative document review

The quantitative portion of the study included demographics and the documents review. The step logging sheets were collected from the coordinator. The sheets and goal record data was put into tables using Microsoft Excel.

Data Analysis

Interview transcripts and open-ended questionnaires were combined for analysis and were analyzed using the technique developed by Colaizzi (1978) and modified by Roberts and Caims (1999). This procedure began by listening to the interviews and reading through the questionnaires repeatedly to gain a sense of the meanings. The interviews were then typed out verbatim. Transcriptions were up loaded into NVIVO to assist in textual analysis. Significant statements were then extracted from each transcription or questionnaire. Using these significant statements, statements of meaning or themes were developed. The researcher then met informally with the interviewees to ensure the accurarcy of the theming. The themes were only included if it was common with 60% of the participants. The themes that were similar were grouped into clusters and

were titled based on the central meanings. Similar clusters were put in to categories and labeled based on their principle meaning (Colaizzi, 1978).

Trustworthiness

Consistent with qualitative research methods a level of trustworthiness must be found. Trustworthiness is achieved in a study when the data collected is generally applicable, consistent, and neutral (Thomas et al., 2005). The qualitative questionnaires were analyzed following the same protocol as the interview.

The themes were approved by the interviewees and then the thematic, cluster and categorical representation were approved by the researchers supervisor. This step allowed the researcher to attain validity of the analysis of the data. The categories and their respective clusters and themes were then put into tables. The thematic, cluster and catergorical representations were used to reveal the structure and logic of the experience under investigation (Polkinghorne, 1989).

The step logging forms and goal record documents were entered into excel as well and means, modes, and medians in a number of different categories. For example, steps per day, steps per week, and team steps per week, total steps, total team steps, goal attainment per week, total goal attainment and total sheets passed in, collected and analyzed. After independent data analysis the findings from both data sources were integrated for interpretation.

Chapter Four: Results

In chapter four the data analysis of five in-depth personal interviews with participants in the "Step It Up" program were melded with the open-ended questionnaires from the rest of the participants and quantitative step logging records. The rationale for combining the data was provided in the previous chapter. Both sets of answers fit with the same cluster charts. This chapter will be organized into four separate parts. The first section will be demographic information about the participants. This will be followed by a description of the participation in the program including charts displaying step logging data. This will be proceeded by an investigation and description of the categories, clusters and thematic structures. Lastly, the chapter will conclude with recommendations from the participants on how to adapt the program for future use.

Characteristics of the Participants

There was a 72% participation rate, with 18 of the 25 participants taking part in the study. The average age of the participants was 45 and the average years of teaching experience was 16 years. 18 teachers and administrators returned the open ended questionnaire. 4 of those 18 were then interviewed as well as the program coordinator.

Interviewees Profile

The interviewees were assigned pseudo names to protect their identity.

Tara is a female and has taught for 11 years. *Tara's* role in the "Step It Up" program was team captain. *Nina*' has been teaching for18 years. Nina was the coordinator for this program and spear headed the project. She was not a participant as she took the role of organizing sign up, step logging, prizes and tabulating the points. *Margie* has been teaching for 23 years. In the "Step It Up" program *Margie* was a participant on one of the

five person teams. *Greg* has taught for approximately 22 years and was a participant in the program. *Samantha* has taught for approximately 30 years. *Samantha* was a team captain of what she calls "a wonderful" group of teachers.

The stepping logging documents were collecting from the participants and will be present in chart format below. The chart shows each weeks total steps walked by each participant and their total goal points for the week, as well as totals for the entire duration of the program.

Description of Participation in the intervention

The following section shows team results that were gathered from the step logging sheets that the participants passed in each week. The chart shows weekly goals points attained and weekly actual step count numbers. The results shown below are summarized in Table 10 showing the total and mean values for team goal points, step points and sheets passed in. One of the most interesting findings may be the sheets passed in. Showing a total of 81 and a mean of 3, however, when looking at the team values and sheets passed in, it is clear that the team who passed in the most sheets had the highest value of step points. The mean is 3 but the range was 6 showing one team passing in 20 sheets and some teams passing in 14. It is also interesting to note that the step points and goal points show no pattern. Perhaps a pattern may have developed if that program were to run for a longer duration. The values are variable throughout the program duration. The following charts bring insight to adherence and consistency and highlight the barrier of step logging. This will be discussed further in the next chapter.

Table 1: Team 1 Step logging points

Name	Team	Week 1 Goal	Week 1 Actual	Week 2 Goal	Week 2 Actual	Week 3 Goal	Week 3 Actual	Week 4 Goal	Week 4 Actual	Total Goals	Total Actual	Sheets passed in
A	1	7	76960	6	62489	7	66190	6	62183	26	267822	4
B	1	6	124067	7	111249	6	99574	6	95665	25	430555	4
C	1	6	65025	1	46900	4	53650	4	55554	15	221129	4
D	1	2	61306	1	55819	4	64793	3	58644	10	240562	4
E	1	7	116000	7	118000	7	80000	7	93500	28	407500	4
		28	443358	22	394457	28	364207	26	365546	104	1567568	20

Table 2: Team 2 Step logging points

Name	Team	Week 1 goal	Week 1 actual	Week 2 goal	Week 2 actual	Week 3 goal	Week 3 actual	Week 4 goal	Week 4 actual	Total goal	Total Actual	Sheets passed in
A	2	7	93035	6	95800					13	188835	2
B	2	7	83001			7	81470	7	82265	21	246736	3
C	2	6	75342	3	67795	7	80970			16	224107	3
D	2	5	79835	7	87079	7	90665			19	257579	3
E	2	6	88000	4	55988	5	68000			15	211988	3
		31	419213	20	306662	26	321105	7	82265	84	1129245	14

Table 3: Team 3 Step Logging Points

Name	Team	Week 1 Goal	Week 1 Actual	Week 2 Goal	Week 2 Actual	Week 3 Goal	Week 3 Actual	Week 4 Goal	Week 4 Actual	Total Goals	Total Actual	Sheets passed in
A	3	7	82025	6	86776	7	87392	7	86235	7	342428	4
B	3	4	47086	4	67054	7	182751	7	68138	22	365029	4
C	3	7	91066	5	70310	5	68367	5	74211	22	303954	4
D	3					3	69000			3	69000	1
E	3			2	62100					2	62100	1
		18	220177	17	286240	22	407510	19	228584	56	1142511	14

Table 4: Team 4 Step Logging Points

Name	Team	Week 1 Goal	Week 1 Actual	Week 2 Goal	Week 2 Actual	Week 3 Goal	Week 3 Actual	Week 4 Goal	Week 4 Actual	Total Goals	Total Actual	Sheets passed in
A	4	2	48655	3	65076	6	74655	1	58483	12	246869	4
B	4	4	71304	6	73862	6	82339			16	227505	3
C	4	6	83260	6	88000	6	75800	6	77340	24	324400	4
D	4	7	103945							7	103945	1
E	4	3	66781	2	62302					5	129083	2
		22	373945	17	289240	18	232794	7	135823	64	1031802	14

Table 5: Team 5 Step Logging Points

Name	Team	Week 1 Goal	Week 1 Actual	Week 2 Goal	Week 2 Actual	Week 3 Goal	Week 3 Actual	Week 4 Goal	Week 4 Actual	Total Goals	Total Actual	Sheets passed in
A	5	7	85498	6	104170	7	93097	7	86380	27	369145	4
B	5	6	113197	5	92850	5	97400	6	96400	22	399847	4
C	5	2	75297	5	74811	5	81794	7	90414	19	322316	4
D	5	6	90943	7	105579	7	96068	7	92539	27	385129	4
E	5	2	55985	4	67393	5	82479			11	205857	3
		23	420920	27	444803	29	450838	27	365733	106	1682294	19

Table 6: Total team Step Logging Points

Name	Team	Week 1 Goal	Week 1 Actual	Week 2 Goal	Week 2 Actual	Week 3 Goal	Week 3 Actual	Week 4 Goal	Week 4 Actual	Total Goals	Total Actual	Sheets passed in
Group												
Total		122	1877613	103	1721402	123	1776454	86	1177951	414	6553420	81
Mean		5	75105	4	68856	5	71058	3	47118	17	262137	3
Std Dev			20115	2	19784	1	25475	2	14711	8	103629	

Qualitative Findings

Categorical, Clusters, and Thematic Structures

The data analysis of both the interviews and questionnaires revealed two categories that fit into the a priori categories: (a) Benefits, (b) Barriers, and (c) Suggestions for future (which will be discussed in part three of this chapter). Benefits and barriers (the categories) consisted of three clusters each. Table 7 provides a visual overview of the categories and clusters. Tables 8, and 9 illustrate the sub-themes with each cluster. All of the theme groupings represented the feedback of at least 60% of the participants.

Table 7: Categories and Clusters

Categories		
Benefits	Barriers	Recommendations
Clusters within each category		
Motivation	Step Logging	
Awareness	Time Management	
Social Support	Goal Setting	

Category One: Benefits

Benefits in the teacher physical activity intervention program influenced satisfaction, willingness to participate and partake in a similar program in the future. A benefit was defined as a characteristic that enhanced the program. The staff members were forthcoming in expressing the successes or benefits they found in their experience of the "Step It Up" program.

The benefit category contains three clusters: (a) Motivation, (b) Awareness, and (c) Social Support. The themes that emerged from the data analysis are arranged in three clusters that are presented in Table 8. Each cluster is then discussed and enhanced with the inclusion of participant quotations.

Table 8: Category One: Benefits

Clusters		
Motivation	Awareness	Social support
Themes within each cluster		
Activity	Pedometer	Fun/Enjoyment
Health Consciousness	Inactivity	Role Modeling for students
Team dynamic		

Cluster one: Motivation

Through the interviews and questionnaires the participants expressed how motivating the program was and how they were inspired throughout its duration. This included motivation to become more active in general, to increase steps, to start a health regime, to get their family and friends involved and to achieve goals and not let the team down. Motivation and inspiration was felt from the moment the pedometers were handed out and the participants were organized in to teams. Throughout the interviews and questionnaires the participants described their experience and when discussing the motivation three clear themes emerged: (a) Activity, (b) Health Conscious, and (c) Team Encouragement.

Activity. The participants explained that the combination of pedometers, goal setting and competition created a motivation to achieve the most steps possible, hence a motivation to be more active. Some reasons were to see the number they wanted on the

screen of the pedometer, be able to check off that they had achieved their goal and adding to the team totals to win bragging rights and prizes. Despite the reason for this increased activity, the data very clearly depicts that participants mentioned increased activity and motivation to be activity as a benefit on the program.

> On a personal level, it motivated me to become more active. I just got busy so it motivated me to continue to be more active. The goal I set for myself which was 10,000 steps and that was motivating to meet it. Walking became more fun and engaging. (*Tara*)

> Me, personally, I like that thinking consciously about how much you're doing and that measurement gives me some feedback and builds motivation as well. It was a really great motivator. (*Samantha*)

> I was very motivated to achieve my goal, to simply see the number I wanted on my pedometer and be able to put that check mark in the box for goal attained on that day. Sometimes I would find myself pacing around my house before bed to get the extra 200 or 300 steps I needed. I didn't want to let my team down or be the person who didn't contribute to the team's total. It was all very motivating. (*Margie*)

Health Consciousness. Throughout the data collected the participants made it clear that this initial physical activity program had sparked or motivated an all around health assessment and in some cases healthy choices and modification in their individual lives.

> There was a heightened awareness, and it got people to be more conscious. The people that were involved, at least initially, became very conscious. There was that initial fury of interest and even the librarian got really interested in the walking, she may not have walked much, but she at least got interested. As part of another program, it would really work well to add to this intervention. You would almost want to feed it in to something else. A more holistic approach, combining it with other health initiatives. For some, I think it made you ask questions about the other healthy steps you are taking. No pun intended. That is something to take advantage of, a teachable moment if you will. (*Greg*)

> I had a lot of people inquire about how to get more pedometers for their family and friends and they would speak to me about how this has sparked the people around them, at home and what not, to become more health conscious and want to get involved as well. (*Nina*)

Team dynamic. Staff members acknowledged the impact of the team structure and encouragement. At times the team structure may have been both a success and a challenge when the encouragement became more of a pressure. For the most part participants found the team dynamics and competitions for pride and prizes another motivating factoring in increasing their steps/ activity and healthy behavior.

Cluster Two: Awareness

Throughout the data collection process the participants spoke on the awareness

the pedometer and program provided.

Pedometer. The pedometer gave individuals immediate feedback on the activity done through the day. Many participants mentioned throughout the program they become more aware of what a healthy active day felt like, and what 10,000 steps felt like.

> The pedometer was easy as pie. Actually I was quite proud of it, proud of the fact that I was wearing it and using it. I discovered about myself in terms of the walking that I do just naturally, everyday in the kind of detail that I was happy to know. I didn't realize what amount of exercise I got until I saw it registering on the machine. Also when I noticed my steps were low by the middle of the day I "stepped it up" and did extra walking in the evenings. (Margie)

Inactivity. The group spoke about how if the pedometer numbers was still low half way through the day they gave them the awareness that they needed to increase their steps or do some extra activity to achieve their goal. They were given the awareness of how inactive they were on a given day.

> We got some people out walking some more steps than they probably ever realized that they could do. Plus the knowledge of the fact of what 10,000 steps looks like in a day and that it wasn't as easy as some thought that it might be. It was definitely a benefit to get the couch potatoes off of theirs butts and have them noticing how inactive they were and getting them to achieve their goals. (Nina)

Cluster three: Social Support

A school is a dynamic environment that has many pieces and parts. A person's attitude or mood can change the environment, or even the state of the coffee in the staff room change affect everyone. The intervention brought changes as well. Participants mentioned their increase connectedness through the program. Having had a small team they made friends or had conversations that they might not have had otherwise. Participants were working towards a goal together in that small team. It took many strictly professional relationships to a personal level. The participants spoke strongly about how it has affected their work environment. Three themes emerged from this; (a) Social Support, (b) Fun/Enjoyment, and (c) Role Modeling for Students.

> The team spirit was awesome, in fact the group of people of which I was part secretly chatted with each other about what we were doing and were entertained by it and that developed friendships that were actually nice directions. When we saw the posters up in the staff room that showed where we stood, there was a bit of pride and as a group of people there was hilarity and there were conversation that would never have happened, there was competition, friendly competition and there were people that were amazed at each other that we could actually take part and be successful because we didn't come across as being that kind of person. (Margie)

Fun/Enjoyment. Staff members were happy to report the fun and enjoyment the program added to their work day. The atmosphere in the staff room was mentioned. There was excitement when the results were posted and friendly banter and connections made amongst team members.

"It was fun. I think that team, that togetherness, a feeling of belonging that's good for lots of people." - (Samantha)

Role modeling for students. When so many staff members are involved in an activity, it is hard for their participation to not affect the students. The students knew about the program, were cheering on their favorite teachers and always interested in the pedometers. This is a great example of role modeling; students seeing their teachers participating in a healthy and active endeavor. It may be easier to start a similar program with the students after they have observed their teachers involved in the "Step It Up" program.

> I think too, the benefits were seeing the students, a lot of us teachers communicated that we were doing this program with the student so the students got in on it too, they became our cheerleaders. I think it was good modeling for them to see their teachers participating in a school wide initiative to get more activity. (Tara)

Category Two: Barriers

Barriers focused on the challenges participants had with the program or aspects that made it difficult to be fully engaged. The barriers category contains three clusters: (a) Step Logging, (b) Time Management, and (c) Goal Setting. The

themes that emerged from the data analysis are summarized in Table 9. Themes are then discussed and illustrated with quotations taken from the interviews.

Table 9: Category Two: Barriers

Clusters		
Step Logging	Time Management	Goal Setting
Themes within each cluster		
Inconvenience	Additional Responsibilities	Realistic/Unrealistic
Team responsibility (no sheet=no points)		
		Challenge vs. getting points

Cluster one: Step Logging

Throughout the interviews and questionnaires the participants spoke about the difficulty they had with recording their steps and goals. With all the other responsibilities of being a teacher the paper work became just another thing. These concerns were separated into two themes: (a) Inconvenience, and (b) Team Responsibility.

Inconvenience. Teachers describe the additional task as an inconvenience. Wearing the pedometer was a routine but it was difficult to remember to record the steps at the end of the day. Some participants report wearing the pedometer everyday even if they didn't record their steps everyday. During this intervention the middle school was in the midst of a large scale, school wide production. It was a hassle to remember the paper work.

> The old paper trail became a hassle. I had to constantly track people down to pick up their sheets. If their sheets didn't come in, it became difficult to calculate the points. (Nina)

> I had trouble with the logging of the steps. I was thinking after how it would have been nice to have a daily check in at the end of everyday, you had to meet with or someone checked in with you. I found that people who are used to being good record keepers had no problem but people who aren't good record keepers, they are going to put the pedometer down and forget about it and come to school with out it for a few days and make it up. Perhaps creating something online would be easier. Like having an email that takes you to a link to record your points each day. We are slaves to the computer. (Greg)

Team Responsibility. The structure of the program had all participants working in teams. There were benefits and barriers to this structure. Some members felt negative pressure or guilt if they did not record and pass in their step logging sheet. The way the program was set up, if a member didn't pass in their sheet the group got none of their points for that week. This made a large point difference between the groups that simply passed in there sheets and the ones that didn't despite how hard each member was working. It become more about who was diligent enough to do their homework and not about who was the most active.

> There were a couple of people that had so many other things going on in their lives and they couldn't focus on it and I think they felt guilty about

> letting their teams down. So that was a bit of a dilemma. That would be the only negative. (Samantha)

Cluster two: Time Management

A teacher's work day is not limited to a regular 8 hour work day. Most teachers have many other responsibilities at a school besides simply just teaching their classes. The school wide theater production occurring at the same time as the intervention caused time management problems for participants. This cluster had one main theme: (a) Additional Responsibilities.

Additional Responsibilities. Although it did not take a lot of time to participate in the program, some participants felt it was just another activity remember to do. After the first few days the novelty of the program wore off and the time commitment became a barrier.

> One of the biggest barriers were that people signed up to participate and then their level of interest for whatever reason tapered off and the busy schedule of being a teacher was a barrier. To find time and remember to write down steps and that sort of stuff. (Tara)

> The biggest challenge was making it a routine, getting the pedometer on and keeping track of the logging. I was certainly guilty, many of us sometimes forget. You got caught up in what's going on in the day and then it becomes a lower priority. The teaming was nice in the sense that we are trying to promote it with each other, but since its not part of the work day, you kind of lose sight of it. (Greg)

Cluster Three: Goal Setting

Goal setting can be very helpful when done properly. It became clear through the data analysis that some participants felt goal setting was a barrier more than it was a benefit.

Within the cluster of goal setting, three themes emerged: (a) Realistic/Unrealistic; and (b) Challenge vs. Getting Points.

Realistic/Unrealistic. Many participants were unaware of the steps they took in a day and did not spend time deciding on a realistic goal. They made the goals either too easy or too hard. Creating realistic goals is very important in effective goal setting; it affects goal attainment and process effectiveness.

> There were a couple of people that didn't meet their goals and they felt badly about it I think. But mostly it was good, because the competitive spirit that people have, it was encouraging from that point of view. (Samantha)
>
> The goal setting was effective on a personal level but perhaps some participants needed something other than a personal goal to motivate them. Or a more realistic goal? Extrinsic rewards? Who knows. (Greg)

Challenge vs. Getting Points. Participants who were easily making their goal everyday were torn between changing their goal to challenge themselves or leaving it with the lower easily achievable goal so that their time would continue to gain points.

> Some were reluctant to change their goals even if they were meeting and exceeding it everyday. They were enjoying getting points for their team. I am not sure we could avoid that conflict of interest. (Nina)
>
> I think it depended on the person. Was pushing themselves more a priority then getting points for their team? I know for me, I was more concerned with the competition and attainment of points. (Tara)

Participants in both the questionnaire and the interview had the opportunity to give their feedback on how the program may be made to run better the next time around. Table 10 is direct quotations from participants. These results will be more fully discuss in chapter 5.

Table 10- Recommendations from "Step It Up" Participants

Changes to the program- Direct quotes.
- Might be an idea to pick up and drop off pedometer at the end of each day so that the coordinator is in more contact with the participant.
- Record keeping and goal setting theory were really not effective. Perhaps electronic records may be easier.
- I'd like the program to be longer. No reason it can't be for the whole year. No harm in doing it all of the time.
- It was good-make a two week trial at the beginning to see if people really want to carry on.
- Nothing. I love it.
- Set long term goals in an on-going social setting (social groups).
- Show the place of walking exercise within a complete physical fitness program.
- Set myself incremental increased challenges.
- Involve the students.
- More holistic approach; include nutrition, stress relief and other fitness type activities.
- More organized walking with the team.
- One-on-one goal setting sessions.
- Buddy system, someone to remind you to pass your sheet in and wear your pedometer.

- Nothing.

- More efficient logging method was needed.

- I think it would be been nice to have more reminders.

- I noticed the students were becoming interested and wouldn't it be nice to involve the whole school.

- Perhaps score teams based on average number of steps per person based on who submitted forms (I realize this could be problematic if a "low stepper" refused to submit so that the team average wouldn't be brought down… just an idea!)

- Length - go longer and follow up with beginners.

- More definite end date.

- Email weekly tracking sheet rather than writing it down and submitting it manually.

- 10,00 steps isn't enough.

- Get staff to walk 20 minutes at lunch together for team building.

In chapter five the study's findings will be discussed in the context of current literature. The limitations of the study will be discussed; implications and suggestions for future research will also be explored.

Chapter Five: Discussion

Chapter five is the overview and discussion of the study's results. This chapter will be separated into five sections: a summary, a discussion of the research questions and the literature review, implications for teachers, implications for administrators and school boards, directions for further research and concluding with a final summary of the investigation.

Summary

This study used a process evaluation with a mixed methods design to provide an understanding of the experiences and recommendations of teachers and administrators who took part in the "Step It Up" program. The purpose of this study was to find the barriers and benefits of the intervention as experienced by the middle school teachers and administration. Interviews and open-ended questionnaires were employed to gain insight into their experience of being in the team based pedometer challenge using goal setting. Participants provided recommendations regarding how to improve the program in the future. Lastly, step logging sheet data and demographics chart were used to characterize the participant's experience.

Research Contribution

While research exists on the experience of teachers and stress, burnout, wellness, and physical activity interventions in the worksite, very few empirical studies examine the teacher wellness (Russell-Mayhew, 2007). Even fewer studies focus specifically on wellness physical activity interventions made for teachers in the school setting (Ritter, 2007). This study provided some valuable comparisons and a baseline understanding of pedometer programs with groups of employees. As a result of the process evaluation in

the school setting, this study offers new insights to the field of teacher wellness and preventative health. The following section will discuss the benefits and barriers of the team based, pedometer program that emerged through process evaluation.

Benefits

The participants were forthcoming in discussing the benefits of the program and overall seemed to enjoy the program. The three most commonly observed benefits of the program were: motivation, awareness and social support. It is difficult to compartmentalize these three benefits as they are all interconnected. I separated the benefits for discussion purposes however there is noticeable overlap.

Motivation

Motivation can be defined as being moved to do something or the reasons for arousal, selection, direction and continuation of a behavior (Ryan & Deci, 1985, 2000; Standage, Duda, & Ntoumanis, 2005). An unmotivated person shows no interest and no action, however, a motivated person is focused and energized to act toward an end. From birth human beings are innately motivated to learn and grow in our environment. Motivation has been widely studied and two distinct types have been defined. Intrinsic motivation is doing something because it is inherently interesting and enjoyable (Ryan and Deci, 1985, 2000; Li, 1999; Standage, Duda, & Ntoumanis, 2005). This can be seen as the internal drive to achieve, succeed, learn and grow; for example, trying to achieve a goal you have set for yourself for your own personal growth. Extrinsic motivation is defined as "doing something because it leads to a separable outcome" (Ryan and Deci, 2000). An example of this would be a teacher simply walking more to help win the team prize for week. Research has shown that both types of motivation are valuable in

yielding results and a combination of both intrinsic and extrinsic motivation can be beneficial (Benbasast, 2009; Barvata, Smith-Sprangler, Sundaram, Gienger, Lin et al., 2007).

The participants found there to be both intrinsic or personal motivation as well as extrinsic motivation to increase steps through taking part in the program. This made motivation a clear cluster in the findings from both the interviews and the open ended questionnaires. In this program the combination of individual step goals (intrinsic motivation) and the team competition dynamic and pedometer (extrinsic motivation) proved to be a success in motivating the participants. This motivation is mirrored in a study on effective walking program by Benbasat (2009), where he states that personal motivation features have been shown to be a key factor to the success of a program. "Handing out pedometers is not enough. The program that realizes significant gains are those which best motivate their users; both personally, through daily goals and diaries, and externally, by providing means of social support" (Benbasat, 2009). More support for these findings is made known in a systematic review on using pedometers to increase physical activity and improve health. It showed that having an individual step goal is a vital predictor of increasing physical activity, whereas participants without a step goal have no measurable improvement in steps (Barvata, Smith-Sprangler, Sundaram, Gienger, Lin et al., 2007). In a study by Fletcher, Beherens, & Domina (2008), 2600 blue and white collar employees working in 9 different divisions of city government in large metropolitan areas in the western United States were examined using open ended questionnaires and focus groups. Through this process both barriers and enablers to work site physical activity programs emerged. Self motivation and external motivation were

discovered to be enabling factors in worksite physical activity programs. My research corroborates these findings as all the interviewees mentioned the motivating benefit of the program.

Intrinsic motivation is an excellent method to promote behavior, performance and well-being while it increases one's effort, and one's likelihood of participating in a given activity again (Li, 1999; Motl, 2007). Therefore a key in recreating this type of program would be to increase and sustain the intrinsic motivation so participants can stay focused, driven and keen to join program in the future. Extrinsic motivators such as the team competition, bragging rights, weekly prizes and approval from teammates made the program more motivational.

The combination of both intrinsic motivators and extrinsic motivators made the walking more engaging and satisfying then it otherwise would have been without them. The commitment to the program and in turn the overall success in its delivery depended on continuing to keep the participants motivated. It is apparent in this study that motivation is a benefit and facilitator to the program and both intrinsic and extrinsic motivation should be considered when planning or preparing for such programs, whether it is in the worksite or the school setting.

Awareness

In this day and age life has become very busy. With the invention of many devices that are made to save us time in a day, as a society we are continually cramming more into 24 hours. It can become difficult to be fully present and aware of all that is happening for our bodies and us. Along with motivation, another benefit of the "Step It Up" program, the participant's highlighted awareness of how much activity they were

getting. The pedometer provides a constant awareness through the visual representation of steps walked that is displayed on the device.

Not only did the pedometer help to motivate, it also brought awareness of the specific amount of walking an individual was doing. It has been proven that pedometers increase awareness and motivation of physical activity and these findings are consistent with past pedometer studies (Chan, Ryan, & Tudor-Locke, 2004). That which gets measured, gets done. Without the use of a pedometer or some sort of tracking method, it is difficult to tell how much walking an individual is doing in a day. The pedometer alone brought new awareness and attention to an individual's walking behaviors.

Many people become overwhelmed with work, family, and other responsibilities and are not even aware of how unhealthy they have become. The pedometer and the program brought the awareness of their health needs back to the participants. A healthy change cannot be made unless a need to change is acknowledged. Based on the results of my study, awareness is tied into motivation and without this awareness of inactivity there would not have been as much motivation to change the behavior and increase steps. This awareness of inactivity may have helped some participants jump start their walking.

Social Support

Social support can be defined as supportive interpersonal relationships (Lemon, Zapka, Wenjun Li, Estabrooks et al., 2009). This can be difficult to quantify. Therefore little is known about the direct impacts of social support on the worksite and health related behaviors (Lemon et al., 2009). The perception of support amongst colleagues in the work setting has been associated with an increase work related outcomes (Lowe, Schellenberg, & Shannon 2003 & Steinhardt, Dolbier, & Gottlieb 2003). Lowe,

Schellenberg and Shannon (2003) discovered in a one time cross section telephone survey, surveying over 2500 Canadian employees, that the higher rating of social support correlated with higher perceptions of job satisfaction, commitment, increased morale, and lower absenteeism. Social support was strongly represented as a benefit of the program.

As reported in the findings, examples of social support included: comradery amongst team members, friendly competition between teams, social outings to increase steps and increased conversation around health and wellness. Social benefits themes included: fun/enjoyment and role modeling for students. Participants mentioned how these behaviours created a friendly atmosphere around the school and a sense of connectedness in an otherwise busy school day.

Benbasat (2009) noted social support as an important predictor of the success of a walking program. The three social factors that strongly correlated with increased physical activity are many people exercising together, friends encouraging each other and one friend to exercise with (Brownson, Baker, Housemann, & Brennan 2001). That is what happened in this study as similar phrases were taken from the participants in "Step It Up" program. The step competitions allowed for these factors to flourish in the school atmosphere. An older study conducted in the area of corporate health (Heirich, Foote, Erfurt, & Konopka, 1993) found that social support yielded more positive results. In the study they compared three approaches to physical fitness at the workplace, a staffed physical fitness facility, one-on-one counseling, and a combination of one-on-one counseling with organization of worksite to encourage peer support and mutual exercise activity at work and found that any program with social support was found to be more motivating and beneficial than one without (Heirich, Foote, Erfurt, & Konopka, 1993).

Social support, team and the activities being fun were all noted as enablers in the Fletcher at al. (2008) study of barrier and enablers to increasing physical activity. This represents the importance of social connectedness and team dynamics in improving physical activity levels. "Clearly, the issue of motivation, particularly its social aspect, is fundamental to the success of any exercise initiative (Benbasat, 2009, p. 7)." Social support has been proven to positively influence the workplace (Lowe, Schellenberg, & Shannon, 2003) and is a notable strength of this program. In future programs of this nature, social support should be considered in the planning of a school setting program.

Although the evaluation of this program was on the teachers themselves, it was interesting to discover that role modeling for students emerged as a theme and this further emphasizes the connectedness of the school environment. Davis (2005) found the same was true with their teacher pedometer challenge. "Students began to ask questions about the pedometers and we were able to tell them about fitness benefits of 10,000 steps per day based on personal experience as we modeled healthy lifestyles for them" (Davis, 2005). More research is needed to find what effects a physical activity program for teachers has on their students and also on the effects of a healthy teacher on their students. This finding could be beneficial in gaining funding for wellness program for teachers in the future.

A teacher wellness study was found that used pedometers, teams, and incentives with a group of staff at a middle school (Davis, 2005). This study was encouraging as the Davis study followed a similar format to "Step It Up" and yielded many of the same benefits. "In addition to obvious health benefits initiated by the program, it also helped to develop a cohesive community of steppers among faculty and staff with many continuing

to walk and use their pedometers to monitor their steps" (Davis, 2005). This consistency shows the feasibility of the program and further solidifies the benefits of such a program for teachers and administrated in the school setting.

Barriers

With the benefits also come the barriers. These are the factors which the participants felt hindered the program or made it difficult to increase steps and fully participate in the initiative. The barriers that were identified in the data were: step logging, time management and goal setting.

Step Logging

One of the most cited barriers was the method of logging steps. Participants were given a sheet each week where they were asked to recorded the number of steps they walked everyday and then put a check mark if they had successfully achieved their personal goal. Ideally these sheets were then meant to be passed in every Monday so the coordinator could tabulate the results in a timely manner. Participants noted it became a paper trail and a hassle.

The intervention divided participants into teams of five and each week prizes were awarded to the team with the highest steps and most goal points. Therefore the competition depended on receiving the completed logging sheets on the specified day. If a member did not pass in their sheet on Monday their points were not calculated into the team's total. This was a barrier that the coordinator had not planned for. Questions arose for the coordinator such as: was it fair to penalize the whole team for one member not being reliable? Was it fair that the team won because they were the most loyal book keepers? If a similar program were to be adopted by another school, these are the

questions that should be considered. The number of sheets that were passed in over the 4 week program are shown in Fig. 1. Out of a possible 100 sheets, 81 were passed in. Each participant averaging 3 out of 4 sheets passed in. However, if you look more closely at the findings, not every participant did pass in an average of 3 sheets. If this were the case the totals may have balanced themselves out. Instead some participants passed in as little as 1 sheet and some participants consistently passed in their sheet every week. The team that achieved the highest numbers of steps and goal points passed in all 20 of their sheets with other groups passing in as little as 14 sheets. In the findings it was noted that the step logging was inconvenient and also created some negative feeling and pressure around team responsibility. Team members felt guilty about not passing in their sheets, which highlights another barrier of time management. Due to the inconvenience of the recording and nagging from the team captain, it became another thing to do for these busy teachers. These barriers are an important finding in the consideration of future programs; administrative book keeping became necessary in the continuation of the program.

The necessity of bookkeeping was an interesting finding because teachers assign homework to their students with the expectation of it being handed in on time or consequence will incur. I was surprised that teachers could be so unreliable with their own “homework”.

The use of technology has been shown in similar studies and seems to lessen the burden of recording. An example is in the “Heart and Sole” program where they implemented a shared directory of Microsoft Access to record steps (Davis, 2005). Implementing a program like this in future research would take the hassle of collecting

and calculating the data off the shoulders of the coordinator. Programs such as "Route 66" or "Circle Canada" could also be adopted to strengthen the program and lessen this barrier. More research would be needed to determine exactly why the sheets were not passed in. It could have been a symptom of another barrier such as self consciousness surrounding physical activity, or fear, or simply time constraints that caused participants to forgo passing in their sheets (Flecther, Beherens, & Domina,2008).

Time Management

Time management was noted to be a barrier to the success of the "Step It Up" program. Time management being described as the difficultly the participants had in fitting the tasks of the program into their schedules. It emerged as a cluster with additional responsibilities arising as a theme. Teachers are known to very busy, prone to stress and long work hours. Teachers and administrators stated that at times this program became just another thing they "had to do". The novelty and the excitement of the intervention wore off and it began to seem more like a chore.

The barriers of physical activity have been studied since the late 80's, are well documented and time has consistently been implicated (Connell, Davies, Rosenberg & Fisher, 1988; Booth, Bauman, Owen, & Gore, 1997; Godin, Desharnais, Valois, Lepage, jobin et al., 1994; Lees, 2005; Cohen-Mansfield, Marx, & Guralnik, 2003). In terms of the worksite setting, time was the biggest barrier as well in worksite physical activity programs in the study done by Flecther, Beherens, and Domina (2008). Work schedules and work obligations make it difficult to give ones attention to a worksite initiative. Time management could have been the reason for decreased number of sheets passed in. If the task was made easier using technology, perhaps the recording, and program in general,

would run more smoothly. The systemic review also notes that more meaningful incentives, as well as full support from the management, may move the program up on the priority list of things to do. Thus participant may make more time for it in their workday (Harden, Peersman, Oliver, Mauthner & Oakley, 1999).

Goal Setting

Goal setting is a strategy that has been shown to assist in promoting physical activity and nutritional behaviour changes among adults (Shilts, Horowitz, & Townsend 2004). A goal is defined as "that which one wants to accomplish; it concerns a valued, future end state (Lee, Locke & Lathan, 1989)." As presented in chapter two, successful goal setting should following the steps and consider specificity, difficulty and proximity. A goal should be specific to behaviour, difficult yet attainable and proximal in time, not too far into the future. Feedback and rewards are two other components that can be added to Locke's three properties to promote behaviour change (Zegman & Baker 1983; Mento, Steele, & Karren,1987; Bandura; 1977; & Locke, Shaw, Sarri, & Lantham 1990).

In my study, participants set their own personal daily step goals. If they reached their goal on a given day they would receive a goal point which would then be added to their team's total goal points. Within the "Step It Up" program it was noted that participants were enjoying gaining points for their team by reaching their goal and did not want to increase their own personal goal as it may negatively affect their team's points. Another important finding was this flaw in the design of the program. If personal rewards were given for personal goal increases, participants may feel encouraged to increase their step goal. The goals were not difficult enough to fit with Locke's goal setting behaviour change model (Locke et al.,1990). This may have had a reverse motivational affect on

some of the participants who were consistently reaching their goals but were too competitive to risk losing points for their teams.

It is important to find ways to lessen the barriers of step logging, time management and goal setting. This program was meant to increase the teacher's wellness and health, however, stress around team responsibility of passing in sheets and feelings of additional responsible are not the intended outcome of the program. In terms of a process evaluation these parts of the program are not being received as intended and need to be modified. Recommendations have been created based on the participants comments as well to try to increase the noted benefits and decrease the barriers that were presented.

Recommendations for teachers and administrators

1. Technology is becoming more advanced everyday and many schools have access to this technology. The "Step It Up" program would benefit from adopting a portal or shared directory to record steps such as that used with the Dent Middle School (Davis, 2005).
2. Goal setting has been proven to be a motivator of physical activity if these goals are set properly. One-on-one time and guidance is required to set these personal goals. Adding an incentive for increasing one's goal may result in those goals being more effective and in turn create an increase of physical activity.
3. Harden, Peersman, Oliver, Mauthner and Oakley (1999) they have summarized their findings of surveying over 110 articles with some suggestions:
    a) There should be visible and enthusiastic support for, and involvement in, the intervention from top management;
    b) There should be involvement of employees at all organizational

levels in the planning, implementation and activities of the intervention;

c) A focus on a definable and modifiable risk factor, which constitutes a priority for the specific worker group, can make an intervention more acceptable to that group of workers and increase their participation

d) Interventions should be tailor-made to the characteristics and needs of the recipients.

These same recommendations can be applied to a physical activity intervention in a school setting.

4. It has been recommended that wellness committees are created in the worksite to be able to fit the needs of the target population. This would be the same for the school setting and the "Step It Up" program could be part of a more holistic staff wellness program. It would be a welcome added limb to any Comprehensive School Health Model as it is low cost and low maintenance. Every school is different and unique and it is important to meet the needs of the participants to have a successful program (Harden, Peersman, Oliver, Mauthner & Oakley, 1999). A needs assessment is a major predictor in the success of any physical activity worksite program.

Directions for further research

1. Evaluation is an integral part of any worksite wellness program (Harden, 1999, Young, 2008). Further studies could be done on the quantitative outcome of a program of this nature. Quantitative outcome measures could be done on the increased social support.
2. This study could be duplicated in a different setting, perhaps a public school, larger schools or districts and it could run for a longer duration of time to assess long term fidelity.
3. More research is needed to assess whether a wellness program in a school setting for teachers yields the return on investment as does a worksite wellness program (source about ROI, Chapman).
4. Due to the interconnectedness of the school setting it would be valuable to research the affects a teacher wellness program has on the students of the school.

Final Summary

This mixed methods study investigated the experience of the teachers and administrators in the "Step It Up" program to gain an understanding of the barriers and benefits of the program itself. There is little research in the area of health promotion in the school setting for teachers.

The inquiry highlights the elements of the program that participants enjoyed and found beneficial. According to participants the use of teams, and pedometers were found to enhance the program. These tools provided them with motivation, awareness, and social support.

The study also examines the barriers of the "Step It Up". The participants noted that step logging, the goal setting and the time management all hindered the success of the program. However, the study provided the participants an opportunity to provide recommendations they themselves felt would improve the program.

The purpose of this study was to examine barriers and benefits of the program as well as the feasibility of the program. It is the hope that this process evaluation can provide valuable information for perspective schools and groups of teachers looking to do a similar program. This study takes the reader through the benefits of such a program and the barriers and finishes with recommended changes for future programs. More research is needed to discover the pre and post intervention changes that a program of this nature would make on the teachers themselves and the students they teach.

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APPENDIX A

RECRUITMENT POSTER

TEACHERWELLNESSTEACHERWELLNESSTEACHERWELLNESS

A STUDY ABOUT TEACHER WELLNESS
WILL BEGIN IN June 2009
Evaluation of the "STEP IT UP" program

The Objectives of the Study are:

- **To determine the benefits/successes of the program**
- **To determine the barriers/challenges of the program**

If you are a teacher:

- **who participated in the "Step It Up" program**
- **who would be interested in sharing your thoughts on the program**
- **And you have 30 minutes of time available over the next three months**

Please call
Jill Payne, B.A., B. Ed.
M.A. Candidate
University of Victoria, School of Physical Education
(250) 507 2686 or by email: jillp@uvic.ca

TEACHERWELLNESSTEACHERWELLNESSTEACHERWELLNESS

APPENDIX B

LETTERS TO SCHOOL DIRECTOR

University of Victoria
School of Physical Education
P.O. Box 3015, Stn CSC
Victoria, B.C. V8S 3M1

March 30, 2009

Mr., Mrs. or Ms. *XXX*
XXX School
Address
Victoria, B.C. Postal Code

Dear *XXX:*

My name is Jill Payne and I am an M. A. candidate at the University of Victoria, teaching in the School of Physical Education. This year I am completing my research in the area of Teacher Wellness. My research study is entitled "A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers". The purpose of this research is to move beyond teacher stress literature and investigate what makes teachers well. The objective of this study is to assess the effectiveness of the middle school staff pedometer challenge in affecting positive change. The study will assess the factors of implementing the school-based exercise program.

As part of this study, I will be recruiting teachers so that I might set up conversational interviews designed to explore the benefits and barriers of the program as experienced by the participants. I will also be recruit participants to complete a short questionnaire and short survey. To assist me in the recruitment of teachers who might consider participating in this study, I am hoping that you would be willing to post the enclosed notice in your staff room.

Why might you consider supporting this research and posting the notice in your staff room? Current reports in Canada and the United States suggest that teacher stress and burnout cost billions of dollars annually. Research also shows that the number of teachers on short and long-term disability appears to be increasing. Many studies have been done to find out what makes teachers' stressed, however, what is missing in the literature is information on what makes teachers well. Teacher wellness planning may be an important part of teacher revitalization. Few interventions for teachers have been implemented in the schools and this feasibility study could lead to more effective ways to deal with the health issues.

If you would like to find out more about this study before posting the notice, you are welcome to contact me by email at jillp@uvic.ca or by telephone at XXXXX at the University of Victoria. You can also contact my co supervisors, Dr. Lara Lauzon by email at XXXXX or by telephone at XXXXX or Dr. P.J Naylor by email at XXXXX or by telephone at XXXXX. I look forward to sharing the results of this study with you next year.

Sincerely,
Jill Payne
University of Victoria, School of Physical Education

APPENDIX C

TELEPHONE SCRIPT FOR INFORMATIONAL INTERVIEW

TELEPHONE SCRIPT FOR RECRUITMENT FOR PARTICIPATION IN THE STUDY

Hello, my name is Jill Payne and I am a M.A. Candidate studying in the area of Teacher Wellness. I am returning your call regarding the Teacher Wellness study. Thank you for calling about the research I am doing.

Q: What is the purpose of this research?

A: The purpose of this research is to assess the effectiveness of the middle school staff pedometer challenge; a team-based worksite exercise intervention, in affecting positive change. This study will assess the factors of implementing the school-based exercise program.

Q: Why are you doing this research?

A: I have read so many research articles about teacher stress and what makes teachers stressed. I have also read many reports that continue to suggest that teacher stress and burnout costs billions of dollars each year through absenteeism, turnover and long and short-term disability leave. I have not been able to find much information on what makes teachers well. Many health promotion interventions have proven to be success in worksites around the world. I am investigating what happens when we apply these concepts to the school setting for teachers. Maybe a study for this nature can help to provide teachers with programs to help them stay well in the demanding profession.

Q: Who can participate in the study?

A: I am looking for middle school teachers, who have participated in the "Step It Up"

Q: What would I have to do?

A: I will be interviewing teachers – there will be an interview scheduled – this will probably take about 30 minutes, but they could be longer or shorter, depending on what we talk about and how much information you might want to share. The interviews will be taped and after the interviews I will transcribe them – type out exactly what we said – and then you will have an opportunity to clarify or change things if you would like. This might take you about an hour or two.

Then, after I have interviewed the teachers that are participating in the study, I will be sending out a short questionarie and brief survey to all participants to be self completed and return within two weeks. These two should not take longer than 30 minutes combined.

Q: When are you starting the interviews?

A: I hope to start scheduling the interviews in June and complete the interviews and have the questionnaire/survey completed and returned by the end of June.

Q: Where will the interviews take place?

A: I could come to your school, or I could meet you at your home. I also have an office at the University of Victoria and we could meet here. Anywhere you like.

Q: I don't know if I want my administrator to know I am participating in this study.

A: All the data I collect will be kept confidential. If you don't want anyone to know that you are participating in this study – that is fine. I won't be using your name in my thesis, or in any papers I might write for publication or at conferences or workshops I might present to teachers.

Q: What might I get out of this?

A: I think it will give teachers an opportunity to reflect on their experience in the program and how that impacts their personal well-being. I think it is also an opportunity to share information on how we can better meet the needs of teachers in future programs.

Q: Do I get paid for my participation?

A: No, sorry. I don't have a budget for participation – but you will receive all of the transcripts of your interviews and I will also send you copies of any papers that I write after the completion of my dissertation if you request them.

Q: What if I change my mind part way through?

A: That is not a problem. Your participation in this study is voluntary. You can choose to participate or not. You can even withdraw from the study part way through – No questions asked. You might also decide not to answer specific questions in the interview – that is fine too. If you do decide to withdraw – I will only use the information I might have gathered from – say – one interview with you – if you agree to that. Otherwise, I will destroy the information I got. I will be checking in with you throughout the study anyway – before each interview and before the focus group meeting – just to see if you are interested in completing the study. The questionnaire and survey will simply be taken out of the study and shreaded if a participant were to withdraw.

Q: Are you sure that no one will know that I am participating in your study?

A: As I mentioned – I will be using code names when I am gathering data. You could even provide me with one! The transcripts of the taped interviews will not include any personal information that someone could identify you with – and your name will not be used in my dissertation or any articles that I will be writing. I wouldn't use your name during a presentation or a workshop that I might present either.

All of the information I do gather will be locked in a filing cabinet in my office and no one will have access to it. When I have completed the dissertation, all of the information I have gathered will either be destroyed through the University of Victoria's confidential shredding

process or the tapes will be erased. We have a special department in our U.Vic Film Centre that helps us with that – for audio and video tapes we have what is called a bulk magnitizer – and it scrambles and erases all of the taped interviews.

Q: Can I think about this and get back to you?

A: Yes, - you can reach me at the University at XXXXX or – do you have email? My email is jillp@uvic.ca you can also call my supervisor – Dr.Lara Lauzon– his number is XXXXX. You can also email him XXXXX

There is one more person you can contact and that is the Associate Vice-President Research at the University at XXXXX

Q: I will call you back tomorrow.

A: Thanks. Talk to you then.

APPENDIX D

CONFIRMATION SHEET AND INTERVIEW SCHEDULE

Interview Schedule form. A. research – A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers.
Jill Payne, University of Victoria

Name	Contact Info	Interview Date	Location

APPENDIX E

CONFIRMATION LETTER – INTERVIEW PARTICIPANTS

University of Victoria
School of Physical Education
P.O. Box 3015, STN CSC
Victoria, B.C. V8W 3P1

March 30, 2009

Dear xxxxx

Thank you for agreeing to participate in my M.A. research study, *A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers.* I appreciate the time and energy you are committing to in this regard.

- Your interview has been scheduled for xxxxx (day) and xxxxx (time)
- We will be meeting at xxxxx (place)

Our interview will take about 30 minutes. I will remind you that I will be tape-recording our interview for transcription and analysis purposes. As I stated on the telephone, a code name will be used during our interview and no identifying data will be used either on the field note form or on the tape itself. Further details about the confidentiality of our interview process and your participation in the study can be found on the Consent to Participate Form attached to this letter. Please read this form, and then sign indicating that you are voluntarily participating in the study. There are two copies included in this letter. One will be for you to keep. The other will be for my records.

If you have any questions before our interview, please don't hesitate to call me at xxxxx or email me at xxxxx

I look forward to our conversation about the "Step It Up" program. See you soon.

Sincerely,

Jill Payne
M.A. Candidate
University of Victoria
School of Physical Educati

APPENDIX F

List of Appendices for M.A. Study entitled:

A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers.

To accompany letter to director and Application for Ethical Review of Human Research: University of Victoria

Applicant: Jill Payne, M.A. Graduate Student
University of Victoria

Recruitment Material	Appendix 1a
	Appendix 1b
	Appendix 1c
	Appendix 2
	Appendix 3
Interview Questions	Appendix 4
	Appendix 5
	Appendix 6
Consent Forms	Appendix 7a
	Appendix 7b
	Appendix 7c
Interview Schedule	Appendix 8
Surveys	Appendix 9a
	Appendix 9b
References	Appendix 10

APPENDIX G

INTERVIEW FIELD NOTE REPORTING FORM
INTERVIEW

Interview questions for the study entitled: A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers.

Exploratory Data Gathering –Interview - Participants

Discuss Purpose of Interview

- Review of informed consent
- Provide an orientation to the study
- Set climate for interview

1. Background Demographic Questions

- What grade are you teaching now? Have you taught other grades in the past?
- What subjects do you teach?
- How long have you been teaching? In this school? In other schools? In this district? In other districts?

2. What was your role in the "Step It Up" program?

3. Tell me about your experience in the program.
- What were the benefits and challenges?

4. What did you notice around the school environment during the program?

- Behavior changes?
- Social interaction?
- Have any of these stuck since the program ended?

5. What would you suggest be done differently if this program were to run again?

APPENDIX H

CONSENT FORM - TEACHERS

CONSENT FORM FOR PARTICIPATION IN THE STUDY TITLED TEACHER WELLNESS: AN INTERPRETIVE INQUIRY

Jill Payne,M.A. Graduate Student in the School of Physical Education at the University of Victoria is conducting a research study titled: A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers. This research is part of the requirements for a Masters in Arts and is being conducted under the supervision of Dr. Lara Lauzon and Dr. P.J Naylor. You may contact Jill Payne at 250 507 2686 or by email at jillp@uvic.ca. You may contact Dr. Lara Lauzon at XXXXX or by email at lllauzon@uvic.ca .

The purpose of this research is to assess the effectiveness of the middle school staff pedometer challenge; a team-based worksite exercise intervention, in affecting positive change. This study will assess the factors of implementing the school-based exercise program.

Research of this type is important because reports in Canada and the United States continue to suggest that teacher stress and burnout costs billions of dollars annually through absenteeism, turnover, and poor performance and while teacher stress is voluminous, very few studies have been done specifically related to the broader topic of teacher wellness. Many studies have been done to find out what makes teachers' stressed, however, what is missing in the literature is information on what makes teachers well. Teacher wellness planning may be an important part of teacher revitalization. Few interventions for teachers have been implemented in the schools and this feasibility study could lead to more effective ways to deal with the health issues.

You are invited to participate in this study because you are a teacher and you have participated in a unique intervention program at your school. If you agree to voluntarily participate in this research, your participation may include an audio-taped personal interviews and a short questionnaire/survey. The interviews are scheduled for 30 minutes each. You will also be asked to review the transcriptions of the taped interviews and provide me with changes or points of clarification should you feel this necessary. This could take up to an hour of your time.

There are no known risks to you by participating in this research; however, I would be glad to discuss any risks you might perceive. You can be assured that your participation in this study will be kept confidential and that the results of the study will not indicate specific names of teachers or the schools the teachers work at. In terms of protecting your anonymity, I will be assigning code names to which all data will be matched. Transcriptions of the audio-taped interviews will not include any personal identifying information and your name will not appear in the M. A. thesis, published articles, or material prepared for conference or workshop presentations. If you decide that you do not want your interview taped, written observation field notes will be used instead.

Your participation in this research is completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. You may also choose not to answer any questions you do not wish to answer during the interview process or the focus group meeting. If you do withdraw from the study, the data that has been collected will only be used if you agree to it being used. To make sure that you continue to consent to participate in this research, I will check in with you each time I schedule an interview or focus group meeting to see if you are still willing to continue with the research process.

Your confidentiality and the confidentiality of the data will be protected by securing it in separate files in a locked filing cabinet drawer in my private office in the School of Physical Education at the University of Victoria. No identifying data will be made available to anyone other than myself, the researcher and by signing this informed consent form we have entered into an agreement with each other whereby I will guarantee that your confidentiality will be protected. All written data will be shredded through confidential shredding at the University of Victoria. The tapes used in the interviews will be erased at Computer User Services using the bulk magnetizer.

In addition to use of this data to complete my M.A., I will use the data for articles for publication, class presentations to Teacher Preparation students, and for conferences and workshop presentations.

In addition to being able to contact myself and my supervisor, Dr.Lara Lauzon, at the above telephone numbers, you may verify ethical approval of this study, or raise any concerns you might have, by contacting the Associate Vice President Research at the University of Victoria at 250-721-7973.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researcher.

_____ _____

Participant Signature Date

A COPY OF THIS CONSENT WILL BE LEFT WITH YOU, AND A COPY WILL BE TAKEN BY THE RESEARCHER

APPENDIX I

FIELDNOTE REPORTING FORM – TEACHER'S SECOND INTERVIEW

Interview - A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers.

Code: _____ Date: _____

- To assess the accuracy of the transcription.
- To continue to explore more fully each participant's experience of Teacher Wellness.
- To determine if common themes about Teacher Wellness are beginning to emerge from the conversations we are having.

Questions

1) Background Demographic Questions

- What grade are you teaching now? Have you taught other grades in the past?
- What subjects do you teach?
- How long have you been teaching? In this school? In other schools? In this district? In other districts?

2) What was your role in the "Step It Up" program?

3) Tell me about your experience in the program.
- What were the benefits and challenges?

4) What did you notice around the school environment during the program?

- Behavior changes?
- Social interaction?
- Have any of these stuck since the program ended?

5) What would you suggest be done differently if this program were to run again?

APPENDIX J

THANK YOU LETTER TO TEACHERS TO ACCOMPANY TRANSCRIPTION

University of Victoria
School of Physical Education
P.O. Box 3015, STN CSC
Victoria, B.C. V8W 3P1

March 30, 2009

Dear XXXX:

This is a note of thanks for meeting with me to discuss our interview transcription. Your participation in this inquiry is very much appreciated. I value your input, your thoughts, and ideas about teacher wellness and what wellness means to you.

Enclosed is a transcription of our interview. Please read the transcription and determine if there are any other changes you would like to make. As I will be quoting from the transcriptions I want you to be comfortable with what you have said and the thoughts you have shared. You are welcome to make any changes you see fit on either the first or second transcription. Please indicate if there are specific parts of the transcriptions you would like to keep private and should not be included in either my dissertation or in any presentations I might give about Teacher Wellness. I will honor your decisions in this regard.

If there are changes you would like to make, we can set up another meeting or discuss the changes over the telephone. Once again, you can contact me at XXX-XXXX.

Analysis and write-up of the data collected will be done throughout this next year. You will receive, from me, an executive summary of these results through the mail. If you would like to read the dissertation, arrangements can be made for a copy to be sent to you. Thank you again for your participation in this inquiry.

All the best.

Jill Payne
M.A. Candidate
University of Victoria, School of Physical Education

APPENDIX K

QUESTIONNAIRE/SURVEY – TEACHERS

FOR THE STUDY ENTITLED: A Process Evaluation of "Step It Up": A team-based Physical Activity intervention for teachers that incorporates goal setting and pedometers.

The purpose of this questionnaire and survey is to determine the benefits and barriers of the program so that we may better met the needs of the teachers in future programs.

Other data being collected for this study will be generated from personal interviews with teachers This research is part of the requirements for a Masters in Arts and is being conducted by Jill Payne, B.A., B. Ed., University of Victoria, School of Physical Education, P.O. Box 3015, Victoria, B.C. V8W 3P1; (250)507 2686; email: jillp@uvic.ca and supervised by Dr. Lara Lauzon email: llauzon@uvic.ca.

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QUESTIONNARRIE

1) **What were the benefits/successes of the "Step It Up" program?**

2) **What were the barriers/challenges of the "Step It up" program?**

3) What would you change about the program it were to run again?

END OF SURVEY
PLEASE ENCLOSE COMPLETED SURVEY IN SELF-ADDRESSED, SELF-STAMPED ENVELOPE AND RETURN TO RESEARCHER. THANK YOU