

**TEACHER WELLNESS INITIATIVE: VIABILITY OF INCORPORATING EXERCISE INTO TEACHERS'
WORKDAY**

A Thesis Submitted to the
College of Graduate and Postdoctoral Studies
In Partial Fulfillment of the Requirements
For the Degree of Master of Education
In the Department of Educational Administration
University of Saskatchewan
Saskatoon

By

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Abstract

Teaching is a caring profession that can be physically, mentally, and emotionally draining, causing burnout and other stress-related ailments. The incorporation of physical exercise into the daily routine of teachers may promote overall wellness in the profession. This thesis explores the feasibility of incorporating several short bursts of exercise into schoolteachers' workdays. High-Intensity Interval Training (HIIT) principles inspired these short bursts of activity and was spread across the workday to achieve recommended weekly exercise levels. A qualitative case study investigated a particular instance of deliberate incorporation of HIIT-inspired exercise among participating teachers. We were particularly interested in understanding the extent to which the participants believed they derived benefits (e.g., agency and self-efficacy to cope with the complexities of working in contemporary schools) from this approach by spreading out HIIT-inspired exercises throughout the day that were like those accrued from the traditional HIIT workouts in other settings.

Data were collected from eight teachers who participated in an eight-week program where they exercised at least thirty minutes daily, in small chunks, three times per week. The study was a collective explanatory case study. Data collection included two group interviews, an anonymous survey at the project's midpoint, and observation field notes. Results showed that incorporating regular, short bursts of exercise into teachers' workday effectively promoted wellness, including reduced stress, better mood, and improved teacher self-efficacy. Results also suggested that teacher exercise initiatives should be implemented at the organizational level with support from school leaders. They should include strategies such as providing realistic exercise programs that are maintainable for the average person, promoting active living, as well as supporting and monitoring progress, and removing barriers by providing on-site workout spaces and showers. Since school organizations that implement exercise and wellness programs save money on less employee absenteeism, more creative solutions, such as encouraging flexible work schedules to facilitate participation in physical exercise to help teachers reach exercise targets could be implemented. Overall, this thesis provides more insight into the discussion

on teacher wellness and how regular exercise can positively impact teachers' overall health and performance at work.

Acknowledgements

Words cannot describe my appreciation for my supervisor, Scott Tunison, for his patience and invaluable feedback throughout this process. Since we began this process, we experienced a global pandemic together where we had to navigate new ways to conduct research, new ways to meet, new ways to navigate our lives outside of the university, and new job experiences. We both had to learn how to teach online for the first time. Since we began, he has helped me overcome many hurdles and always showed great patience and professional conduct. His hard work, dedication, and love of learning are truly inspiring! THANK YOU!

I want to thank my committee members, Michael Cottrell and Louise Humbert, for their recommendations and feedback after I defended my proposal. Their suggestions helped me find better ways to conduct my study. They also helped me find newer research on this topic, which is not well-studied yet.

I would also like to thank my staff at PEAK for helping me run a fitness studio during a global pandemic as I taught full-time and tried to write my thesis. Your kindness, understanding, and commitment to delivering the best client experience possible is incredible. I could not have asked for a better team.

I could not have done this without the support of my husband, Spencer. My school division experienced budget cuts, and my original plan of taking an educational leave of absence to complete my Master's was no longer available. Thank you for helping me navigate the stress of researching, writing, and having two ever-changing jobs. I could not have done it without you.

Dedication

I dedicate this thesis to every teacher and support staff who experiences stress at work and feels they do not have the time or tools to improve it. Research like this study can help create better ways of incorporating exercise and wellness strategies that are more realistic and much needed in schools.

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Chapter One: Introduction

Background to the Study

Regular exercise is widely believed to enhance one's chances for a long and healthy life. Studies have consistently demonstrated that adults who add 15 minutes of physical activity to their daily routines derive considerable physical health benefits. For lower mortality rates, Wen and colleagues (2011) projected an average of three additional years to the life expectancies of people who exercised moderately for 92 minutes per week. Adamu et al. (2006) similarly observed that those who are routinely active for 30 minutes per day throughout the week tend to experience a broad range of health benefits, including decreased risk of cardiovascular disease, increased exercise capacity, lower myocardial oxygen demand, lower blood pressure, improved glucose tolerance, better lipid profiles, enhanced fibrinolysis, improved endothelial function, and enhanced parasympathetic autonomic tone (Adamu et al., 2006).

Exercise has also helped individuals with their mental and emotional wellness. For example, regular exercise (20-30 minutes of cardiovascular exercise three to five times per week) appears to help people who suffer from diagnosed mental illnesses and diseases such as schizophrenia manage their symptoms (Callaghan, 2004). Furthermore, Callaghan (2004) found improved self-esteem and cognitive functioning and reduced anxiety, depression, and negative moods among regular exercisers compared to those who do not exercise regularly.

Unlike being physically active, a sedentary lifestyle can pose substantial health risks.

Endocrinologist James Levine stunned workers and employers everywhere by proclaiming in his 2014 manifesto, "Sitting is the new smoking" (Levine, 2014). In essence, Levine equated the health risks from extended physical inactivity to those from smoking. While Levine's findings are

not universally accepted, there appears to be nearly universal agreement that a sedentary lifestyle is a risk factor for many adverse health outcomes.

Adamu and colleagues (2006) found substantial evidence of cardiovascular disease, organ failure, and increased risk of obesity among people who exercise infrequently or not at all. Parry and Straker (2013) also associated sedentary behaviours with a broad spectrum of adverse health factors, even in otherwise healthy adults, and observed that excessive sedentary behaviours could cause employees to be unhealthy and unhappy. Furthermore, as stated by the Canadian and American Heart Associations (Michos, 2019), sedentary behaviours at work have increased by 83 percent since 1950.

To combat some negative factors associated with the long stretches of sedentary behaviours so common in today's workplaces, employers and employees have begun promoting scheduled exercise programs to improve physical and mental health and wellbeing (WHO, 2023). While this is a step in the right direction, there are still a few problems to address, the most prominent of which is that prolonged and uninterrupted sedentary time is a risk factor for poor health, even if some activity is interjected at times throughout the workday (Parry & Straker, 2013). In other words, adults should be encouraged to break up sedentary time at work, as well as follow the Canadian Society for Exercise Physiology 24-hour movement guidelines, which encourages adults to move at least 150 minutes per week, two to three hours per day, and limit sedentary behaviours to eight hours or less (Canadian Society for Exercise Physiology, 2023; Parry & Straker, 2013).

Over the last several years, High-Intensity Interval Training (HIIT), which pairs short bouts of high-energy exercise with low-effort rest intervals, has gained popularity among athletic

trainers and their clients. While HIIT seems like the latest fitness fad, it is not new. The basic idea for HIIT first appeared in the training regimen for a team of Olympic runners in 1912 (Billat, 2001). Through studying HIIT in various applications, exercise scientists have found that recreational exercisers and high-performance athletes benefit from the exercise strategy. For example, HIIT can boost athletic performance, increase overall health, and provide benefits similar to continuous-endurance training, such as going for a long run or bicycle ride, in less time (Tinsley, 2017; Zuhl & Kravitz, 2012). The benefits include but are not limited to lower body fat, heart rate, and blood pressure. HIIT also lowers blood sugar and improves insulin sensitivity (Tinsley, 2017). Since HIIT can happen in a shorter time and relatively short bursts, it may also be more maintainable for busy people like teachers. As such, HIIT may provide a valuable model to interject exercise into teachers' workdays.

Problem Statement

In schools, opportunities for physical movement during the workday are limited for many teachers. This is particularly true in this research because the study occurred shortly after the COVID-19 global pandemic, during which educators – including myself – worked remotely for at least part of the academic year. An informal straw poll of my teacher colleagues revealed that when their instructional activities moved to remote delivery, most sat in front of their computers for several hours a day, often without taking breaks to be active. Most of them noted that, even though they wore watches (e.g., Apple Watch, Fitbit, etc.) to monitor their activity and prompt them to be active, they moved far less during remote teaching periods than in a physical classroom. Perhaps this is not surprising considering that, when they are at school for in-person instruction, many engage in ancillary activities such as supervising the playground,

circulating the classroom, or walking to the photocopier and staffroom. In elementary schools, some of them may teach physical education during their workday. Nevertheless, even though this is likely not enough physical activity to be healthy overall, it is more than they were getting while teaching remotely.

Purpose of the Study

The purpose of this study was two-fold. First, it explored the feasibility of incorporating exercise into teachers' regular workdays in short bursts inspired by the principles of high-intensity interval training (HIIT) as a means of achieving recommended weekly physical activity guidelines. Second, it investigated the extent to which the participants believed they derived benefits (e.g., self-efficacy to cope with the complexities of working in contemporary schools, decrease stress, etc.) from this approach to breaking up the sedentary structure of their typical workdays. I was curious to ascertain whether teachers value participating in HIIT-inspired exercises throughout the day, what benefits they believed they experienced due to such activity, and whether a particular exercise intervention like mine could work in an elementary school.

Broadly, this research was guided by the following question: What do teachers believe educational leaders and/or organizations can do within the context of the school day and existing physical plants to enhance access to the wide range of health benefits of regular physical activity through fostering accessible and realistic exercise programs?

The following sub-questions guided this research to explore various aspects of the problem:

- Given the complexities associated with the intensification of teachers' duties in schools and the limitations presented by school buildings, to what extent is it possible to incorporate short bursts of HIIT-inspired exercise into a teacher's regular workday to

help them achieve recommended physical activity guidelines for overall health? What seems to be the most suitable arrangement of such bursts (i.e., frequency, duration, intensity, order, schedule, etc.)?

- What benefits do participating teachers derive from these short bursts of HIIT-inspired exercise incorporated into their workdays?
- How can school leaders maximize the potential and minimize the barriers to promoting physical activity to help incorporate realistic exercise programs for teachers?

Rationale/Significance

In the mid-1980s, researchers began looking beyond the health benefits of exercise as being isolated from participants' everyday lives and started investigating the links between exercise and productivity and wellbeing in the workforce (Frew & Bruning, 1988; Lazarus & Folkman, 1984). Researchers also began to investigate whether stress at work could be counteracted with exercise (Bogaert et al., 2014). Callaghan (2004) observed that those who add exercise to their self-care regimens tend to experience improvements in their overall mental health, especially concerning reductions in anxiety and improvements in cognitive functioning. Despite the substantial evidence touting the benefits of exercise, it is seldom used as an intervention and/or treatment to address career-induced health-related problems (Callaghan, 2004).

The World Health Organization (WHO) (2023), acknowledging the veracity of the research supporting the importance of exercise for improved overall health and recognizing the increasingly sedentary nature of workplaces, pointed out that workplaces and, by extension, employers can play an essential role in the overall health of individuals and entire communities

by promoting increased activity levels among adults who work for them (WHO, 2023). The WHO noted that employees are more likely to pursue regular exercise when their employers:

- Provide on-site gyms or other physical activity facilities,
- Allow flexible work time or breaks for participation in physical activity,
- Promote the use of stairs,
- Promote “active transport” (bicycling or walking to work), and
- Provide showers and/or changing facilities.

Moreover, strong leadership, support systems, and exercise programs are needed to improve employees’ self-efficacy to engage in physical activity. In addition to promoting physical activity at the worksite, providing facilities for exercise and encouraging flexibility increase the odds that employees will pursue physical activity during their workday (WHO, 2023). In other words, leaders need to promote exercise in the workplace to help employees reach the recommended levels of physical activity (WHO, 2023).

In the case of teachers, I wonder whether leaders could also play a role in fostering improved overall wellness by encouraging teachers to incorporate short bursts of exercise into their workdays and, possibly, even by helping teachers envision how to fit in such exercise. This study examined the efficacy of a particular strategy to do so.

Positionality

When I was 16 years old, I started working in a gym. I thrived in the gym community and liked how exercising made me feel. I felt more positive, motivated, and happier overall. Since then, I have used fitness to help me cope with real life. Exercise really helps my mental, physical, and emotional wellbeing, so much so that I decided to become a certified personal trainer in

2008 with CanFitPro to help others experience the benefits that I derived from exercise. Since 2008 I have received certifications with the National Strength and Fitness Council, STRONG Nation and Balanced Body Systems for personal training, group fitness, kettlebells, special populations, and pre- and post-partum specialist, and have taken many Kinesiology classes, including physical education for kids.

In 2013, at the age of 23, I was diagnosed with a rare blood cancer called Hodgkin's lymphoma. At the time, I was finishing the last term of my undergraduate degree in education. During chemotherapy, I was not able to exercise for many reasons. I suffered a lot of physical ailments, and I became very depressed. My doctor told me to force myself to go for short walks. When I started walking, my mood started to improve almost immediately. Eventually, I joined a group that exercised together two times per week. We performed strength and cardiovascular exercises together in a circuit-style workout regimen.

While I enjoyed how exercise made me feel physically, I started noticing an even more significant change to my mental health. The group atmosphere was very powerful and inspired me to work harder. The benefits I experienced compelled me to start my own fitness business in 2016, which eventually expanded into a bigger fitness studio in downtown Saskatoon called PEAK Climb + HIIT Studio, where I co-created our methodology and group fitness certifications with a Canadian certified exercise physiologist.

In my first few years of teaching, I noticed that many of my teacher colleagues often complained about being stressed, overworked, and mentally exhausted. Upon further investigation, I found out that they tended not to not make time in their days to exercise. In 2017, I offered to give a group of them a special rate to train with me after school two times per

week. Anecdotally, the participants said exercise made them really helped their mood, job satisfaction and improved their overall quality of life.

Recently, due to the global pandemic, many teachers also transitioned to teaching remotely, which has been very stressful and time consuming. According to Ansley et al. (2021), teachers' sense of self-efficacy has lowered due to the emotional exhaustion and depersonalization that they have experienced while teaching online due to the pandemic. They found, however, that after four weeks of participating in a program for coping with stress, teachers reported improvements in their self-efficacy and sense of personal accomplishment while also decreasing the emotional exhaustion associated with the sudden shift to online teaching and with the Pandemic itself. The findings of this study are especially important because, as we learn to live with COVID-19, some teachers have retained an ongoing hybrid role and expectation that they maintain readiness to "pivot" to fully online at any moment.

Despite that many jurisdictions mandated the closure of fitness facilities to reduce the spread of COVID-19, the demand for physical training remained strong. Many trainers, myself included, continued to train clients remotely. Anecdotally, many of my teacher clients who continued to work out with me remotely said that the physical training helped them to cope with the stress of online teaching. If these teachers felt better equipped to deal with stress when they exercised regularly while teaching remotely, I was curious whether they would feel more capable of dealing with daily tasks and experience improved mental and physical health in an in-person context as noted by Callaghan's (2004) study participants.

Before the study began, I transferred from a regular classroom to teaching physical education full-time. I now move every day during the workday, as well as before and after school. I have noticed that the stress I feel at work has reduced significantly.

HIIT is a way for busy people, like teachers, to get health benefits similar to those they would derive from traditional training, with fewer workouts and lower time commitment (Zuhl & Kravitz, 2012). Although there are pros and cons to any type of physical activity, offering HIIT training in as little as 30 minutes has motivated many of my clients to exercise even during busy times.

Definition of Terms

For the purposes of this study, I define the following key terms relevant to this study.

Exercise: Physical activity that is planned, structured, repetitive and purposive in the sense that improvement or maintenance of one or more components of physical fitness is an objective (Canadian Society for Exercise Physiology, 2023).

High-Intensity Interval Training: (HIIT) is characterized by brief, intermittent bursts of vigorous activity, interspersed by periods of low intensity recovery (Astorino, 2012). More recently, HIIT has been described as engaging in repeating cycles of reaching at least 80 percent of one's maximum heart rate for one to five minutes, with short periods of rest in between (Canadian Society for Exercise Physiology, 2021).

Job satisfaction: The attitudes that people have toward their work environment based on their experiences (Dutta & Sahney, 2016). Job satisfaction emerges in the literature in at least two ways. First as "happy in service" and second as "satisfied with their work." Happy in service is when the worker experiences positive emotional responses when completing their

work (Locke, 1978). Satisfied with their work is when workers have a sense of accomplishment in their daily tasks and experience growth satisfaction — they feel as though they are growing in their position or feel motivated to accomplish more (Locke, 1978). Teachers who enjoy their job tend to feel motivated, happy, and accomplished in their work.

Physical activity: Any bodily movement produced by skeletal muscles that results in energy expenditure and increases heart rate and breathing (CSEP, 2023)

Sedentary behaviour: Any waking behaviour characterized by an energy expenditure <1.5 metabolic equivalent of task (METs), while in a sitting, reclining, or lying posture (Canadian Society for Exercise Physiology, 2023).

Self-care: Any activity that involves taking deliberate action to take care of our emotional, mental, and physical health. Good self-care is said to improve mood and reduce anxiety, anger, frustration, and dissatisfaction (Michael, 2018).

Self-efficacy: How people perceive the control that they have over their abilities and skills needed to complete tasks (Schiefele & Schaffner, 2015). Teacher self-efficacy is when teachers feel confident that they have the skills needed to teach. This includes ability to handle daily tasks, motivate and engage students in learning, manage student behaviour, and feel free to express their opinions on important school matters (Bandura, 1998).

Stress: When the relationship between a person and their environment is perceived to be unbalanced and/or when the physical and psychological resources required to meet the demands of the situation seem excessive to the individual experiencing that situation (Lazarus & Folkman, 1984).

Delimitations

Researchers are still trying to understand what type of exercise is best, how often it should take place, and what duration is needed to reap the most significant benefits, both mentally and physically (Canadian Society for Exercise Physiology, 2023). Although there are many differing studies, it is thought that to enjoy the benefits of exercise, individuals should exercise with moderate intensity for at least 150 minutes per week (Canadian Society for Exercise Physiology, 2023).

This study was delimited to an investigation of the feasibility of a particular group of teacher colleagues incorporating short bursts of HIIT-inspired exercise during their school day. During this eight-week study, participants (i) collaborated with the researcher to design the exercise schedule that would work best for their busy schedule and (ii) implemented that schedule. An eight-week study using HIIT-inspired exercise “bites” was specifically chosen for this research, partly due to Wu and colleagues’ (2015) findings related to the improvements in the mental health of psychiatric patients after they participated in an eight-week HIIT program. Our exercise target was chosen based on Wu’s experience of the added benefits of HIIT after 90 minutes weekly, as well as the World Health Organization and the Public Health Agency of Canada’s recommendations of 150 mins of moderate-intensity or 75 minutes of vigorous exercise per week for adults (Canadian Society for Exercise Physiology, 2023; World Health Organization, 2023; Wu, 2015).

Participants in traditional HIIT workouts can see benefits in a few weeks with as little as 75 minutes of exercise per week (Ito, 2019). Considering that we were not explicitly monitoring participants’ heart rates, I targeted participants’ involvement in this study at 90 minutes per

week – falling in between the HIIT recommendations and moderate to vigorous physical activity guidelines. This approach allowed participants to spread out HIIT-inspired exercises during the day and approximated both exercise recommendations.

This research took place in one pK-8 school in a mid-sized Western Canadian city. All teachers working at this school were invited to participate. I hoped to have a large-enough cohort of participants to accommodate both a wide variety of pre-study fitness levels and teaching responsibilities. Ultimately, eight teachers chose to participate in the study.

Limitations

It must be acknowledged that many factors outside of this study's parameters contributed to individuals' perceived efficacy. I also recognize that my opinion regarding the value of exercise may have influenced how I interacted with participants and analyzed their perspectives. One strength of using an interview process is establishing rapport with participants; however, it is essential to understand that this rapport can also influence the data (Creswell, 2015). Face-to-face interviewing can help the researcher monitor non-verbal cues and clarify vague responses (Creswell, 2015; Maxwell, 2010). There are sometimes concerns of reliability and replicability, especially if only a single case study is conducted. Involving the participants can yield positive results and richer data, although it is important to consider that participants may not always be truthful (Creswell, 2015, Maxwell, 2010). The interpretation of the data may also vary based on researcher bias (Creswell, 2015). Findings may be biased because some participants may already participate in HIIT workouts and enjoy perceived benefits. Interviewer influence can be another limitation, which is why triangulation is necessary to manage potential biases (Creswell, 2015). Furthermore, participants could opt out

of the study at any time, which could have left the researcher scrambling to find replacements (Patton, 2002).

Assumptions

In the context of qualitative research – especially when participants self-report perspectives and activity, researchers must assume that the participants will be honest in their responses throughout the data collection process. At the same time, the participants in this study may have noted the researchers' passion for physical activity programs and allowed that knowledge to influence how they responded during the interviews. To minimize this, the researcher added an anonymous survey midway so the participants could express themselves freely.

Organization of the Thesis

The first chapter provides background on how exercise can be used to combat sedentary jobs and help individuals improve their emotional, physical, and emotional health. It also discusses how HIIT can be used as a quicker alternative to regular exercise routines, which is important for busy professions such as teaching. There is some background as to why I chose this study and why I thought it was significant to the profession – namely, to improve teacher efficacy and physical activity. Chapter one outlines definitions that will be important in the following chapters as well as limitations I, the researcher, may have experienced.

The second chapter provides readers with a background to studies that have previously examined how exercise helps to improve worker productivity and satisfaction. It specifically examined past and current research about workplace efficacy and motivation. This chapter also looked at past and current research on HIIT for health in general and examined if HIIT may be an

accessible and realistic way to maintain employee motivation and engagement in workplace-based exercise programming.

The third chapter describes the research design. It relays details about why this specific study was chosen to potentially offer a way for school leaders to provide accessible and realistic means of exercise to their teaching staff. Offering accessible exercise programs that teachers could realistically participate in with less time, could help improve teacher efficacy, motivation, health and decrease absenteeism.

The fourth chapter presents the data collected. It includes a description of the context of the study; data collection and analysis; codes, subthemes and the main themes that emerged from the data.

Chapter five provides a summary of the results. In addition, there is a reflection on the methods chosen, discussion on recommendations for future research, discussion on the feasibility of implementing a similar exercise program elsewhere, and a concluding statement.

Chapter Two: Review of the Literature

Introduction

Exercise is widely touted as a means to accrue many health benefits. For example, the Canadian Society for Physiology attributed overall wellbeing to exercise, observing that adults can complete daily tasks with greater ease when they exercise regularly (Canadian Society for Physiology, 2023). Exercise has also been widely shown to yield numerous cognitive physiological and psycho-social benefits. Mandolesi et al. (2018) observed that physical exercise yields “positive biological and psychological effects that affect the brain and the cognitive functioning and promote a condition of wellbeing” (p. 8). Sharma (2006) noted that those who exercised regularly reported improvements in mood and self-esteem, healthier sleep patterns, and enhanced capacity to cope with stress, especially during a global pandemic when exercise becomes a way to see others at a distance. Jindo et al. (2020) found that workplace exercise increased workplace engagement and worker productivity.

Although exercise purportedly accrues many health benefits, it is not always a welcome pastime. Certain types of exercise can be repetitive, halting progressive overload (continual increase in workload during training to increase muscle growth and strength) and contributing to reduced motivation due to boredom (Lakicevic et al., 2020). Different strategies may be employed to reduce boredom. Some research has shown that individuals who exercise for enjoyment rather than being motivated by external rewards are more likely to adhere to a specified exercise program (Deci & Ryan, 2008). When exercise programming offers new exercises of varying familiarity, participants may also experience increased enjoyment and interest. High-Intensity Interval Training (HIIT)—with its diversity of exercises and quick

transitions between movements—enhances individuals’ motivation to continue their exercise routines, leading to better long-term health (Lakicevic et al., 2020).

Certain professions, such as mental health professionals, educators, social workers, and medical practitioners are often considered to be among the “caring professions.” People in such professions are more prone to stress-induced health issues than those in other professions (Skovolt & Trotter-Mathison, 2011). Ironically, people in caring professions often fall short of taking care of themselves. Many people in caring professions report that it is difficult to care for themselves because they are exhausted from caring for others (Skovolt & Trotter-Mathison, 2011). If those in caring professions, such as teachers, lack time to take care of themselves, HIIT may be an accessible way for them to reduce stress and improve productivity at work (Skovolt & Trotter-Mathison, 2011).

This chapter provides the foundation for a study of the perceived impact of regular exercise during the workday among a group of educators reported herein. Specifically, it examines literature related to the importance of exercise for humans in general as well as for those in the “caring professions”, such as educators. This study aimed to determine the extent to which HIIT-inspired exercises can be incorporated into teachers’ regular workdays to create accessible and realistic physical activity programs by chunking it into reasonable amounts of time. If teachers received the same benefits from this program as regular HIIT programming, this may be a way for leaders to help introduce it into the workday – to achieve the World Health Organization’s goal of increasing physical activity and reducing sedentary behaviours in workplaces by 2030, and to benefit from the positive impacts that exercise can have on employees (2023).

The chapter is separated into six sections inspired by the key concepts that emerge from the literature relevant to this topic: (i) exercise promotion in workplaces; (ii) exercise in relation to job satisfaction and perceived productivity; (iii) exercise and stress reduction; (iv) exercise and self-efficacy; (v) teachers and exercise; and current (vi) teacher wellness initiatives. Many of these topics are closely related; therefore, there is some overlap across the sections.

Nevertheless, it is worthwhile to discuss these issues individually to explore their implications for the present research. Furthermore, prior to presenting the relevant literature, there is a brief rationale section that provides context to the literature.

Rationale

A common issue for many organizations is ensuring that employees maintain or improve productivity amidst increasingly complex responsibilities and, often, declining funding (Jindo et al., 2020). Therefore, studies of factors that encourage employees to be more productive benefit the employer (Jindo et al., 2020; Mandolesi et al., 2019). Many organizations, for example, want to know whether implementing specific “wellness” programs such as physical exercise programs, health promotions, and other health and wellness-related initiatives can yield benefits such as increased employee engagement and, at the same time, save employers money long-term (Jindo et al., 2020; Mandolesi et al., 2019). Concurrent with this issue, the World Health Organization aims to increase physical activity by 2030 and stated that organizations—including employers—need to step up and help increase it globally (2023).

It is without question that physical inactivity impacts the Canada’s economy. Many health risks are associated with sedentary behaviours which, in turn, puts a significant burden on Canada’s healthcare system. Katzmarzyk et al. (2000) attempted to calculate the relative risks

of physical inactivity on coronary artery disease, stroke, colon cancer, breast cancer, type 2 diabetes, and osteoporosis and associate those health outcomes with losses of economic productivity and overall burden on the healthcare system. Results from their study showed that the healthcare costs associated with chronic diseases that are directly linked to physical inactivity contributed to approximately \$2.1 billion of the total direct health care costs in Canada in 1999 alone (Katzmarzyk et al., 2000). They further found that a ten percent reduction of sedentary behaviours will save \$150 million annually across Canadian healthcare jurisdictions (Katzmarzyk et al., 2000).

Exercise in workplaces of various kinds has been studied to examine such issues as the relationship among exercise, self-efficacy, perceived job satisfaction, and productivity. For the purpose of this study, self-efficacy and perceived productivity for teachers included but is not limited to, being able to handle daily tasks, having less absenteeism, completing tasks more efficiently, and feeling capable of handling day-to-day work stress. Torres et al. (2020) recommended on-site workplace wellness programs after they studied the positive physical affects it had on employees in a 12-week wellness program. Employees were given an individualized exercise and wellness plan to follow based on their needs (Torres et al.,2020). All participants showed improved blood pressure, cardiovascular fitness, and muscle strength at the end of the study (Torres et al., 2020). It also decreased employee productivity loss and absenteeism (Torres et al., 2020).

High-intensity interval training (HIIT) is more likely to keep participants engaged, is easily accessible for those with busy schedules and has many health benefits that coincide with my training beliefs (Lakicevic et al., 2020). At the root of this study is an examination of whether a

modified HIIT model is a good strategy for leaders to use to help improve employee physical activity rates and, at the same time, to help teachers concerning job satisfaction, perceived productivity, stress reduction, and self-efficacy. Additionally, the study will examine whether this HIIT-inspired model will help teachers to gain other benefits that purportedly flow from regular exercise, such as more energy to complete daily tasks, lower absenteeism, and greater self-efficacy to manage day-to-day work stress. It was worthwhile to investigate the extent to which such effects hold true in educational contexts because of all the positive effects exercise had in some work settings.

Exercise at Work

Researchers such as Frew and Bruning (1988) believed that there is a correlation between exercise, productivity, and satisfaction at work. During their study, they had participants exercise 30-40 minutes for a minimum of four times per week. They concluded that all the participants experienced an increase in both job satisfaction and productivity at work (Frew & Bruning, 1988). Since then, other researchers have found similar results in their studies. In 2003, Wattles and Harris discovered that improving fitness levels in employees may positively influence productivity, job satisfaction, and absenteeism. They believed their research should encourage employers to add exercise programs within the workplace (Wattles & Harris, 2003). Wattles and Harris also believed that implementing exercise at work was crucial to employees participating in exercise programs. They claimed that since employees appear to have derived substantial work-related benefits from exercise, the costs associated with promoting exercise for the employer are justified over the long term (Wattles & Harris, 2003).

More recently, a study conducted by Bishe et al. (2019) investigated whether Pilates affected the job satisfaction of female employees at an electricity distribution company. In this study, twenty participants engaged in three 30-minute Pilates sessions per week, while another twenty participants did not receive any employer-sponsored exercise. The study used Minnesota's Job Satisfaction questionnaire with twenty-two questions related to job satisfaction, including the following categories: payment system; type of job; occupation interest; physical working conditions; leadership style; and organizational culture (Bische et al., 2019). Ten experts, comprised of university professors and researchers in sports management, concluded that the validity of the data collection was 89% (Bische et al., 2019). The researchers concluded that on-the-job exercise positively influenced the job satisfaction of female employees in this role at the Electricity Distribution Company — therefore, supporting the claim that physical activities in the workplace increase job-related capabilities and job satisfaction that relate to physical and mental health (Bische et al., 2019).

Jindo et al. (2020) conducted a similar study in Japan to see if work engagement—which they believe is associated with better employee mental health and productivity—improved with regular exercise. They investigated whether there was a relationship between workplace exercise, mental health, and worker productivity (Jindo et al., 2020). They collected data from annual health checkups and questionnaires at a Medical Center in Tokyo, Japan, from many different types of workers. Out of 1321 participants, they were divided into three groups based on exercise frequency. The participants who performed workplace exercise once, twice, or three or more times per week showed a higher level of work engagement than those who did not exercise (Jindo et al., 2020); however, none of the groups showed a significant difference with

psychological distress. Jindo et al. claimed that performing workplace exercise at least once or twice a week still showed a positive association with work engagement, especially amongst white-collar employees (2020).

The World Health Organization (2023), acknowledging the veracity of the research supporting the importance of exercise for improved overall health and recognizing the increasingly sedentary nature of workplaces, points out that workplaces and, by extension, employers can play an important role of increasing the activity levels of adults (WHO, 2023). Employees, for instance, are more likely to pursue regular exercise when their employers:

- Provide on-site gyms or other physical activity facilities,
- Allow flexible work time or breaks for participation in physical activity,
- Promote the use of stairs,
- Promote “active transport” (bicycling or walking to work), and
- Provide showers and/or changing facilities.

In addition to promoting physical activity at the worksite and providing facilities and workdays that increase the odds of employees pursuing physical activity during their workday, strong leadership, support systems, and programs are necessary to improve employees’ self-efficacy (WHO, 2023).

By adding exercise programs for teachers, it may help to create more productivity in the workplace, specifically by helping to build teacher efficacy and reduce stress which, in turn, will help teachers to feel more capable of managing daily tasks (Jindo et al., 2020; Wattles & Harris, 2003). It can also help schools meet the World Health Organization’s goal of increased physical activity by 2030 (World Health Organization, 2023), as all organizations need to be committed to

this goal. This chapter will also review workplace exercise programs and health promotion programs used in different contexts and chronicle the outcomes that emerged from them. Literature related to the connections between exercise in general and high-intensity interval training (HIIT), employee stress, and workplace self-efficacy will be discussed.

Job Satisfaction and Perceived Productivity

Over the last few decades, a massive volume of research has examined whether exercise has positive outcomes on job satisfaction and productivity (Jindo et al., 2020; Mandolesi et al., 2019; Wattles & Harris, 2003; WHO, 2008). At the core of these enquiries is the question of whether exercise is linked to job satisfaction and productivity and, if so, what are the implications for employers who might want to encourage employees to be more active in the workplace.

Generally, researchers suggest that job satisfaction and perceived productivity can be increased by providing employees with opportunities to exercise in the workplace. In 1981, for example, Shephard and colleagues examined the effects of employee fitness programs on work productivity and absenteeism (Shephard et al., 1981). For six months, they studied employees of two large companies. The participants from one company were provided a structured fitness program for three 30-minute sessions per week, while employees at the other company were not given a structured program. They found that the work fitness program had a small but positive influence on productivity and absenteeism (Shephard et al., 1981). Nevertheless, they reported their findings with some reservations because the participants knew they were under observation, and as such, the changes may have been due, at least in part, to the relatively small sample size and the “Hawthorne” effect.

In 1988, Frew and Bruning conducted a similar investigation. Frew and Bruning had been longtime exercisers and wondered whether exercise contributed to their productivity and job satisfaction. Extrapolating from their own experiences, they also wondered whether exercise helped other people to cope with work stress (Frew & Bruning, 1988). Participants in Frew and Bruning's study exercised 30-40 minutes at least four times per week. The researchers concluded that all participants increased both job satisfaction and productivity at work (Frew & Bruning, 1988). In light of their study, Frew and Bruning (1988) advocated for employer-sponsored fitness programs at work. Their rationale was that since employers would likely witness an increase in their employees' satisfaction at work, the expenditure was justifiable and, perhaps, prudent.

Other studies have shown that exercise can increase worker productivity and decrease absenteeism, thus indicating increased job satisfaction. For example, Wattles and Harris (2003) studied the relationship between exercise, perceived productivity, job satisfaction, and absenteeism among 143 employees at an anonymous company. They compared health-related fitness such as body composition, endurance, flexibility, and muscular strength to perceived productivity and job satisfaction, respectively (Wattles & Harris, 2003). Their findings concluded that increased fitness levels might positively influence workers' job satisfaction, productivity, and absenteeism (Wattles & Harris, 2003).

In 2002, 260 middle-aged women who engaged in physically demanding laundry work participated in a worksite exercise program to explore the extent to which exercise intervention might lead to reduced sick leave and increased perceived ability to complete the physical aspects of the job (Nurminen et al., 2002). Over fifteen months, the participants engaged in a

worksite exercise training program of 60-minute sessions held once per week under the guidance of a fitness professional. At month eight, the researchers found that worksite exercise affected perceived work ability positively, but sick leaves decreased only slightly (Nurminen et al., 2002).

Drannan (2016) hypothesized that exercise increases employee job performance. He wanted to ascertain whether the relationship between the two also contributed to better overall health and a “good” mood. He believed companies could save money by encouraging their workers to engage in physical activity (Drannan, 2016). In his study, 405 workers from a various industries and workplaces were surveyed. His findings suggested that engaging in physical exercise increased job performance. Participants who engaged in physical exercise also experienced good moods and increased job performance, which shows that business owners and managers could use exercise to decrease health care costs and for employee performance (Drannan, 2016). He concluded that this means that, with physical exercise, employees are more productive at work, experience better moods than those who do not, and feel healthier overall (Drannan, 2016). Higher productivity and better moods for school staff could also have other benefits, including better relationships with students, parents, and colleagues (Drannan, 2016).

In 2012, Gram et al. conducted a study exploring the extent to which particular exercise interventions known to increase aerobic capacity would lead to increased work ability, productivity, fewer workplace injuries, and reduced levels of sick leave among construction workers. As part of this study, 67 construction workers performed group training led by certified fitness instructors for 20 minutes a day, three days per week. No significant changes were found

in the variables of interest, including work ability, productivity, perceived physical exertion, workplace injuries, and sick leave (Gram et al., 2012). They concluded that the relatively small sample size may have influenced the findings. While that was likely a factor, the construction workers may not have been an ideal group to study, as they are already physically active throughout the workday.

Burton et al. (2005) also studied worksite fitness centre programs. They studied 5,379 employees in the financial sector to see if participating in workout programs at an on-site fitness centre would increase happiness at work because they believed happiness at work seemed to produce more efficient workers (Burton et al. 2005). Moods are most likely higher after endorphins are released through exercise. Endorphins also help relieve pain and stress, which could be the link to increased moods at work when employees exercise (Burton et al. 2005). Burton et al. (2005) determined that out of the 5,379 employees involved in the study, those who participated in planned on-site fitness centres had fewer short-term disability claims and reported more happiness and productivity at work.

In 2008, the World Health Organization (WHO) released an article stating that the worksite is an important place to promote and help individuals to maintain a healthy lifestyle. According to the World Health Organization, the health benefits of exercise are indisputable, but it may also be linked to economic benefits for employers (2008). Physical promotion and programs are highly encouraged as they may also reduce absenteeism, presenteeism, employee healthcare costs, and employee turnover (WHO, 2008). Based on their literature review, the World Health Organization concluded that health promotion programs that address physical activity and healthy diets effectively change behaviour over the long term (2008). The World

Health Organization (2008) stated that, although there is evidence of the positive relationship between physical activity and worker productivity, more studies need to be conducted to see if applying a specific program design at workplaces will help increase the physical activity levels of employees.

The following studies indicate that researchers believe there is a relationship between exercise and worker productivity (WHO, 2008; Jindo et al., 2020; Mandolesi et al., 2019; Wattles & Harris, 2003). They also believe that there may be a correlation between exercise and job satisfaction. Adding exercise programs for teachers may create more productivity in education (Jindo et al., 2020; Mandolesi et al., 2019; Wattles & Harris, 2003).

It is important to note that there is a gap in the literature when it comes to teachers and exercise studies specifically. There is also a gap in the literature as to how school organizations are helping employees increase physical activity. Since there are different ways to experience job satisfaction, it is essential to clarify what type of positive effect exercise has on teachers, if any. Teacher productivity and self-efficacy are also multifaceted, as teachers have a complex job filled with many duties. This study focused on the productivity teachers had completing tasks consistently, and the self-efficacy they experienced when handling their duties.

For example, Bische et al. (2019) observed improved job satisfaction in female employees when they exercised for only 90 minutes per week on-the-job. Similarly, Jindo et al. (2020) found that workplace exercise positively related to work engagement and productivity. Jindo et al. (2020) also discovered that employee participation in workplace exercise one, two, or three times per week improved engagement at work, especially among white-collar workers.

Exercise and Stress Management

Stress-related disorders are linked to dissatisfaction at work, causing higher absenteeism and lower productivity (Lever et al., 2017). Lever and colleagues (2017), for example, stressed the importance of job satisfaction for teacher motivation. Despite strong evidence that teachers experience high levels of work-related stress, “only 25.5% of schools offer stress management education to staff” (Lever et al., p. 6). Since teachers may be more vulnerable to work-related stress, it is important to consider ways to help manage and lower stress levels (Lever et al., 2017).

Teaching has been identified as a highly stressful occupation (Griffith et al., 2010). Teaching stress is when their negative emotions are associated with work, such as anger, anxiety, sadness, and frustration (Kyriacou, 2001). Many contributing factors can lead to stress as a teacher (Lever et al., 2017). Many stressors identified by teachers may be unavoidable, but all of them can be better supported with the right stress management techniques. Some teaching stressors included: trying to teach unmotivated students; time constraints and deadlines; student behaviour; workload; evaluations; poor working conditions; coping with change; conflicts with parents; conflicts with administration; conflicts with colleagues; self-esteem and work/life balance (Kyriacou, 2001). These are just a few examples, but it is important to note that stress is unique to each teacher. For instance, some teachers may find dealing with challenging students stressful, while others may not (Kyriacou, 2001). Stress management and coping techniques are fundamental to helping teachers deal with stress, rather than simply identifying and minimizing the stressors, as they may not be the same for each individual (Kyriacou, 2001).

Stressors can demotivate employees to be effective in their job positions (Jennet et al., 2003). Companies may decrease sick days, sick leave, and absenteeism by helping employees reduce stress. Stress management plans are something that employers need to consider from both a cost perspective as well as a mental health perspective. Exercise is said to improve both physical and mental health, which is why it is an important part of stress management plans (Kyriacou, 2001). All teachers experience stress at work, although, the cause of stress may differ (Jennet et al., 2003). Some teachers can cope with their stress, while others cannot and would benefit from more proactive measures (Kyriacou, 2001).

Burton et al. (2012) studied the relationship between graduate student supervisors' stress and the quality of student-supervisor interaction in Master of Business Administration programs at two universities. Their research focus was centered on whether graduate student supervisors who engaged in physical exercise would cope more effectively with stress and minimize harmful supervisory practices (e.g., putting students down in front of others or making them feel inadequate). They found a link between supervisor stress and graduate student perceptions of the nature of student-supervisor interactions (Burton et al. 2012). When supervisors engaged in moderate exercise levels, which they refer to as a healthy buffering mechanism (Burton et al. 2012), students perceived the quality of the student-supervisor interactions to be more productive and affirming rather than ineffective and abusive.

Edenfield and Blumenthal (2011) discussed the effects of exercise on physical and mental health. Although they believed that exercise positively affects mood and mental health, they were uncertain whether exercise helps individuals experience optimal stress reducing benefits, or if there are more contributing factors. They stated that larger-scale studies are

necessary for further clarification, and that future research should continue to address age, gender, personality, fitness levels, and medical history to understand the response between exercise, stress, and well-being (Edenfield & Blumenthal, 2011). Therefore, the creation of exercise programs for educators could positively affect both mood and mental health (Edenfield & Blumenthal, 2011). Body breaks, workplace fitness programs, access to gyms and fitness centres, and offering fitness incentives are just some ways to support teachers in this respect.

A recent study of a random sample of 1.2 million Americans 18 years or older examined the association between people who exercised and their mental health (Chekroud et al., 2018). The goal was to understand the influence exercise type, frequency, duration, and intensity had on mental health improvements. Participants who exercised regularly had 43.2% fewer days of self-reported poor mental health compared to those who did not exercise (Chekroud et al., 2018). While all exercise types reduced adverse mental health outcomes (Chekroud et al., 2018), the most significant difference was seen when individuals exercised forty-five minutes daily, three to five days weekly.

Jackson (2013) stated that exercise can be an effective way to help manage stress. She claimed that all types of exercise were beneficial to stress management, and that exercise should be part of stress management programs to help improve mental health. According to Jackson (2013), exercise and stress research has typically focused on whether aerobic exercise reduces stress, with the consistent findings being that people report feeling calmer after doing cardiorespiratory exercises such as running, climbing, and so on (Jackson, 2013).

Yoga studies have shown that calming the mind during movement helps people deal with stress better (Jackson, 2013). The data needs to be more comprehensive as to whether

strength exercises can also help stress management, or whether those who completed aerobic exercise and yoga also did resistance training that contributed to the decrease in perceived stress. As such, how exercise improves stress has yet to be determined. Some researchers believe that being physically active improves how the body handles stress, due to hormonal changes. There has also been research that indicates it is a break from our stressors (Jackson, 2013).

Breus and O'Connor (1998) studied whether their time-out hypothesis—that exercising gives us a mental break from our daily worries- worked. They studied college-aged women who reported studying as their biggest stressor. Breus and O'Connor (2018) did not allow these women to take a break from their stress during the exercise sessions. The participants studied, exercised, then studied while exercising for 40 minutes at a time over four days. When participants studied while exercising, they did not have the same calming effect as when they only exercised. Breus and O'Connor (1998) concluded that taking a break from daily stress to exercise is why participants reported feeling calmer after they exercised. If taking a time-out is one reason that exercise helps to reduce stress, it is necessary in education.

When exercise is added to stress management plans, employers save themselves a lot of money, by decreasing absenteeism (Wattles & Harris, 2003). Stress is sometimes a good thing, when managed correctly (Kyriacou, 2001). Stress management plans are an important part of building self-efficacy in the workplace. In education, we often have plans for students struggling with mental health and coping strategies; although, we do not seem to have the same plans for teachers. There may be plans in place once a teacher is depressed, missing work frequently, or lacking in performing job duties, but I have not witnessed many proactive measures in my

school division. This is something that could really benefit teachers, administrators, and support staff. If people are better able to deal with stress, they will be less likely to call in sick, act as bad supervisors, or make the workplace unbearable for others (Burton et al., 2012; Richlin, 2002).

Exercise Promotion for Workers

Exercise promotion in schools may be an important first step to help educators increase job satisfaction, self-efficacy, perceived productivity and improve agency (Jindo et al., 2020; Mandolesi et al., 2019). Employers could help teachers to build efficacy and help employees to manage daily tasks by promoting exercise (Jindo et al., 2020; Mandolesi et al., 2019). Schools can increase teacher efficacy by offering exercise promotion for workers. They can implement exercise programs in realistic ways by helping teachers break their workouts into manageable chunks so that they can reach the weekly exercise targets for overall health (Canadian Society for Exercise Physiology, 2023).

Exercise promotion appears to be a wise investment for school districts, especially if they want teachers to form healthy habits to be happier and more productive at work (Thøgersen-Ntoumania et al., 2005). Exercise promotion includes, but is not limited to, offering exercise programs at the workplace, adding benefits that include purchasing gym memberships and fitness equipment, offering discounted or free gym access, encouraging body breaks throughout the workday, having workweek exercise challenges, implementing flexible lunch breaks to use for workouts, and encouraging standing or pacing during meetings or teaching time.

Thøgersen-Ntoumania et al. (2005) examined the relationship between exercise participation and three components of mental well-being (physical, work, and global). They

studied 312 employees from an information technology company. After the study, they concluded that there were direct links between exercise to the physical self and enthusiasm at work. The study found links between the mental health of employees as well. They concluded that workplace fitness programs and exercise promotion were very beneficial for both the employees and the employers (Thøgersen-Ntoumania et al., 2005).

Lever et al. (2017) stated that the term “school mental health” often refers to the mental health and wellness of students, but they argued that the notion of “school mental health” needs to expand to include teachers and administrators. Lever et al. (2017) reported that, although there is strong evidence of widespread chronic work-related stress among Americans and that employers save money when they invest in employee mental health (by reducing absenteeism and increasing productivity), only 36% of respondents (from all fields) of an American Psychological Association annual review stated that their employer had stress management interventions (such as workplace exercise promotion initiatives) in place. Furthermore, only 25% of those in educational fields reported that such initiatives exist in their workplaces (Lever et al., 2017). When surveying teachers specifically, 89% of teachers said they felt enthusiastic when they first started teaching, compared to only 15% feeling the same way at the time of their study (Lever et al., 2017).

Lever et al. (2017) also identified two exemplary programs – located at Dallas Independent School District and Washoe County School District (in Nevada) – that showed both demonstrable positive outcomes for teachers and clear evidence of a significant return on the investment in terms of a substantial reduction in teacher absenteeism and better overall self-reported health outcomes.

In Dallas Independent School District, a 10-week health promotion program for teachers focused solely on exercise. Several thousand teachers and support staff participated. Data were collected on exercise levels, blood pressure reductions, job stress management and general well-being. Participants noticed significant improvements after 10 weeks in all objective measures. For example, one-quarter of participating teachers who had not exercised previously added exercise to their daily routines, and nearly half of the participants reported having made positive changes to their overall lifestyle that they expected to continue after the study was over. Moreover, those who started exercising regularly were absent from work for sickness less often than before the study, resulting in an average overall reduction of 1.25 days of absenteeism – representing a saving of \$149,578 for the district over the 10-week duration of the study (Lever et al., 2017). The school district also found that 68% of participants improved their diet, and 18% quit smoking.

Washoe County School District's approach to teacher wellness was also very successful. The Washoe County School District aimed to reduce healthcare costs and absenteeism among the 6,246 district employees and the study results were significant (Lever et al., 2017). Although no significant healthcare cost savings were directly calculated, absenteeism lowered significantly. Participating teachers missed three days or less than non-participants, saving the district \$15.60 for every dollar spent on the program (Lever et al., 2017).

Bruce (2010) studied the impact of exercise on the job satisfaction of law enforcement officers. He had 56 officers fill out a questionnaire about their current job satisfaction and exercise level. He discovered that the rate of physical activity by law enforcement officers was higher when compared to the general population in the United States. The survey results

suggested that law enforcement officers who exercised regularly were happier at work than those who did not. Bruce (2010) concluded there is a link between increased physical activity and job satisfaction, and lower amounts of sick leave. He believed that, from an administrator's perspective, it would be beneficial to encourage exercise among law enforcement officers, so that they get fulfillment from their jobs.

Low, Gramlich and Wright Engram (2007) studied the effects of a self-paced walking program on office workers. They discovered that, although the walking program did not impact worker productivity, it improved their overall health, including blood pressure, body weight, pulse rate, and body fat percentage. Their findings supported the implementation of exercise programs to benefit both the employee and employer. They believed that further research needs to be conducted to define scientific evidence that such programs can enhance productivity (Low et al., 2007). It would be interesting to find out if higher-intensity exercise would have influenced their productivity.

The benefits of physical exercise are well documented. How organizations can most effectively support overall wellness is not as clear, but it can start with introducing exercise programs in the workplace. If enhanced productivity, increased job satisfaction, morale, and mood are all benefits of exercise promotion; it is an investment that companies should be willing to make. Some of the reasons that people choose not to exercise are lack of time, money, and being tired after the workday. If the employer can alleviate these barriers, employees may be more willing to exercise and get positive results. Furthermore, exercise promotion and initiatives could decrease sick days and increase productivity, two big motivators for employers to save them money long-term.

Exercise and Efficacy

Exercise can improve self-efficacy (Wattles & Harris, 2003) for a wide variety of workers. Teacher efficacy is defined as when teachers believe in their ability to teach and guide their students to achieve success, like self-efficacy (The SHARE Team, 2020). For teachers, self-efficacy can include their ability to handle daily tasks, influence decisions and express opinions freely about important school matters, manage student behaviour, motivate, and engage students in learning, and have freedom to express their opinions on important school matters (Bandura, 1998).

Teachers are said to be more productive when they have a high level of self-efficacy (Hattie, 2012). In fact, according to Hattie (2012), teacher efficacy substantially impacts student achievement; therefore, school leaders should promote and maintain teacher efficacy. Therefore, prioritizing exercise in the workplace helps teachers to build efficacy and increase productivity (Hattie, 2012; Wattles & Harris, 2003).

In 1993, McAuley and colleagues investigated the extent to which self-efficacy could be improved or maintained with the help of exercise programs for 82 sedentary middle-aged adults (McAuley et al., 1993). The researchers concluded that, after nine months without a formal exercise program, the non-exercise participants demonstrated a decline in self-efficacy; however, the exercise participants had self-efficacy benefits after only five months of participation in the program. McAuley et al. (1993) concluded that exercise maintenance is important in the role of efficacy (McAuley et al., 1993). In this case, exercise maintenance could be the key to building teacher efficacy; teachers with exercise routines in place are more likely to believe in their teaching skills and abilities.

In 1997, McAuley again studied the role that exercise plays on self-efficacy (McAuley, Mihalko, & Bane). This study was different because the focus was on whether exercise programs contributed to having more attractive bodies, increased self-esteem, and self-efficacy in older adults. The participants were sedentary middle-aged adults, who participated in a 20-week exercise program. They wanted to know if physical fitness, body composition, self-efficacy, and exercise participation contributed to changes in physical self-worth. The findings were that exercise programming seemed to improve self-esteem and self-efficacy due to improved fitness levels and physical changes, but more research is needed with a larger sample size (McAuley et al., 1997). Nevertheless, improved self-esteem and self-efficacy could help teachers to be happier at work.

Exercise can increase self-efficacy because it helps people to feel more self-confident (Wattles & Harris, 2003). This greater sense of confidence contributes to self-efficacy, particularly in the workplace, which is essential to productivity and job satisfaction. The positive benefits of teachers adding exercise to their workplace seems quite substantial. Exercise maintenance could be the key to helping teachers experience improved levels of efficacy (Richlin, 2002).

Teacher Self-Care

Self-care is taking deliberate actions to help mental, physical, and emotional health (Michael, 2018). Self-care is not selfish; it is simply taking steps to care for oneself by doing things that will help physically, mentally, and emotionally. Some examples include getting enough sleep, exercising, using relaxation techniques, spending time with loved ones, laughing with friends, and so on.

Self-care is often discussed during staff meetings, professional development days, and amongst school staff. The problem is that even though it is discussed, teachers are not given strategies to help care for themselves (Allen, 2013). Being in the caring profession makes it crucial for teachers to know how to care for themselves as well as others. Proper self-care requires an action plan because it does not happen on its own. As such, teachers need to know how to implement self-care when they are swamped and feel they do not have “time” for themselves. Enhancing resiliency first starts with proper self-care (Allen, 2013.)

Teacher self-care can contribute to efficacy and job satisfaction. The problem is that teachers need to put as much effort into caring for themselves as they do for their students (Allen, 2013). Allen (2013) wrote a book about teacher self-care. After teaching for over thirty years, he noticed a trend: teachers are bad at taking care of themselves. He believed that this is because teachers can never meet the endless demands of the profession (Allen, 2013). From my own experience, I would say that self-care is often talked about in our profession but hardly ever acted upon or present in the school culture. Allen (2013) has many great recommendations as to how teachers can take steps to improve self-care.

Allen (2013) talked about how the teaching profession differs from other careers because teachers have constant interruptions throughout our workday and are constantly navigating a changing terrain. For example, a child can fall on the playground, meaning the teacher must make an unexpected call to a parent. Teachers’ to-do lists are often never-ending, making it feel like they have not accomplished much in a day. He discussed changing teachers’ to-do lists to put themselves first and rethinking expectations of themselves within a workday (Allen, 2013).

Regaining balance is another thing that teachers can do to help with their mental health. Balance includes taking time to exercise, among other self-care strategies. One reason is that teachers tend to put more value into things that take more effort. If teaching takes up most of their time, it is valued higher in their minds than self-care (Allen, 2013).

Teachers are more likely to leave their careers if they do not experience efficacy and job satisfaction (Lopez, 2018). In teacher self-care books, common self-care lists include exercise (Lopez, 2018). If teachers are happy, which includes experiencing efficacy, they are less likely to leave the profession (De Stercke, Goyette, & Robertson, 2015). I know from my own experience that I am not as productive or happy if I do not work out. Regular exercise can make teachers feel happier, and by extension, increase the likelihood of feeling happier at work (Richlin, 2002). Introducing exercise programs during the workday is one way to help increase teachers' exercise levels.

Teacher Wellness Initiatives

Teaching is stressful work. Devaki et al. (2019) found that 61 percent of the 60 teachers from the Dindigul School District in India asserted that their work is often, if not always, stressful in a school. The high stress level resulted in significantly more mental health issues among teachers than other professions (Devaki et al., 2019). According to Devaki (2019), failing to address teachers' mental and physical health affected their ability to support the needs of their students. In fact, promoting teacher wellness may lead to not only healthier teachers, but also to a more positive learning environment, improved school climate, enhanced school safety, and better student well-being (Devaki et al., 2019). Despite this critical information, effective teacher wellness initiatives need to be more prevalent (Devaki et al., 2019).

Given that the teaching profession has been widely associated with high stress levels, studies have begun to explore means of helping teachers manage or cope with the stress they experience at work. One avenue for investigation has been the extent to which physical exercise helps teachers cope with the effects of stress at work. For instance, Bogaert et al. (2014) studied the impact of general physical activity (PA) on the mental, physical, and work-related health of secondary teachers. Bogaert and colleagues (2014) stated that “because schoolteachers’ level of perceived health is low, they are an important target group for interventions aiming to improve overall health” (p. 8). An online survey was conducted to follow the effects of PA on the job satisfaction, occupational stress, and absenteeism of 1066 secondary teachers. A key finding was that “secondary school teachers have poorer perceived mental and physical health than a generally healthy population” (p. 8). The respondents pointed to the sedentary nature of teachers’ jobs as evidence that they were not as healthy as they could be. According to Bogaert et al., “high amounts of sitting time were related to poorer perceived health” (2014, p. 8). Furthermore, Bogaert et al. found that teachers who exercise more often during leisure time may be more resistant to mental and physical health problems as compared to their less active colleagues (2014). Despite the pivotal role that exercise plays in teachers’ perceived wellness, school districts tend not to sponsor specific teacher wellness initiatives (Bogaert, 2014).

In 2018, Lauzon investigated British Columbian teachers’ perceptions of wellness. Lauzon shared that the teachers described wellness as “taking care of the whole person, attempting to find balance, connecting with others, and being happy. Teachers supported their well-being through a variety of ways during their school day. For some, the connection with colleagues and students enhanced their wellbeing” (p. 166). Six themes emerged from this study, including

holistic, finding balance, sense of self, self-responsibility, job satisfaction, connection, and support. The following definitions explain how the teachers described each theme:

- **Holistic:** “Not just fitness. Integrated. As a whole. Holistic. All parts of effective living.” (p. 166)
- **Finding Balance:** I think about balance, an internal thing. It gives me a good framework to think about. That I can put things in perspective. I used to try to be everything to everybody. Now I know it’s okay that I ’m not at every school function.
- **Sense of Self:** It's believing in what you do and that it makes a difference. I think that’s why we ’re all hooked into it despite the stress. You have to believe that and it tides you over the rough spots.
- **Self-responsibility:** “I’m very big on responsibility and so you have to look at yourself and decide what's best for you. There are all sorts of wellness models. You have to make the choice. You can burn yourself out and look around and blame the system. You are a piece of the system. If we don’t look after ourselves it will impact the people we work with.”
- **Job Satisfaction:** “Being with the kids, that makes me well. I love the kids. Sharing. Talking and interacting with colleagues. Joy - working in this environment. That makes me well. Wellness to me is being happy and being centered to me is being happy. Teaching makes me happy. It is pretty inextricable.”
- **Connection and Support:** “The more we can do, as a staff to connect with and support each other, the better everyone will feel. To me it’s a little like the dark age

- us being so isolated. I'd like to see us move along a little faster. We meet every Friday in the back lunchroom. It's great. You can connect with other teachers. Support each other. Know there's something bigger than myself." (Lauzon, 2018, p. 197).

Furthermore, teacher wellness was reported to improve when teachers had supportive administrators, colleagues, and parents and support from the public, along with when they could celebrate teaching and when politics did not overshadow teaching (Lauzon, 2018). Lauzon noted the existence of multiple teacher wellness programs and services for B.C. teachers: family assistance programs; drug rehabilitation programs; professional development initiatives; mentoring programs; district wellness initiatives; and health programs (Lauzon, 2018). Teachers, however, tended either to be unaware of these programs or did not see them as wellness programs (Lauzon, 2018). Teachers and administrators reported that they believed teacher wellness was an important issue, but the British Columbia public school education system did not have a leader to help ensure this was a priority (Lauzon, 2018). Lauzon's findings suggested administrators need more support to ensure the success of Teacher Wellness programs (2018).

Lawrence (2016) investigated the impact of a worksite wellness program for teachers to establish whether teachers benefit from such programs in the same way as those in other careers. A New Jersey School District implemented the Health Promotion and Education Worksite Program (DHPE), which was chosen because it was highly awarded (Lawrence, 2016). Lawrence (2016) concluded from multiple surveys sent to the participants of this school district that emotional exhaustion might be tied to the levels of engagement in the wellness plan, although, whether it impacts teacher burnout is still unknown. The participants of this wellness

initiative reported lower levels of emotional exhaustion than the teachers who did not participate (Lawrence, 2016). Lawrence also discovered that female teachers demonstrated higher levels of emotional exhaustion than their male counterparts at work (Lawrence, 2016).

Current Exercise Promotion in Schools

Exercise is promoted for students in many school divisions. Schools often create goals to encourage students to exercise, teachers have frequent body breaks for students throughout the school day, and physical education classes are considered an essential part of the Saskatchewan curriculum. In 2003, Saskatchewan created an initiative called Saskatchewan In-motion, a program that partners with school divisions to encourage kids to be active, balance screen time, encourage them to walk to school, and promote healthy living (Saskatchewan In-Motion, 2020). Schools in Saskatoon could decide to become an “in-motion school” by promoting daily walks, body breaks, and encouraging other healthy behaviours. In-motion schools value the benefits of physical activity and prioritize daily movement. They are committed to reaching the goal of exercising a minimum of 30 minutes per day at school. They can achieve this by combining physical education, body breaks, recess, intramurals, and other events (Saskatchewan In-Motion, 2020). Many schools in Saskatchewan became in-motion schools. However, “in-motion schools” have not been promoted as much recently as in the past. It turns out that this is because the In-Motion initiative closed due to a lack of funding perpetuated by the closing of the casinos during the pandemic – the primary funding source for In-Motion initiatives. Unfortunately, the Government of Saskatchewan did not value the work enough to look for other ways to fund this program (Atter, H., 2021).

Some of Saskatchewan’s school districts have instituted programs encouraging students and their families to pursue physical activity. Saskatoon Public Schools, for example, created an initiative called “Move to Grow.” The *Move to Grow* campaign encourages families to walk their children to school, promotes exercise at school and home, provides exercise tips and ideas for students and their families, and offers school initiatives throughout the year (Saskatoon Public Schools website, 2023). Despite its importance, teacher wellbeing is often overlooked as part of proficient schools (Devaki et al., 2019). Even though off-site physical activity and exercise initiatives may be more difficult to engage employees in due to lack of time and energy, traffic, feeling uncomfortable or being intimidated by gyms, all adults must engage in physical activity for health (Canadian Society for Exercise Physiology, 2023).

The Saskatchewan Teachers Federation (STF) (2023) stated that “supporting the well-being of our members is paramount to better education in Saskatchewan” and that “providing the best education to students is only possible when teachers are at their best”. The federation provides mental health and wellness support, such as access to counselling, legal aid, financial guidance, and health coverage through a third-party company called ComPsych (STF, 2023). ComPsych provides help with work-life solutions such as child, elder, and pet care, health care, education, home improvement, relocation services, event planning, and shopping. In addition, they supply health and wellness coaching as well as exercise and nutrition counselling free of charge to STF members (2023).

Saskatchewan Teachers Federation members who require assistance can call ComPsych directly. ComPsych offers 30-minute consultations on how to implement exercise. After the first

30 minutes, the consultations drop to 15-minute sessions. ComPsych refused information as to which certifications their consultants possess (ComPsych Phone Call, January 2022).

As of 2023, the Saskatchewan Teachers' Health plan does not provide fitness-related expenses through STF. The Saskatoon Teacher Association (STA) brings forward any suggestions to change current health benefits with the STF. The STA President, John McGettigan, asked to meet with me about my resolution to include fitness benefits in 2018, which seemed promising. Another colleague recently brought forth a similar resolution. Although both resolutions were well received, the STA did not proceed with it for budgetary reasons.

Most school divisions, including the Saskatoon Public Schools Division (SPSD), have access to online staff portals that offer emotional, physical, and COVID wellbeing sections. Most portals have links to third-party supports such as ComPsych. They include links for articles on how to start exercising but I am not aware of specific teacher exercise or wellness initiatives (SPSD, 2023).

Barriers to Wellness in Schools

Despite the research supporting the benefits of teacher wellness, there are significant barriers for schools to implement effective wellness initiatives (Agron et al., 2010). Agron et al. (2010) investigated barriers to school wellness policies for teachers. Agron and colleagues studied over 2900 school board members from 1296 school districts around the United States (Agron et al., 2010). In this study, surveys were sent out to collect information on the physical activity policies, the acceptability of wellness tools, leaders and school wellness advocates, and the extent to which they collaborate. Agron et al. (2010) concluded that the school board members are interested in school wellness tools and training; however, the disparity between

the capability of creating wellness programs versus monitoring and evaluating their success.

They concluded that although there is an opportunity for school boards to provide training and resources, the strategies for implementation and monitoring still need to be improved (Agron et al., 2010).

Despite a growing body of evidence supporting the importance of employee health promotions, teachers face many obstacles in program delivery and participation (Chui et al., 2019). Chui and colleagues (2019) found that employee health promotion in elementary school settings can support students' health and academic success as well as school employees. School employees can serve as role models to positively influence students if they themselves lead healthy lifestyles. However, evidence suggested many school employees have poor physical and mental health (Chui et al., 2019). The researchers' objective was to determine which factors influence school employee health behaviours to inform the development of wellness initiatives (Chui et al., 2019). After surveying 62 school employees in the state of Massachusetts using surveys and interviews, they found that eight themes emerged. The following themes highlighted the importance of school organizational culture and barriers to implementation: high stress; desire to adopt healthy behaviours and sufficient health knowledge; strong social networks; a desire to be a role model; demanding job; lack of wellness culture and unhealthy food (Chui et al., 2019). Their findings suggested that school employees are receptive to wellness programming but need a top-down approach to support employee wellness that include a "wellness champion" at the school level (Chui et al., 2019).

High-Intensity Interval Training (HIIT)

To adequately explain why High-Intensity Interval Training (HIIT)-inspired exercises were chosen for this study, I must first explain what HIIT is, why it can be a good choice for busy people like teachers -with limited time and busy schedules- and how it helps people reach recommended exercise guidelines in a realistic and accessible way (Canadian Society for Exercise Physiology, 2021).

High-Intensity Interval Training (HIIT) is a type of exercise program consisting of repeated high-intensity exercises with short recovery periods (Alansare et al., 2018). Exercise physiologists and fitness professionals use HIIT to improve their clients' fitness level, health risk factors, and physical health (Alansare, et al., 2018). HIIT has been shown as a safe and effective way for healthy adults and those with chronic conditions, to reach their fitness goals while reaping the positive effects on fitness and health (Canadian Society for Exercise Physiology, 2021). HIIT is considered to be a more enjoyable fitness program when compared to moderate to vigorous continuous training due to variations in movement, fewer time constraints and the joy participants feel when they “push themselves” harder or lift heavier weights than they do with other workout regimes (Alansare et al., 2018; Canadian Society for Exercise Physiology, 2021; Ito, 2019).

The definition of HIIT varies across different studies (Canadian Society for Exercise Physiology, 2021; Ito, 2019). Ito (2019) stated that HIIT has been recognized as a more efficient workout method than moderate-intensity training. He stated that HIIT participants experience an increased in VO_{2peak} (aerobic capacity, expressed as peak oxygen consumption — a predictor of all-cause mortality) when compared to moderate-intensity training, which is recommended

in many health guidelines like the World Health Organization (WHO) that many provincial and national health guidelines follow. Most guidelines recommend 150 minutes of moderate activity per week, whereas HIIT participants can see benefits in as little as 75 minutes per week (Ito, 2019). For this reason, I decided to conduct my study for 90 minutes total.

HIIT can be used to improve participants' fitness levels and reduce health risk factors with less time than moderate to vigorous continuous training (Canadian Society for Exercise Physiology, 2021). Therefore, 80 minutes should be enough time to adequately determine if teachers have perceived efficacy and physical benefits (Alansare et al., 2018; Canadian Society for Exercise Physiology, 2018; 2021; Ito, 2019). HIIT is defined as short bursts of exercise followed by recovery, but there is much debate as to how long the ratio should be. One study argued that 60 seconds of high-intensity, followed by 60 seconds of rest, is more efficient than 30 seconds of high-intensity, followed by 120 seconds of rest (The Physiological Society, 2019). Other studies say that participants will see benefits if they are performing at 80 to 95 percent of their maximum heart rate for five seconds to eight minutes, followed by recovery at 40 to 50 percent of your maximum heart rate for similar or less time (Ito, 2019).

HIIT is highly adaptable because it can be performed using gym equipment, static cardio machines such as a treadmill, VersaClimber, or bodyweight exercises (Ito, 2019). I created workouts for participants of this study that incorporated a mixture of bodyweight, strength, and cardio exercises following various HIIT-inspired formats. The recovery time depended on fitness level, so timing varied amongst participants. Some examples of workout formats I used were TABATA, HIIT and various ratios of HIIT-style circuits, using both muscular strength and cardiovascular exercises that were accessible with or without equipment.

Summary

If HIIT-style exercise interspersed throughout a teacher's workday can decrease absenteeism, improve self-efficacy, decrease stress, and improve overall wellbeing, schools could incorporate it into the workday to improve the overall health of their employees. Leaders may be able to help implement ways for HIIT-inspired workouts to be done during the workday or shortly before or after school that does not take time away from other commitments. HIIT-inspired workouts are easily accessible, more interesting, take less time for busy professionals, and can be executed without equipment.

The literature reflects a lot of research on how exercise can reduce stress, improve productivity, and increase job satisfaction (Jindo et al., 2020; Mandolesi et al., 2018; Sharma, 2006). Due to the stress that occurs in the teaching profession, it would be helpful to find better ways for leaders to encourage and support employees to seek exercise as a stress-reducing technique as well as benefiting their overall wellness (Chui et al., 2019). To increase teacher wellness, school leaders could help implement ways to better support teacher wellness initiatives and create an initiative that is well-received and easy to monitor (Chui et al., 2019). A HIIT-style wellness initiative could be a quick and efficient program that teachers find more maintainable and enjoyable (Ito, 2019).

Most of the literature reiterates that exercise increases job satisfaction and productivity (Jindo et al., 2020; McAuley et al., 1993; McAuley et al., 1997; Richlin, 2002; Wattles & Harris, 2003). Increasing job satisfaction and productivity in school employees can save school divisions money long-term (Lever et al., 2017). Exercise initiatives may help teachers be more productive, prevent burnout, build efficacy, and reduce stress in the workplace (Bogaert et al., 2014). If this

is true, initiating exercise programs in schools that are easy to implement would be beneficial. I wanted to know if creating a HIIT-inspired exercise program for teachers' weekly routine would make exercise more maintainable and enjoyable for teachers (Alansare et al., 2018).

Administrators can support self-care strategies for teachers so that teachers take their wellness seriously and ensure that proactive steps are taken (Allen, 2013; Chui et al., 2019). Teacher wellness initiatives are often nonexistent or weak; therefore, implementing initiatives at work could help teachers reach exercise targets so that they are at lower risk of burnout or dissatisfaction at work (Allen, 2013; Chui et al., 2019). Exercise is linked to self-efficacy in workers, and as such, it should be a priority for organizations to help (Jindo et al., 2020; McAuley et al., 1993; McAuley et al., 1997; Richlin, 2002; Wattles & Harris, 2003). Self-efficacy helps teachers to become more resilient and cope with stress in the workplace (Allen, 2013). In a career where stress is commonplace, and burnout is prevalent, taking proactive measures such as encouraging exercise is something that could help to alleviate some of the significant stressors and help teachers to experience increased job satisfaction, resiliency, stress management skills, and belief in their abilities (Allen, 2013).

The research to support the positive overall health outcomes of teachers who participated in exercise or wellness initiatives was frequent throughout the data (Chui et al., 2019; Devaki et al., 2019; Drannan, 2016). Despite this data, effective teacher exercise and wellness programs are lacking (Chui et al., 2019; Devaki et al., 2019). Promoting exercise leads to healthier teachers, creates a positive learning environment, improves school climates, enhances student well-being, and saves divisions money (Chui et al., 2018; Lever et al., 2017). Evidence suggests many school employees have poor physical and mental health, which could

be improved with exercise (Chui et al., 2019). According to the research, teachers are open to exercise initiatives but need proper support to implement and maintain them (Chui et al., 2019).

Chapter Three: Research Design

This chapter provides an overview of the design of this qualitative case study. Specifically, it discusses the methodological considerations, methods of data collection and analysis, strategies to enhance reliability and trustworthiness, and critical ethical considerations.

Research Questions

To provide context to this chapter, the research questions are restated here. The purpose of this study was two-fold.

First, the study explored the feasibility of incorporating short bursts of physical activity into teachers' regular workdays inspired by the principles of high-intensity interval training (HIIT) to achieve recommended weekly exercise recommendations. Second, it investigated the extent to which the participants – in this case, elementary classroom teachers – believed that they derive benefits (e.g., self-efficacy to cope with the complexities of working in contemporary schools, decrease stress, etc.) from this approach to breaking up the sedentary structure of their typical workdays. In sum, I was curious to ascertain whether teachers valued participating in HIIT-inspired exercises throughout the day and what kinds of benefits they believed they experienced due to such activity.

Broadly, the following question guided this research: What do teachers believe educational leaders and/or organizations can do within the context of the school day and existing physical plants to enhance access to the wide range of health benefits of regular physical activity through fostering accessible and realistic exercise programs?

The following sub-questions guided this research to explore various aspects of the problem:

The following sub-questions enhanced this research to explore various aspects of the problem:

- Given the complexities associated with the intensification of teachers' duties in schools and the limitations presented by school buildings, to what extent is it possible to incorporate short bursts of HIIT-inspired exercise into a teacher's regular workday to help them achieve recommended physical activity guidelines for overall health? What seems to be the most suitable arrangement of such bursts (i.e., frequency, duration, intensity, order, schedule, etc.)?
- What benefits do participating teachers derive from these short bursts of HIIT-inspired exercise incorporated into their workdays?
- How can school leaders maximize the potential and minimize the barriers to promoting physical activity to help incorporate realistic exercise programs for teachers?

Research Design

In this section, there is a discussion of both the methodological underpinnings of this study as well as the method chosen to pursue answers to my research questions. I also provide an overview of the context of the study and those who participated in it. Furthermore, there is a description of the procedures related to this study, including the data collection and analysis strategies. Finally, I summarize my approach to ameliorate the ethical concerns associated with this study.

Methodology

My personal epistemology is aligned with constructivism. Constructivism is a term that refers to the idea that "learners construct knowledge for themselves – each learner individually

(and socially) constructs meaning as [they] learn” (Hein, 1991, p. 1). As a constructivist, I believe that people learn from their experiences. I also firmly believe that constructivist researchers, myself included, build their learning from previous knowledge. An understanding of my personal epistemology and how it impacts aspects of this study – particularly the methodology and methods employed in service of the research questions – is essential to understanding the data as well as the process of my data analysis.

My background as both a classroom teacher and a professional fitness trainer impacts my beliefs about the importance of exercise in individuals’ lives and specifically for teachers. Considering that this is a qualitative research project, I recognize that my unique background and experiences influence my understanding of the processes and outcomes of the research. I commit to account for them as potential biases as I describe and interpret my interactions with participants and with the information they share.

In the constructivist learning theory, learners are perceived to use their experience to learn (Hein, 1991). The constructivist approach also recognizes that learners need to do something to learn by actively participating, reading, or engaging in discussions (Hein, 1991). Learning is also considered a social activity, which is especially true in the fitness world. Most individuals’ progress with fitness goals comes from actively participating in the movement, practicing skills, and interacting with trainers, coaches, and peers.

This is also how I learn best. I learn best from hands-on experiences and interactions with others. As a constructivist, I believe that experiences and beliefs inform knowledge. Individuals have previous experience and knowledge that impacts how they learn. As an

elementary school teacher, I understand that students bring their own knowledge and experience into their learning, and higher education is similar.

Method

Given the objectives and context of the research proposed herein and my stance as a constructivist, a qualitative approach is best suited to this investigation. Stake (2010) argued that qualitative research is appropriate when the researcher's goal is to understand the study participants' experience in each situation. Furthermore, Stake (2010) asserted that qualitative research is a broad term describing many methods, which collect data in the form of interviews and observations. Qualitative research methods include grounded theory, interpretive description, journals, interviews, case studies, focus groups, and participant observation (Creswell, 2015, Okoko et al., 2023; Stake, 2010).

Qualitative research methods help researchers learn more about human lives and experiences (Merriam, 2014). Merriam (2014) also stated that the researcher is the primary source of data collection and analysis when using qualitative research methods. The researcher can use qualitative research to have a more complex understanding of their participants' viewpoints by collecting nonverbal and verbal cues and framing questions to help participants clarify meaning (Merriam, 2014). Yin (2017) argued that qualitative research is a way to conduct in-depth studies on topics of interest that may otherwise not undergo investigation.

Merriam (2014) stated that, when studying individuals' perceptions, a case study can help the researcher develop a thorough, holistic picture of experience that allows for deeper understanding. Creswell (2018) defined a case study as "an in-depth exploration of a bounded system (e.g., an activity, event, process, or individuals) based on extensive data collection" (p.

485). Creswell (2018) also recommended using a case study when the purpose is to understand one or more individuals and stressed that it is vital to collect qualitative data to gain a better understanding of participants' experiences.

Case studies are valuable when building new perspectives on a well-known and previously studied phenomenon (Ndame, 2023). Okoko et al. (2023) stated that "case study research is generally helpful in carrying out an in-depth study to understand the intricacies of a particular complex process or phenomenon" (p. 11).

Researchers have identified several different types of case study research. For example, Stake (2010) identified three kinds of case studies: intrinsic, instrumental, and collective. A researcher would employ an intrinsic case study when interested in the case itself. In contrast, an instrumental case study is better when the case is used to leverage an understanding of something else that may not be obvious to the observer. In contrast, a collective case study is used when a group of cases are studied.

While identifying three different case study types, Yin (2017) offered a slightly different typology. For Yin, an exploratory case study tests a research procedure, an explanatory case study explores cause-effect relationships; and a descriptive case study describes a particular phenomenon within its context. An explanatory case study is a good choice when the purpose is to compare causal links that are too complex for surveys alone (Yin, 2017). Furthermore, Yin (2017) suggested that researchers choose an explanatory case study if they wish to explain and understand how or why something occurs but have no control over it.

A case study can contain a single or multiple studies (Yin, 2017). It can also contain multiple cases within one study. The researcher needs to consider which would better

understand the phenomenon (Yin, 2017). While there are many opinions on which type of case study is the best choice, Stake (2010) explained that a collective case study helps the researcher understand the similarities and differences between cases and should be chosen when a study includes more than one case. A collective case study helps the researcher clarify findings and create a more convincing argument (Stake, 2010).

This study was a collective explanatory case study with eight participants. Yin (2017) explained that the design of a study is a logical pattern that connects the research questions to the data and conclusions. In the present study, a collective explanatory case study helped the researcher create a more thoughtful conclusion because they used multiple cases to obtain more information, as one person's experience may vary from another's (Stake, 2010). Using more than one qualitative case study helps verify theory at a deeper level (Stake, 2010). When more information is desired, such as how and why, a collective explanatory case study can help the researcher to have a more in-depth examination and explanation, especially if similar studies have already taken place (Neuman, 2010). A collective explanatory case study allows a constructivist researcher, who bases their research on previous knowledge and experiences, to collect and compare more information to help them form better conclusions (Yin, 2017).

Context of the Study

The following section describes the context of the study. First, I describe the school district and school. Then, I describe the participant group focusing on age; gender; current teaching position; years of experience; and participant activity level before and after the study.

School District

This study took place in the Prairie River School District, a public school district located in a mid-sized city in Western Canada. At the time of the study, approximately 25,000 students were attending more than 50 schools in the district. Public schools in this district are multi-cultural and multi-faith.

School

This study occurred at Belleview Community School; a K-8 school in the Prairie River School District. At the time of the study, the school had just under 500 students with approximately 30 teachers and support staff.

Study Participants

As previously mentioned, this study had eight participants. All the participants were teachers at Belleview Community School. During a staff meeting, I provided a brief overview of the study and invited all teachers at Belleview to participate in this study. They were asked to contact me to find out more details about the study and, if they were interested, to volunteer to participate in this study.

It is important to note that the participants had been teaching during a very stressful time. They were just emerging from widespread public-health emergency protocols associated with the global pandemic caused by the COVID-19 virus. Some teachers had to prepare lessons for online teaching, while others were teaching face-to-face, and a few were experiencing a combination of the two.

At the outset of the research, those interested in participating in this research attended an information session hosted by the researcher. During the session, I explained the intent of the project and the associated procedures. I assured them that, even though I was a fellow

teacher in the school, there was no expectation that they would participate and that I would not change my relationship with them, regardless of whether they chose to participate. I also reviewed the informed consent form approved by the University of Saskatchewan behavioural research ethics board with them.

In addition, the participants were encouraged to complete the Physical Activity Readiness Questionnaire (PAR-Q) to assess their physical activity readiness. The PAR-Q is a widely accepted pre-exercise screening tool. PAR-Q forms or ones like them are used in most fitness facilities to complement exercise programs, exercise testing procedures, and for liability considerations with programs and testing procedures. The PAR-Q survey was completed by participants prior to engaging in physical activity to encourage participants to reflect on their fitness level and to ensure that they were safe to participate in the study. Considering my training as a fitness consultant, I offered to review PAR-Q results with anyone interested in doing so.

Two (25%) of the participants were middle years teachers (Grades 5-8), two (25%) were teachers in the primary grades (K-Gr.4), and four (50%) were subject specialists (band, arts education, physical education, resource, etc.). (See Table 3.1 for a summary of participant demographics).

The total years in teaching professions varied among the eight participants sampled (see Table 3.2 for a summary). Five participants had 0-10 years of teaching experience (representing 62.5% of the participant cohort), two participants (25% of the participant cohort) had 11-20 years, and one participant had over 20 years of teaching experience (representing 12.5% of the participant cohort.)

Table 3.1

Study Participants: Organized by Current Teaching Position

Number of Participants	Teaching Position
N=4 (50%)	Subject Specialists
N=2 (25%)	Grades K-4
N=2 (25%)	Grades 5-8
Total: 8	

Table 3.2

Study Participants: Organized by Years of Teaching Experience

Number of Participants	Years of Teaching Experience
N=5 (62.5%)	0-10 years
N=2 (25%)	11-20 years
N=1 (12.5%)	21+ years
Total: 8	

The participants varied in age and gender (see Table 3.3). Six participants identified as female, and the remaining two identified as male. Of the 8 participants, two were 40 years of age or older (representing 25% of the participant cohort), two were between the ages of 30 and 40 (representing 25% of the participant cohort), with the remaining four participants being between 24-30 years of age (representing 50% of the participant cohort).

Table 3.3

Study Participants: Organized by Age

Number of Participants	Age
N=4 (50%)	24-30
N=2 (25%)	30-40
N=2 (25%)	40+
Total: 8	

Procedures

Ito (2019) stated that High-Intensity Interval Training (HIIT) has been recognized as an efficient alternative to traditional moderate-intensity exercise. HIIT participants often see an increase in VO_{2peak} (aerobic capacity, expressed as peak oxygen consumption — a predictor of all-cause mortality) when compared to moderate-intensity training (Ito, 2019). Most guidelines recommend 150 minutes of moderate activity per week, whereas HIIT participants can see benefits in as little as 75 minutes per week (Ito, 2019). Recently, the World Health Organization and the Canadian Society for Exercise Physiology (CSEP) updated their guidelines to 150-300 minutes of moderate-intensity or 75-150 minutes of vigorous-intensity per week, recommending that at least two days include strength-based movements (2023).

HIIT can improve participants' fitness levels and reduce health risk factors with less time than moderate to vigorous continuous training. When properly designed, 90 minutes per week should be enough time to adequately determine if participants perceived the expected physical benefits and improvements in self-efficacy and their ability to manage work-related stress (Alansare et al., 2018; Ito, 2019). For this reason, I decided to encourage participants to exercise at least 90 minutes per week, in case the intensity (i.e., heart rate) was lower than regular HIIT.

HIIT is defined as short bursts of high-intensity exercise followed by a quick recovery, but there is much debate regarding the ratio between training and recovery. One study argued that 60 seconds of high intensity, followed by 60 seconds of rest is more efficient than 30 seconds of high intensity, followed by 120 seconds of rest (The Physiological Society, 2019). In contrast, other studies indicate that participants will see benefits as long as they are performing at 80 to

95 percent of their maximum heart rate for five seconds to eight minutes, followed by recovery at 40 to 50 percent of their maximum heart rate for similar or less time (Ito, 2019). HIIT is also highly adaptable because it can be performed using gym equipment or static cardio machines such as a treadmill, VersaClimber, or bodyweight exercises (CSEP, 2021; Ito, 2019).

For this research, I created workout regimes for the participants that used a mixture of bodyweight, strength, and cardio exercises, following various HIIT-inspired formats. The teachers participated in this study for an eight-week period – incorporating at least 30 minutes of HIIT-inspired workouts during their workday at least three times per week for a minimum of 90 minutes per week.

Data Collection

The data were collected through group interviews, participant self-reporting in terms of an individual mid-point survey, and my observation field notes. Group interviews focused on how participants typically felt before and after a workout, their self-efficacy at work throughout the study, and if they thought the initiative could be feasible for future teachers to participate in.

I conducted a preliminary group interview to explain the study, take notes of their current efficacy, and perform a fitness test to see strength and prepare the workouts to challenge them adequately, without causing injury. During the initial session, I showed them basic exercises to add to their workday throughout the study. I sent example workouts to them throughout the study.

After four weeks, I sent them a midpoint survey to be completed anonymously. The questions on the survey asked about teacher efficacy and the validity of incorporating the program into their workday.

At the end of the study, we held a group interview again, concluding the process with the same questions asked at the beginning to gauge the physical and mental improvements. The two group interviews lasted approximately 60 minutes each and the midpoint survey took about 20 minutes to complete.

Group Interviews

The group interviews were conducted twice throughout the study – once at the beginning and once at the end of the eight-week study period. The two group interviews lasted approximately 60 minutes each. Group interviews have many benefits, including quickly gathering large amounts of data (Okoko et al., 2023). The ideas shared by participants helped generate more comments from other participants, which was very helpful (Okoko et al., 2023). Group interviews benefited this study, as I could interact with the participants, pick up on non-verbal cues, clarify questions, and collect multiple participant reactions simultaneously (Okoko et al., 2023).

Self-Reporting

Physical activity often uses self-report measures and direct observations (Martins et al., 2017). Self-reporting such as surveys is frequently used in exercise studies due to its simplicity for participants and low cost. Although my observations may see how participants felt during the workouts, I selected an anonymous survey as a self-report measure to get more insight into how participants felt in terms of efficacy throughout the eight weeks. The reliability and validity

of self-reported answers are challenging to gauge. However, it is far more reliable when recalling something in a short time, such as in this study (Dishman & Steinhardt, 1988).

Bandura (1997) designed a Teacher Self-Efficacy Scale to measure teachers' feelings at work. The questionnaire was designed to help gain a better understanding of difficulties for teachers. (Note: I did not include the section of the Self-efficacy Scale focused on "Efficacy to Enlist Parental and Community Involvement" as I do not think it applied to this study.) Consequently, participants were asked questions based on Bandura's scale at the beginning and end of the study.

Observation Notes

I took field notes throughout the study, including during the group interviews. The interviews began with open-ended questions about the participants' current level of knowledge in exercise, current exercise level, teaching experience, and current viewpoints on school leaders supporting general wellness. According to Allen (2017), field notes are written observations recorded during qualitative research where participants are being observed. This approach is often used in this type of research and is considered critical to understanding the phenomena under study (Allen, 2017). Field notes are commonly associated with recording in a journal, diary, or notes (Allen, 2017). Allen stated that they are best combined with interviews and focus groups, although, they may also be used on their own which is what I decided to do for my study. My field notes were a collection of reflections from my perspective while I observed the group or individuals participating in the study. As advised by Allen (2017), field notes helped me to become immersed in the environment while the study took place.

Data Analysis

Coding is breaking down the data into “smaller, more digestible parts” to try to make sense of a more extensive set of data (Okoko et al., 2023, p.77). One of the strengths of coding is to help build answers to questions in qualitative research, which helps to find meaning that may be overlooked in other settings (Okoko et al., 2023). Saldaña (2013) suggested that codes in qualitative data can be single words or short phrases assigned in summary in field notes. The data can be collected in interviews, observation field notes, open-ended surveys, and so on (Saldaña, 2013). The first portion of data, coded during the first coding cycle, can range from a word to an entire paragraph. The second coding cycle can link similar words (Saldaña, 2013).

Furthermore, Saldaña (2013) stated that patterns in coding can be characterized by similarity, difference, frequency, sequence, correspondence (they happen in relation to other activities), and causation (one appears to cause the other). Data analysis is the search for patterns in the data to find ideas about why those patterns exist (Saldaña, 2013). Coding helps to organize and group the data into categories, which helps determine which data look or feel alike so that you can find common themes or concepts and use that to create your theory (Saldaña, 2013).

I developed initial codes for my field notes, participant surveys, and interviews. Then, I revised these codes to summarize the emerging concepts and ensure that I found connections in the data over the eight weeks. Saldaña (2013) recommended finding the type of data analysis that best reflects the study. I believe a thematic analysis (TA) based on Braun and Clarke’s description was best for identifying, organizing, and offering insight into patterns of meaning (themes) for the data I collected from this study (Braun & Clarke, 2012). Throughout the data

analysis, I engaged in perception checks with my supervisor. I also engaged participants in a conversation about the codes to ensure they effectively captured their experiences.

Ethical Concerns

One of the top priorities throughout the study was maintaining the spirit and intent of the Tri-Council Policy Statement on ethical research (TCPS2). Of particular concern were full and informed consent, the principle of reciprocity, and ensuring the confidentiality of the participants. The University of Saskatchewan's Behavioural Research Ethics Board approved this study on ethical grounds. It was also reviewed and approved by the research committee of Prairie River School District.

Full and Informed Consent

Participants were provided with an informed consent form explaining some of the critical elements of the study and what they could expect if they chose to participate. All participants were reminded each time we gathered for a fitness challenge that they were free to withdraw at any time, which was clearly stated in the consent form. No participant withdrew during this study.

Confidentiality

I undertook to safeguard the confidentiality of the participants in the following ways. First, I asked that all participants respect the confidentiality of the other group members by not disclosing the contents of group interviews outside the group. Additionally, participants chose pseudonyms by which they wished to be referred in publications emerging from the study. Next, I used pseudonyms for the school and division to use in all publications.

During the study, my supervisor and I stored all electronic data jointly in a shared folder housed in university-authorized secure cloud-based storage. The hard copies of data were

stored in my home office in a locked filing cabinet in the short term. Once the study was completed, all data was transferred to my supervisor for long-term storage.

Summary

This chapter outlined the research method used to answer the research question. A qualitative case study was used to develop a theory on if it is feasible for leaders to encourage teachers to do HIIT-inspired exercises in short bursts throughout the workweek to help with efficacy, among other benefits.

First, it explored the feasibility of schools incorporating several short bursts of physical activity for teachers, inspired by the principles of high-intensity interval training (HIIT) spread across their regular workday as a means of achieving recommended daily exercise levels. Second, it investigated the extent to which the participants believed they derived benefits (e.g., agency and self-efficacy to cope with the complexities of working in contemporary schools) from this approach to spreading out HIIT-inspired exercises through the day that are similar to those that are accrued from the traditional HIIT approaches in other settings.

Chapter Four: Presentation of the Data

Introduction

This chapter presents the data from this study on the outcomes of incorporating exercise into teachers' workdays. The purpose of this study was two-fold. First, it explored the feasibility of incorporating short bursts of physical activity into teachers' regular workdays inspired by the principles of high-intensity interval training (HIIT) to achieve recommended daily exercise levels. Second, it investigated the extent to which the participants – in this case, elementary classroom

teachers – believed that they derive benefits (e.g., self-efficacy to cope with the complexities of working in contemporary schools, decrease stress, etc.) from this approach to breaking up the sedentary structure of their typical workdays. In sum, I am curious to ascertain whether teachers value participating in HIIT-inspired exercises throughout the day and what kinds of benefits they believe they experience as a result of such activity.

Broadly, this research was guided by the following question: What do teachers believe educational leaders and/or organizations can do within the context of the school day and existing physical plants to enhance access to the wide range of health benefits of regular physical activity through fostering accessible and realistic exercise programs?

The following sub-questions guided this research for the purposes of exploring various aspects of the problem:

- Given the complexities associated with the intensification of teachers' duties in schools and the limitations presented by school buildings, to what extent is it possible to incorporate short bursts of HIIT-inspired exercise into a teacher's regular workday to help them achieve recommended physical activity guidelines for overall health? What seems to be the most suitable arrangement of such bursts (i.e., frequency, duration, intensity, order, schedule, etc.)?
- What benefits do participating teachers derive from these short bursts of HIIT-inspired exercise incorporated into their workdays?
- How can school leaders maximize the potential and minimize the barriers to promoting physical activity to help incorporate realistic exercise programs for teachers?

This chapter presents the data collected. It is organized according to the following headings: (i) context of the study; (ii) data collection and analysis; (iii) themes and subthemes; and (iv) the main themes emerging from the data.

Data Collection and Analysis

The following section will review the data collection and analysis for this study, including the subthemes and themes that emerged.

Data Collection Overview

As reported in chapter three, data collection activities included two group interviews (one at the start and one at the end), an individual anonymous survey at the midpoint of the project, and my observation field notes.

Group interviews focused on how participants typically felt before the workout versus after and their self-efficacy at work. Both group interviews lasted approximately 60 minutes. In addition to the “formal data collection meetings,” I hosted a preliminary group meeting to explain the research activities and help potential participants perform a fitness test. The purpose of the initial meeting was two-fold: (i) to assist potential participants in identifying their fitness level at the project’s outset and (ii) to give me a sense of their fitness level to help me prepare the workouts to challenge them adequately without causing injury. I also showed them a few basic exercises to add to their routines during this meeting.

After four weeks (at about the mid-point of the 8-week study), I sent participants an online survey they completed anonymously.

At the end of the study, we held a second group interview. During this meeting, we discussed the same questions explored during the first group interview to gauge physical and

mental improvements. We also explored participants' thoughts on the feasibility of implementing wellness initiatives in schools and their current beliefs on the links between teacher wellness and daily exercise.

Data Analysis

As reported in chapter three, codes in qualitative data can be single words or short phrases assigned in a summary (Saldaña, 2013). The patterns in coding were characterized by similarity, difference, frequency, sequence, correspondence (they happen in relation to other activities), and causation (one appears to cause the other). I then classified the coding data to help determine which elements of the data looked or felt alike, so that I could find common themes or concepts and used those common elements to create my theory.

I developed initial codes for my field notes, participant surveys, and interviews. Then, I revised these codes to summarize emerging concepts and ensure I recognized connections in the data found throughout the eight weeks. I also engaged participants in conversation about the codes to ensure they effectively capture their experiences.

Themes and Subthemes

Group interviews were recorded and transcribed. I transcribed my observation notes as well. After the interviews, I listened to the recordings multiple times and typed out participants' answers to the group interview questions. I then went through my notes and the interview transcripts to find common words and short phrases. Going through the interview recordings, survey results, and observation notes multiple times aided my comparative analysis techniques.

This process helped me consistently emphasize key points during the coding. Manual coding identified 12 subthemes as shown in the table below based on their frequency in the

data. Using Braun’s thematic analysis process, I defined three major themes: barriers, derived benefits, and the viability of program implementation (Braun et al., 2012) – each with several subthemes.

The subthemes I described under barriers included lack of support, lack of time, lack of leadership awareness and readiness to facilitate, and facility issues. The subthemes I put under derived benefits had mental health improvement, teacher efficacy improvement, stress management, and mood enhancement. Lastly, I put the subthemes administrator support, exercise promotion, accountability, frequency, time, and intensity under program implementation. In the thematic analysis, I searched for similarities and differences in the codes (see Table 4.1).

Table 4.1
Data themes and subthemes

Themes	Subthemes
Barriers	Lack of Support
	Lack of Time
	Lack of Leadership Awareness and Readiness to Facilitate
	Facility Issues
Derived Benefits	Mental Health Improvement
	Teacher Efficacy Improvement
	Stress Management
	Mood Enhancement
Viability of Program Implementation	Administrator Support
	Exercise Promotion
	Accountability
	Frequency, Duration, and Intensity

Findings

The data analysis resulted in twelve subthemes organized according to three major themes. For the purpose of this document, the twelve subthemes identified from the data are

reported according to three major themes: (i) barriers to incorporating exercise into teachers' workday; (ii) derived benefits of incorporating exercise into teachers' workday; and (iii) the factors related to the viability of program implementation. While not strictly a subtheme, this study also revealed essential changes in participants' physical activity levels. The discussion of findings from this study opens with these data to contextualize the results overall.

Participant Exercise Levels and Schedules

Participants' exercise levels varied at the outset of the project. Before the study, five participants (62.5%) reported exercising less than the 150 minutes per week recommended by the Canadian Society for Exercise Physiology (CSEP, 2023). Three participants (37.5%) reported participating in at least 150 minutes per week of moderate to vigorous intensity with at least two days of muscle-strengthening activities (see Table 4.2 a summary of these data).

Table 4.2
Study Participants: Exercise Level Before the Study

<i>Number of Participants</i>	<i>Exercise Level (CSEP Recommendations of 150 mins/week)</i>
N=5 (62.5%)	Infrequent/Less Than Recommended
N=3 (37.5%)	Frequent/Recommended Amount
Total: 8	

By the end of the study, three (37.5%) participants who reported infrequent exercise at the start of the study reported adding more frequent or higher-intensity workouts into their daily routine (Table 4.3). In other words, more than half of those who exercised infrequently before the study were on their way to better health and wellness outcomes due to the increase in their regular physical activity that they experienced through this study.

Table 4.3
Study Participants: Level Exercise Level After the Study

<i>Number of Participants</i>	<i>Exercise Level (CSEP Recommendations of 150 mins/week)</i>
N=2 (25%)	Infrequent/Less Than Recommended
N=6 (75%)	Frequent/Recommended Amount
Total: 8	

While the exercise had to take place during the workday, but the participant teachers could choose how they wanted to divide their time up throughout the workday. For example, one participant divided their exercise into three 10-minute chunks throughout the workday. During the sessions, the participants could work out in a small group, by themselves, or with students. I sent example workouts throughout the study at the beginning of each week with options for the teachers to implement that or their own workout. I helped the teachers structure their workouts to best suit their schedules (Figure 3.1). The study was conducted for eight weeks to allow adequate time to conduct group interviews, surveys and collect data.

The figure below describes how the participants incorporated exercise into their workday. Kali decided it was best to try to do 15 minutes per day, twice daily, three times per week. There is an extra supervisor at recess supervision, so she engaged students in the exercises with her at recess when she was outside with them. Demi and Kayla decided to use each other for accountability. Throughout the study, they worked out together for 15 minutes twice daily, three days per week. Four teachers chose to be more flexible. Days they were busier, they would chunk their exercise into ten minutes, three times per day, rather than fifteen minutes. Depending on their schedules, they did this in partners, small groups, or with students. David incorporated his exercise into 10-minute chunks three times daily, three days weekly with students.

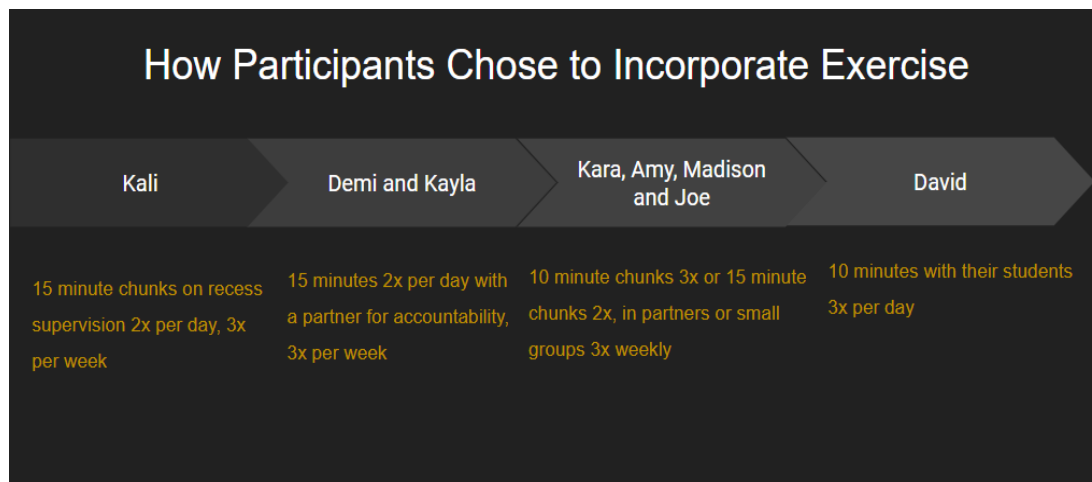


Figure 3.1 – How Participants Chose to Incorporate Exercise into their workdays

Barriers

The main barriers that emerged from the data included: lack of support, lack of time, lack of leadership knowledge and readiness to facilitate, and facility issues.

Lack of Support

Participants shared how the schools they taught at throughout their careers encourage wellness but do not offer ways of doing so at work. Some participants suggested that school leaders could support them by providing opportunities to exercise individually or as an entire school or by encouraging team-building activities for general wellness. Kali, for example, offered the following observation about using the staff meeting time to facilitate exercise together:

It would be encouraging to see some staff meeting time used to help teachers' mental health or wellness as our morale could use a bit of a boost. I understand that some staff meetings have a purpose, but maybe we could allocate some time to team building by playing a rec sport together or taking care of our general wellness in some way. (Kali)

While all participants expressed a lack of support for their wellness from school leaders, Kayla did not believe that was a school-based leader's job:

[School leaders] have so much on their plates so I don't expect them to help me with my wellness, but it would be nice to be given the opportunity to do so with my students. I often feel like I am questioned if I take my class for a walk or can't because I have too many students to do so in primary safely.

My field notes taken during the group interviews clarified that the participants felt that general teacher wellness is talked about with emails from their division and the odd time it is mentioned. Still, at current and previous schools, they do not feel as though it is a priority. Although participants understood that school leaders might need more time to prioritize implementing, monitoring and supporting a teacher exercise or wellness program, they thought it was important that the school divisions find ways to do so for employee health, stress reduction and efficacy.

Lack of Time

Two participants shared that they were feeling pressure to improve academics and did not have time in their busy schedules to think about their students' wellness, let alone their own. One participant talked about how opportunities to exercise during the day would help them:

I don't feel like I have time to focus on my wellness because I am too busy looking out for my students. I wish I had more time to care for myself outside of school. If we had ways of adding it into our workday, I would participate. (Madison)

Other participants mentioned that they felt very busy at school:

I'm so busy that I can barely eat lunch or go to the bathroom. It feels like a triage system where you never actually get anything done. (Survey respondent)

Most participants mentioned stress and fatigue symptoms and were unsure how to support their wellness. One example of this line of thinking is shared by Amy below:

I enjoy my teaching position, but it's a lot. There are so many things to do in a day, and many small annoyances pile up. I'm lucky to have a few coworkers to chat with about everything. I would love to be half-time, then I think it would be more manageable. I'm struggling to find balance between my job, my family, and my wellness.

After the study, Amy felt motivated to continue to benefit from what they experienced. She joined a group fitness class that meets once per week and started prioritizing at least one additional workout at home every week. This signified the importance of introducing realistic ways teachers could take care of their exercise and wellness needs. Although most people understand the importance of exercise to mental health and overall wellness, many still need support to get started and build long-term healthy routines. My field notes stated that all participants felt exercise is vital for their health but found it hard to prioritize when life gets busy. Kayla said she also found it harder to incorporate into the workday when she was busy at work because she tended to want to focus more on the subjects that school leaders prioritize. This emphasized the importance of educating future teachers and leaders about the mind-body connection, and how movement plays an active role in how people learn.

Lack of Leadership Knowledge and Readiness to Facilitate Exercise Initiatives

The need for more general knowledge and readiness of school leaders to focus on exercise initiatives for teachers was evident in the data. According to the participants of this study, school leaders often do not focus on incorporating physical activities into the workday. Kayla discussed how administrators in schools have too much to do, so exercise programs would

have to be implemented, supported and monitored by another teacher or someone at the division level:

They have too much to do, so although they could support general wellness more, I don't think they have time to facilitate a program independently. Perhaps someone at the division office could take this on and help administrators encourage teachers to participate.

Kali said they had a principal in the past who loved to exercise. This specific

The principal would encourage school-wide movement events but did not focus specifically on teachers, which further strengthens the theory that those who participate in the exercise, are more likely to enable it to others:

It's excellent when administrators are active because it encourages the entire school culture to lead a healthier lifestyle. Our school would move together for events like the Terry Fox Run and Gym Blast. We would have assemblies that always incorporated movement. He didn't have anything specific for staff, but he encouraged students to move. It would be great to have school-wide initiatives and programs specific to teachers to keep us accountable. I always feel so good when I move, especially outside. I think work would be way more enjoyable.

Facility Issues

Participants tended to see class size, school overcrowding, and lack of facilities as a reason they cannot participate in more exercise or wellness activities during the school day. For example, Kayla noted that they had so many students in their classroom that there was not

enough room to get up and move around safely during the day without going to an alternate space:

I would love to work out and do more body breaks with my students, but my class is too full of desks. It's hard to move when you don't have a dedicated space, and it's always so cold outside most of the year. I would love to see more gym space or dedicated spaces to move more with or without students. It would be great if the school division helped elementary teachers find a space to exercise in like they have in the high schools. I've seen certain high schools that work out as a staff because they have a gym, and I think the accountability and facilities would help me move more during the workday.

Many participants observed that schools should provide staff with facilities like showers and changing rooms because they would love to bike to work or exercise during the school day but do not want to be sweaty. Kali talked about how shower access would help to increase their activity level during the workday:

I would love to run at lunch, but I don't want to be sweaty at work. I need to look professional, but I would definitely exercise if I had shower access.

Madison also discussed how having showers would increase their level of activity during the day:

I would love to do more movement throughout my workday, but my classroom is so hot. Even when I do a Just Dance or short body break with my class, I get very sweaty. Having air conditioning for the warmer months and access to showers would be nice.

A frequent theme that emerged from the data was facility barriers. Lack of space was a big problem both for exercise on their own and with students. David described the lack of space in their school as follows:

We don't have enough gym space which is a problem for supporting exercise in general at this school. The classes are too overcrowded so it's hard to move unless you have the gym or auditorium. This seems to be a common problem in many schools in our city. I'm not sure what the school division could do about it without more money but maybe there is a better way to organize schools so that we could maximize gym space.

Space issues are a common issue at many elementary schools. Although it often is due to a lack of budget, there may be creative ways to solve this barrier so more teachers experience the health benefits associated with more movement throughout their workday. My field notes talked about recognizing that exercise for teachers can save money long-term, so it may be beneficial to invest in addressing space issues if exercise programs are implemented.

Summary

Barriers that emerged from the data included lack of support, lack of time, lack of leadership knowledge and readiness to facilitate, and facility issues. The perceived lack of support to exercise was evident in the data. Most participants did not feel support to exercise for themselves or to move with their students during the day unless it was for a special event. It was sometimes discussed or encouraged for a short time but was never the focus of longer school-wide initiatives. Participants could not recall any specific exercise initiatives for their staff at any school they had worked at in their careers. Some teachers remembered doing a yoga

class or a similar one-time event where they were encouraged to exercise, but something needed to be structured.

The frequency of the subtheme lack of time to participate in exercise demonstrated the importance of creating accessible ways for teachers to do so throughout their workday to reach the recommended exercise guidelines. The data suggested that teachers felt they had too much academic work to get through with their students to make time to move with them, and most felt that leaders did not consider movement academic nor as necessary as reading or math, even though the evidence is clear on its importance. The participating teachers did not feel their wellness was a priority to their school district. My field notes had a high frequency of short phrases stating that teachers think leaders acknowledge the importance of exercise, but it is often the first thing to get pushed to the side when life gets busy, or students have testing or work to complete. It often gets cut from the day if other things need to get done, and not often valued as high priority with themselves or others when they feel busy. As Allen (2013) suggested, the reason for this is that people put value on things that are frequent in their lives. If they themselves do not exercise, it is not valued as highly. Kali talked about a principal who valued exercise. When I asked her if that person exercised frequently themselves, the answer was yes. As someone who values exercise, I often find I am fighting for its value with those who do not, or they verbalize its importance but do not take actions to support it. This may mean the top-down theory of having leaders participate in exercise programs is very important so that they support and encourage teachers to exercise, who will in turn support and encourage students to do so.

Research suggests that on-the-job exercise is important for the productivity and efficacy of workers, increases job-related capabilities, and job satisfaction that relates to physical and mental health (Bische et al., 2019). According to study participants, although exercise research supports school leaders investing in on-the-job exercise models for employees, this is not a focus for professional development opportunities, staff initiatives, or school-wide programs. If school leaders lack knowledge or time to facilitate opportunities to move, participants believed that wellness initiatives need to be supported in other ways — whether it is school-based experts or school division consultants. According to Allen (2013), teachers are bad at taking care of themselves. The study participants all agreed that having a similar strategy to incorporate self-care, like exercise, into the workday would be beneficial. The derived benefits they experienced to support this will be discussed in more detail in the following section.

Derived Benefits

The themes that emerged from the data showed the participants' most common derived benefits included mental health improvement, teacher efficacy improvement, better stress management, and mood enhancement. The benefits of participating in this eight-week program are discussed in more detail below.

Mental Health Improvement

Seven (87.5%) of the eight participants in this research claimed their mental health improved during the eight weeks. According to the participants, they experienced fewer symptoms of anxiety and depression, had more frequent feelings of happiness and wellbeing, and felt like their minds were sharper at work. Negative thoughts decreased, and one participant shared that the quality of work/life balance had improved for them:

I feel so much better! I feel less anxious, happier and have better work-life balance (Joe).

They claimed to have improved problem-solving skills and felt a sense of accomplishment:

I feel like I can get more done at work now. It's easier to focus. (Anonymous survey response)

Teacher Efficacy Improvement

Survey results, interview responses, and observation notes indicated that all participants witnessed improvement in teacher efficacy. The data collected on teacher efficacy is shared by each subcategory listed into the corresponding type of efficacy: the ability to handle daily tasks; influence decisions; manage student behaviour; and instructional self-efficacy. The results are listed according to each subcategory.

The first group interview included the question: “Do you feel that you have the ability to handle daily tasks?” Participants gave themselves a 0-9 rating on Bandura’s Teacher Efficacy Scale (Figure 4.6). Prior to the beginning of the study, five teachers rated themselves between 0-2, three teachers rated themselves between 3-5, and no one rated themselves above 6. At the midpoint, four (62.5%) rated themselves between 1-3, two (25%) rated themselves from 4-6, with one (12.5%) rating above 7. At the end of the study, no one rated themselves below a 3; only one (12.5%) rated themselves from 4-6, while seven (87.5%) teachers rated their ability to handle daily tasks above 7. Seven (87.5%) participants reported that daily tasks felt easier to complete at the end of the study compared to the first group interview (Table 4.4).

Table 4.4

Study Participants: Ability to handle daily tasks

Scale Rating	Before	Mid-point	After
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1-3		N=5 (62.5%)		N=5 (62.5%)		N=0
4-6		N=3 (37.5%)		N=2 (25%)		N=1 (12.5%)
7-9		N=0		N=1 (12.5%)		N=7 (87.5%)

1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit	A Great Deal

N = Number of participants

There was moderate improvement in the ability to handle daily tasks after only four weeks, with increased improvement at the end of the eight weeks. (Table 4.5). When asked how they felt about their ability to handle daily tasks in more detail, one teacher said they felt the exercise made them happier, so work was easier to do:

I feel so much calmer now. It's way easier to concentrate on daily tasks. (Anonymous survey response).

Participants were asked two questions about their ability to influence decisions:

1. How much can you influence the decisions that are made in a school?
2. How much can you express your views freely on important school matters?

Responses showed little to no change after four weeks, with a moderate increase after eight weeks (Table 4.5).

Table 4.5

Study Participants: Perceived efficacy on their ability to influence decisions made in their school

Scale Rating	Before the study		Mid-point		After the study	
1-3 (No Influence)	N=4 (50%)	N=3 (37.5%)	N=2 (25%)			
4-6 (Some)	N=4 (50%)	N=5 (62.5%)	N=4 (50%)			
7-9 (A Great Deal)	N=0	N=0	N=2 (25%)			

1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit	A Great Deal

Study Participants: Ability to influence decisions by expressing their views freely on important school matters

Scale Rating	Before the study		Mid-point		After the study	
1-3 (No Influence)	N=2 (25%)	N=2 (25%)	N=2 (25%)			
4-6 (Some)	N=4 (50%)	N=3 (25%)	N=2 (25%)			
7-9 (A Great Deal)	N=2 (25%)	N=3 (37.5%)	N=4 (50%)			

1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit	A Great Deal

N= Number of participants	Q1=Question 1	Q2 = Question 2
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Before the study began, most of the participants felt they had little to no influence over decisions made in their schools and did not feel comfortable expressing their opinions freely over such matters. At the end of the study, participants showed an increase in their perceived ability to influence decisions and express their opinions freely about important school matters. This indicates that adding exercise to their workday made teachers feel as though they had more influence and freedom to express their opinion on school decisions, even though nothing else had changed.

There was little to no improvement with respect to managing student behaviour and instructional self-efficacy to overcoming classroom complexities such as dealing with difficult students or engaging students who show low interest in work.

When I asked participating teachers to expand on why they thought instructional self-efficacy had not increased as significantly as in other areas, one teacher said they felt better about daily tasks like managing student behaviour but did not feel like they could influence classroom complexities that were beyond their control, which everyone agreed with:

I think this program has helped me manage daily tasks and be more patient with difficult students, but there are some things that still frustrate me, like lack of resource and EA support for students with needs and too many students in my classroom. There are just too many of them for me to feel like I'm making a difference. (Kayla)

After eight weeks, all teachers reported an overall increase in teacher self-efficacy, with the most noticeable increase in their ability to handle daily tasks.

Stress Management

High levels of stress have been shown to result in significantly more mental health issues among teachers than in other professions (Devaki et al., 2019). The exercise showed signs of stress management improvement in study participants. All participants reported that daily tasks felt easier to complete at the end of the study (Figure 4.4). When asked to clarify, one (12.5%) teacher did not report any change in stress management on days where they did not exercise:

I felt better the days I exercised but noticed myself getting grumpier the days I took off from the program. (Anonymous survey respondent)

Mood Enhancement

Mood enhancement was shown in exercise participants in previous workplace exercise studies, and similar results occurred during the eight weeks of this study. Mood improvement was not the focus of this study, yet all study participants mentioned it in their survey or interview. Every teacher claimed that their mood improved on the days they exercised, which supports previous exercise research. Madison emphatically stated how much of a difference exercise had on their mood:

On days when I was able to get out of the building for some exercise and fresh air (go on walks), it really improved my mood for the rest of the day and gave me more patience and made the days feel shorter.

One question about mood and energy level was asked during the midpoint survey and at the final group interview: “Do you notice anything different about your mood or energy level now compared to before you started?” Three (37.5%) participants did not notice a significant change, claiming illness may be a factor. Examples of responses include:

I am always energized immediately following activity. But in general, my energy has been low due to prolonged illness.

The same, but I’ve been sick a lot.

Not really, but I’m sick.

Five (62.5%) teachers claimed that their mood and energy level had improved. Responses aligned with this finding include:

My energy is better, and I feel calmer during the day.

I am always more energized immediately following activity.

I have an overall better mood and higher energy now compared to before.

I always feel better with movement and fresh air. I quite enjoy exercise actually.

I enjoy moving and being active, so any additional activity is always a positive for myself.

Summary

The derived benefits that came from regular exercise were mental health improvement, teacher efficacy improvement, better stress management, and mood enhancement. All effective participants believed they experienced through this study could contribute to better teacher wellbeing, an essential piece of successful education systems (Lawrence, 2016).

Findings from this study support recent studies suggesting that worksite wellness programs for teachers have benefits similar to those experienced in other worksite studies (Lawrence, 2016). The derived benefits experienced by teachers in this initiative suggested that future studies exploring more benefits are necessary. More evidence to support the implementation of teacher exercise programs may encourage school districts to take a proactive approach.

Factors Associated with Program Implementation

The following section describes the themes related to factors of future program implementation. The data showed that participants believe a similar program could be implemented with proper administrator support, exercise promotion, and accountability. They suggested the frequency, duration, and intensity of exercise programs for future initiatives and research.

Administrator Support

All participants thought that it would be possible for school leaders either to develop or to allow programs like this one to be designed to help teachers exercise during the school day.

Participants claimed that barriers exist, but that it would be quite possible to address most of the barriers.

All participants agreed that certain teaching positions help to make this program easier to follow than others. Certain teaching positions would be more difficult, but all participants think it is possible with help from school leaders:

I absolutely loved this program. After it was over, I felt sad. I knew I could continue to do it on my own, but I didn't have the same motivation I did when my peers did it with me. After the eight-week program, I decided to join a group fitness class so I could keep going. I would love to see a similar program in the future. (Amy)

Exercise Promotion

A few participants suggested that school leaders could focus on exercise promotion in general – even if some of the physical plant barriers could not be improved. Madison discussed how exercise promotion could be an easy way for school leaders to get teachers moving:

School leaders could take a more active approach to promoting physical exercise for everyone throughout the school day and not just part of PE class. We often talk about how important it is, but nothing is done to measure if it's actually happening. We measure reading and writing, but we don't ever measure activity levels or any of the benefits that happen when we move. Schools could easily have committees and students take the lead in exercise initiatives for teachers and students.

All participants believed that exercise promotion aimed at encouraging teachers to adopt healthy habits and maintain an active lifestyle could happen in various ways. They suggested fitness classes for staff, workplace wellness initiatives like the one completed, and

school-wide initiatives supported by active teachers or consultant roles specific to this. The participants got very excited about starting a school walk where all classes participated in a regularly set time where they walked around the neighbourhood. By promoting physical activity, school communities can create supportive environments that encourage people to make exercise a regular part of their workday. Kali wanted leaders to be more supportive of movement by being active role models:

School leaders should consider less meetings and more movement or alternate our meeting formats to incorporate more movement. We know how important movement is, yet we barely do anything about it. Phys-ed classes are often the first thing people cut when there is an assembly or classes need to catch up on academics. I would like to see school leaders model healthier lifestyles in general. The stress they experience may be better managed if they focused on wellness for themselves and staff. We could do it together.

Participants could not recall any wellness initiatives for staff ever happening for more than a one-time event, a school-wide special event, or short exercise promotion. Amy remembered one staff event at a previous school they worked at in the district:

We did a yoga class as a staff once because we paid an instructor to come in after school. More opportunities to move would be great! I don't remember any wellness initiatives that were longer than a week or that only focused on teacher wellness specifically. School events where we move are usually for a school event like a one day run or extracurricular, rather than during the day.

Peer Support

Six (75%) participants said that they partnered with a colleague who was also completing the wellness initiative to help them stay motivated. These participants said that having peer support in the group really helped them and would suggest accountability buddies in any future teacher wellness initiative. Demi shared that they looked forward to moving with their colleague:

Workout buddies keep me accountable. I always find moving with other people more fun and I work harder.

Frequency, Duration, and Intensity

When asked about how they could see this program working in the future, participants suggested manageable chunks throughout the day. Success with completion of the program seemed to be easiest when they chose two to three times per week rather than every day. One participant suggested smaller chunks throughout the day, similar to a body break:

I found it easiest on the days I broke my exercise down into manageable chunks. I would suggest to other teachers who would like to try this to focus on 10 minutes of higher intensity, three times per day, for three days. This is obviously dependent on their schedules, but I found this was way more manageable for me. (Amy)

Summary

Program implementation suggestions from this study included the importance of administrator support, exercise promotion, accountability, and suggested frequency, duration, and intensity. Teacher wellness is reported to be better when teachers have supportive administrators and colleagues (Lauzon, 2018). Study participants did not feel a high level of support from their school district or school leaders at present. They reported low levels of

exercise promotion in general and felt that there is more professional development devoted to reading and math rather than physical literacy. Certain participants felt exercise is talked about but not implemented in meaningful ways. The teachers in this study understand the complex role that school-based administrators have and did not believe that this was solely their responsibility to incorporate. According to the data, an easy way that could be implemented immediately is for more exercise promotion in general.

The collected data demonstrated the importance of teachers having accountability from both school leaders and colleagues to implement a similar exercise initiative. The importance of accountability amongst peers was evident. The data showed that the frequency, duration, and intensity of future programs should include chunking exercise into manageable chunks and encouraging a realistic number of days per week to incorporate exercise that would be manageable for busy schedules. Intensity level seemed to be less important to the participants of this study. Some wanted to work out less intensely without removing barriers like not having a shower, but most suggested higher intensity in shorter intervals would have the most benefit. Future studies comparing different ways to incorporate exercise for teachers in realistic ways could be informative for exercise program implementation.

Chapter Summary

This chapter presented the data collected from the survey, group interviews, and observation notes. The data were coded and sorted into subthemes to help analyze the main themes. Encouraging data was collected to help create future teacher wellness initiatives. In the following chapter, I will summarize the findings, draw conclusions, and discuss recommendations for school leaders and future research.

Chapter Five: Summary, Findings and Recommendations

Introduction

In this chapter, I summarize the findings from this study, draw conclusions, reflect on the research methods chosen, and discuss recommendations for research, programming, and policy. This study aimed to explore the feasibility of incorporating short bursts of physical activity for teachers that are inspired by the principles of high-intensity interval training (HIIT) and spread across their regular workday to achieve recommended daily exercise targets. It also investigated the extent to which participants believed they derived benefits from such exercise. Moreover, this study examined teachers' perceptions of the value of participating in HIIT-inspired exercises throughout the day and, assuming they do, indeed, value such an approach to organizing their workday, what they believe a district and/or an individual school could do to make it easier and, therefore, more likely that other teachers would be able to benefit from the effects of short bursts of HIIT-inspired exercise during their workdays too.

Summary of Findings

The primary research question guiding this study was *What do teachers believe educational leaders and/or organizations can do within the context of the school day and existing physical plants to enhance access to the wide range of health benefits of regular physical activity through fostering accessible and realistic exercise programs?*

In service of pursuing this research question, the following sub-questions guided this the study by exposing various aspects of the problem:

- Given the complexities associated with the intensification of teachers' duties in schools and the limitations presented by school buildings, to what extent is it possible to

incorporate short bursts of HIIT-inspired exercise into a teacher's regular workday to help them achieve recommended physical activity guidelines for overall health? What seems to be the most suitable arrangement of such bursts (i.e., frequency, duration, intensity, order, schedule, etc.)?

- What benefits, if any, do participating teachers derive from these short bursts of HIIT-inspired exercise incorporated into their workdays?
- How can school leaders maximize the potential and minimize the barriers to promoting physical activity to help incorporate realistic exercise programs for teachers?

Incorporating Exercise into the Workday

Participants suggested that it is entirely possible to incorporate short bursts of exercise – inspired by the principles of HIIT – into their workday. As previously mentioned, participants in this study incorporated at least 30 minutes of exercise three or more days per week. Teachers chose days they were going to add the exercise and how they wanted to split up their 30 minutes of exercise during those days. While most found success with doing 10 minutes of exercise, three times per day, the flexibility of this initiative in terms of when the teachers structured their exercise was one of the reasons for success.

Despite the fact that we did not monitor the intensity of the participants' exercise (it most likely varied across participants), all participants claimed to experience benefits, nonetheless. Research suggests that people are most successful with exercise programs when they are realistic and "fun" (Lakicevic et al., 2020) The frequency and structure of this study made getting in regular exercise realistic and having a set expectation to incorporate the exercise into their workday seemed to work best for most participants. Furthermore, according

to teachers enrolled in this study, the gentle accountability of engaging in such activity with a group of peers was enough to help them overcome most of the inertia that prevents many of us to exercise regularly and kept them interested in it by including a social aspect.

The eight teachers in this study structured their exercise into short periods (usually 10-15 minutes) s throughout the workday so that it was not overwhelming, easy to incorporate into their daily workflow, and they did not get too sweaty - an important outcome as not having access to showers in the particular school at which this study was conducted was identified as a barrier. Teachers at other schools with access to showers could consider structuring their workouts into longer periods if that barrier was not present. Nevertheless, further study is required to determine whether there are optimal frequency, duration, and intensity factors that should be considered by teachers who want to try out programs such as the one implemented in this study on their own.

Reflecting on findings from this study and considering teachers' many different exercise levels of teachers, I would suggest two to three times weekly, chunking exercise into approximately 10 to 15 minutes, three times daily, with little expectation on intensity. Once teachers develop an exercise routine, the frequency and time could be altered. I believe many teachers would exercise if the opportunities were presented in realistic and maintainable ways.

Ways School Leaders and Organizations Can Help

The participants suggested that incorporating short bursts of exercise – inspired by the principles of HIIT – into their workday is entirely possible if schools and/or districts reduced existing barriers and offered support. The key findings from this study, in terms of implementation of a similar program in other settings, were that school leaders need to

promote and encourage exercise in general, work with staff to reduce existing physical plant and time barriers and provide time for staff to implement wellness initiatives.

These results align well with other studies. For example, Agron et al. (2010) found similar barriers to school wellness initiatives across school districts in the United States. Teachers in both studies observed that their school boards tend to give lip service to wellness – they say that wellness is important but do not act in ways that demonstrate their support for wellness – particularly in the realms of implementing adult wellness programs, removing barriers to such programs, or in monitoring wellness initiatives that do emerge.

Participants in this study noted that they benefited from the accountability that comes from having their peers involved in the project. They noted that they were less likely to skip their exercises because they did not want to fall behind their colleagues or “let them down”.

They also agreed that interspersing short bursts of exercise throughout the workday was realistic and helped them be successful. Their suggestions that school leaders could increase exercise among teachers and other staff merely by promoting wellness in general and by contributing to organizing and participating in physical activities together as a staff, entire school community, and/or division provide food for thought. As was found in previous research (e.g., Agron et al., 2010), the potential benefits emerged only when someone oversaw the implementation and monitoring of such programs.

Findings from this study also correlated with Lauzon’s 2018 study of the implementation of wellness programs among teachers in British Columbia. In that study, a key finding was that supportive administrators, colleagues, parents, and public support are critical to the success of exercise and wellness initiatives. Teachers who participated in Lauzon’s study noted that schools

could form committees to help organize school-wide exercise initiatives that include teachers, which coincides with the belief that support is needed by other sources for teachers to experience better wellness (Lauzon, 2018).

In the present study, teachers advocated for help from school leaders (i.e., school- and district-level administrators) to reduce barriers. Suggestions included: helping to reduce lack of time by incorporating wellness into the workday or staff meeting time, creating space for teachers to workout either in teacher groupings or with students, depending on the facility, and by installing showers for staff similar to high schools so that exercise is more accessible during the workday.

Participants shared they felt leaders need to have a role in exercise programs. School boards and universities should consider the impact of this research when creating teacher and school leadership training programs. Edutopia, a website founded by filmmaker George Lucas was founded in 1991 to celebrate and encourage innovation in education (Edutopia, 2023). Edutopia believes in strong teacher development and produced a series titled “Schools That Work”, which focuses on improvement for students. The series focuses on interviewing teachers, students, principals, and administrators, to find resources, lesson plans, assessments, and training tools (Edutopia, 2023). Edutopia points out that teachers need to be supported by their organizations to have the most impact on student learning (Edutopia, 2023). Edutopia shares many articles about teacher stress, burnout, and ways for leaders to help (Edutopia, 2023). In a recent article for Edutopia, Gonser (2021) wrote that the entire school community, not just teachers, must work together to reduce stress and burnout. Gonser (2021) stressed the importance on teacher health and wellbeing, stating that it needs to be prioritized into school

culture, and underscored school-based leaders' role in creating the conditions necessary to do so (Gonser, 2021). Seven evidence-informed suggestions based on data collected in dozens of schools were surfaced in the article. To help teachers manage stress, school leaders developed "unconventional but extremely successful" ways to support their staff (Gonser, 2021) including:

1. Survey Teachers – And Listen to Them: School leaders in California did not impose anything because they thought it would help, without surveying teachers online anonymously. Leaders should not assume they know what is best. Because of this, one school organized mini-therapy sessions via a helpline. Instead of telling staff to "try yoga" to relax, they actually hired a yoga instructor to come in to lead yoga classes, mindfulness, and breath activities.
2. Give Teachers an (Actual) Break: One school in Nashville created a "tap-in/tap-out" system. It allowed teachers to call a colleague in the building via text to quickly come relieve them of the classroom for 10-15 minutes when they are feeling overwhelmed. It reinforced the idea that teachers cannot do it all alone, and they sometimes need a moment to collect themselves. It also reinforced that they are a team who work together to find solutions.
3. Stop Watching the Clock: Two principals in Oregon say that teachers put in too many hours around the school day. These principals talked about the importance of not monitoring teachers coming in and out of the building, or during their preparation time. They stated that as long as teachers are getting their work done and are there for students, administrators need to stop monitoring them. According to one of the

principals surveyed, “Having that flexibility means the world to teachers, and we all know that they work way more than their contract requires anyway” (Gonser, 2021).

4. **Create Shared Agreements:** When self-care is not reflected in the culture of a school, it falls on the teachers to make time and find resources to support themselves. Self-care should be part of school culture rather than a responsibility for individuals to pursue themselves. Shared staff agreements set parameters and norms around interactions, setting realistic work boundaries and reflecting on wellbeing.
5. **Plan for Regular and Informal Check-Ins:** Quick check-ins with teachers signal that you care. They do not always require planning or need to be formal. These check-ins could be used to check in on the demands their facing and their wellbeing.
6. **Schedule Planning Time:** A principal in Nashville developed a schedule for teachers that allows for collaboration while students receive. It builds Professional Development into the workday, rather than after hours.
7. **Model and Support Wellness:** Since teacher stress levels are comparable to those of emergency room staff, a professional development coordinator spoke about the importance of leaders setting examples of wellness and self-care. The coordinator talked about how administrators need to model this by exercising during the workday, not answering their phone or email after hours, and telling teachers not to expect a response from email over the weekends. Carving out time for schoolwide wellness including exercise and mindfulness can lighten the teachers’ workload by signaling wellness as a priority. Leaders need to make it clear they value teacher wellness by modelling it and taking action as well as just saying they care.

The suggestion for leaders to “Stop Watching the Clock” coincided with the flexible schedules the World Health Organization recommended for employers to help employees get enough exercise (Gonser, 2021; WHO, 2023). For example, if a teacher has a prep after lunch, they could use it to go to a yoga class as long as it does not affect their work. Arranging prep time around exercise schedules is another way administrators could help teachers reach their weekly exercise targets if formal exercise programs are not in place. The “Informal Check-Ins” suggested could be used to check in on exercise programs if implemented, and teacher wellness in general (Gonser, 2021). “Modeling and Supporting Wellness” by creating school-wide schedule for mindfulness could incorporate an exercise component and emphasized the importance of leaders showing value in exercise by making it frequent for teachers, and participating in it themselves (e.g., Allen, 2013; Gonser, 2021).

Health Benefits of Wellness Initiative

The finding from the survey and group interviews suggested that incorporating short bursts of exercise -inspired by the principles of HIIT- can lead to several perceived health benefits. After analyzing the data, I found that participants believed that they derived many benefits. For example, most of them pointed to improvements in mood, stress management, mental health indicators, and their overall efficacy. Participants also reported improvement in three out of four of teacher self-efficacy indicators highlighted by Bandura in his efficacy scale – specifically, teachers’ efficacy to handle daily tasks, influence decisions, manage student behaviour improved. The fact that they did not show improvement in instructional efficacy that related to classroom complexities opens the door to further research – was this study not long enough for participants to observe improvements in this indicator or is addressing the stress

associated with increased classroom complexities beyond the reach of teacher exercise and wellness programs?

There was a high level of agreement among the participants that incorporating a similar exercise initiative is possible and highly recommended because of the benefits they received. According to a recent study, workers who participate in on-the-job exercise programs show improvement with physical and mental health, which participants in this study also claimed to experience (Bische et al., 2019). Along with feeling better mentally and physically, participants in this study felt more eager and capable of completing daily tasks and handling stress at work, they claimed to feel happier in general, especially the days they exercised outdoors. These results coincided with the yoga study where participants felt better able to manage their stress when they included yoga (Jackson, 2013).

Kyriacou (2018) discussed the importance of teachers incorporating stress management techniques, such as this, into their daily practice. Since it impossible to remove stressors altogether, and teachers consistently seem to be experiencing high levels of stress (STF, 2023), it is important for leaders to provide ways to help them manage their stress. The teachers in this study consistently agreed that other teachers, and potentially the entire school community, would benefit from incorporating wellness initiatives supported by school leaders.

Reflection on Methods

I chose to use a collective explanatory case study to follow a logical pattern that connects the research questions to the data and conclusions (Yin, 2017). In this study, the collective explanatory case study did help me create a more thoughtful conclusion because I

was able to use multiple cases to obtain more information, as I was hoping to accomplish (Stake, 2010). There were pros and cons to using the methods I chose.

Reflection on Data Collection

I was able to gather large amounts of data quickly during the group interviews (Yin, 2017). The ideas shared by participants helped generate more comments from other participants, which was very helpful (Stake, 2010). I was able to interact with the participants and pick up on non-verbal cues, clarify any questions, and collect multiple participant reactions simultaneously (Yin, 2017).

The self-reporting methods of interviews and surveys I used in this study were simple for participants to complete. I selected this self-report measure to get more insight as to how participants felt in terms of efficacy throughout the eight weeks. The one thing I would do differently next time is include more specific questions in the mid-point survey so that I would not have to clarify responses quite as extensively in the final group interview. For example, I asked if they noticed anything different in their mood and some survey responses would simply say yes or no, rather than offering specifics. I had to clarify what their experience was like at the group interview.

Bandura's (1997) Teacher Self-Efficacy Scale is an effective measure of how teachers feel at work. Participants were asked questions based on Bandura's scale at the beginning, mid-point and end of the study. However, next time, I would love to conduct one-on-one interviews with each participant during this process, rather than in the group. Although the group interview saved time and good data was collected, I think I would have been able to clarify certain

responses with individuals a bit better in the moment, rather than having to analyze data multiple times during the coding process.

I took field notes during the interviews and throughout the study of observation of participants as well as interview questions. I am glad I also recorded the interviews, as my notes seemed to miss a lot of good points participants shared, upon second review of the interview recordings. Allen (2017) stated that notes are best combined with interviews and focus groups, which I would agree with, and include the importance of taking recordings or having a secondary note-taker.

Reflection on Data Analysis

This was my first attempt at analyzing data with the help of codes. One of the strengths of coding is to help build answers to questions in qualitative research, which helps to find meaning that may be overlooked in other settings, which I experienced (Okoko et al., 2023). Saldaña (2013) suggested that codes in qualitative data can be single words or a short phrase that are assigned in a summary in field notes. The first portion of data, coded during the first cycle of coding, can range from a word to a full paragraph. The second cycle of coding can be focused on linking similar words to each other (Saldaña, 2013).

This process was a bit more difficult than I expected because I had to analyze my notes, interview questions, survey, as well as the recordings to see if I had missed anything. It was far more time consuming than I had anticipated and I missed some good comments in the first analysis, that I did not think were relevant until my supervisor brought them to my attention. I wish I would have found Braun and Clarke's thematic analysis procedures earlier, as I found it

after the study was completed so it took more time to figure out how to create themes and subthemes than it might otherwise have done (Braun & Clarke, 2012).

In the future, it would be very important to have a team of experienced data collectors to help, and I am very thankful to have a good supervisor with a ton of experience on data collection who was able to guide me to really good resources and make suggestions to help me better understand the process of data collection and analysis.

Future Initiatives

When looking at the data, I have been inspired to help initiate other exercise programs in my own school division. One participant suggested that a greater level of responsibility should be expected of school leaders in the promotion of exercise. Experts could be used to help initiate wellness programs such as this, and most school communities have teachers or staff with such expertise including physical education teachers, fitness enthusiasts and members of the school community who enjoy living active lifestyles.

I love teaching physical education to students because of how good they feel, how excited they are to be there, and how much joy them seem to experience when moving together in new ways. As my own passion project outside of school is encouraging different ways of moving for health benefits in adults, especially those who report disliking sports or traditional gym settings, I think school divisions could incorporate ways of moving that are realistic, attainable and help teachers gain the derived health benefits that the study participants experienced.

Future research would be beneficial in to see if a top-down method would encourage teachers to move more such as suggested by the World Health Organization (2023). I know that

as a teacher, my passion for fitness and moving has inspired my students to be more active and this theory was verified when looking at the data collected from Gonser (2021). Leaders need to take an active role by modeling and supporting wellness, allowing for flexible schedules, doing check-ins and anonymous surveys with their staff (Gonser, 2021).

When I was a classroom teacher (rather than teaching physical education as I do now), I helped remove exercise barriers like time for my students by moving during the school day, using physical movement in subjects like math, and have had many students gain an interest in physical fitness outside of school because of it. Parents have also been inspired to move more with their families because of the physical activities their youngsters do at home. Applying this to a top-down theory, I would suggest that schools need to do more research on whether exercise promotion, exercise and wellness initiatives, and support for their leaders would encourage more wellness benefits at a school administration level - leading to more exercise for teachers, and school communities in general, and how best to implement and monitor these initiatives (Agron et al., 2010; Gonser, 2021).

Since this study revealed that teachers are often pushed to justify to each other and their administrators when engaging students in physical activity more so than when they engage in other activities, the link between physical movement and intellectual development should be highlighted when anyone questions why movement is important for everyone in the context of the school day (Belton et al., 2022). Many studies highlight the positive effects of physical activity on cognitive and motor function, emotional regulation, and brain function – by supplying brain cells with oxygen, promoting the production of new brain cells (Belton et al., 2022; O’Hagen et al., 2022; Wright, 2019). Understanding the importance of body breaks,

regular movement and breaking up sedentary behaviours for students can lead to better understanding of why teachers should be encouraged to pursue regular physical activity during their workday as well.

The results of this study have encouraged me to take a more active approach with my own school colleagues. Participants in this study all claimed that they were going to exercise more now that they knew it was possible. It would be beneficial to conduct more research on whether the same results would occur in multiple elementary schools, whether certain demographics were more prone to exercise, and the most beneficial way to encourage higher levels of activity amongst teachers. Leaders can definitely help by creating schoolwide or teacher specific exercise initiatives, creating flexible schedules that allow for teachers to exercise, and monitoring this with their staff by checking in, and sending anonymous surveys for feedback (Gonser, 2021).

Budgets are an ongoing issue in my own division, but it would be interesting to conduct more studies to see if derived health benefits of similar initiatives could reduce absenteeism amongst school staff. If absenteeism was reduced, more money could be saved to be allocated to better exercise and wellness programs (Lever et al., 2017; Wattles, 2003). According to WHO (2023) the problem is that organizations often do not invest in wellness initiatives that could prevent ongoing health issues and save money long-term. More research could support the investment of putting money into teacher wellness (Agron et al., 2010).

On the day of my thesis defense, the Saskatchewan Teachers' Federation (STF) released a news advisory stating that the STF president, Samantha Becotte, was "extremely disappointed with today's surprise announcement of education funding from the Government of

Saskatchewan” (STF website, 2023). The Government of Saskatchewan released 40 million more dollars to education two months after the initial budget announcement. The STF president, Samantha Becotte, claimed that they need an additional \$400 million to restore funding in Saskatchewan to 2012-13 levels and that the release of the funds after school divisions were finalizing their budgets was very stressful. The STF believed that the Minister of Education most have known about the funds before the initial budget but wanted to make it seem like the Government is investing into education, rather than show the realities of the current deficit school boards are facing in Saskatchewan (STF, 2023). The late addition is adding additional anguish to school divisions, is still very much lacking, and is creating a lack of trust between school divisions and the Saskatchewan Government, according to Becotte (STF website, 2023).

In my ideal teaching world, I would create higher level positions like teacher wellness consultants to help school leaders, create programming, support implementation, develop teacher training, and create professional development opportunities to support better wellbeing and exercise programs for teachers, staff, and school communities to support the monitoring of the initiatives (Agron et al., 2010). A more budget-friendly approach may be to create more flexible work schedules to facilitate participation in physical exercise around the lunch hour, or scheduling preps that allow for teachers to make sure they have time to exercise throughout their workday, especially if the benefits support less absenteeism other days (Gonser, 2021).

Future research could be used in many different aspects to shift away from current sedentary school systems that focus primarily on academics to more active, school systems. It would be helpful to see if more active school communities could be a factor in higher academic

achievement, and less teacher burnout (Agron et al., 2010; Gonser, 2021). I would be interested to see if a study on less academic focus and more on wellness and moving while learning could maintain or improve reading and math levels amongst elementary students. Future research should include a bigger sample size with more schools or an entire school division, such as the successful exercise programs highlighted by Lever et al. (2017), to see if exercise programs could be better justified in Saskatchewan if there are more savings for school divisions. The economic impact of physical inactivity may be another reason schools should invest in exercise programs for teachers (Lever et al., 2017), but more evidence is needed.

Conclusion

In conclusion, the findings emerging from the study were:

1. There was a high level of perceived health benefits from incorporating exercise into a teacher's workday.
2. There was a high level of agreement that it is possible to incorporate a similar wellness initiative for teachers, with proper support. It was highly recommended.
3. There was a high level of agreement that teachers believe that current school organizations acknowledge that there is a wellness problem with staff but may not have the tools or money to help. The primary focus of divisions is on academics, even with knowledge that exercise helps mental health, teacher efficacy, stress management and mood, among other health benefits. Organizations can take an active role by trying more "unconventional but extremely effective" (Gonser, 2021) methods of incorporating exercise and wellness into the workday to benefit their teachers, and thereby impact student learning.

4. There was consistent agreement that teachers will feel better if their school leaders incorporate exercise and wellness initiatives; this does not need to be limited to teachers but as entire school communities or at a school district level. The evidence of the economic impact of physical inactivity may be a good motivator for school organizations to take more proactive measures.

As previously mentioned, the World Health Organization (2023), backed by reams of research, believes that workplaces and, by extension, employers can play an important role in the overall health of individuals and entire communities by promoting increased activity levels among adults who work for them. WHO noted that employees are more likely to pursue regular exercise when their employers:

- Provide on-site gyms or other physical activity facilities,
- Allow flexible work time or breaks for participation in physical activity,
- Promote the use of stairs,
- Promote “active transport” (bicycling or walking to work), and
- Provide showers and/or changing facilities.

This study demonstrated that providing on-site workout programs can impact teachers in a similar way to how the World Health Organization claims it can. WHO (2023) described the importance strong leadership, support systems, and programs are needed to improve employees’ self-efficacy, in addition to promoting physical activity at the worksite, providing facilities for exercise to take place, and encouraging flexibility that increase the odds that employees will pursue physical activity during their workday. The problem is that even when some school organizations talk about ways for exercise or wellness to happen on-site, there is

not the properly implementation and monitoring needed to ensure teacher participation to maximize the benefits (Agron et al., 2010). This study's findings further supported that if teachers are supported, encouraged, and provided with the opportunity to exercise in realistic ways, their efficacy can improve along with other health benefits. These results demonstrate that exercise can lead to improved health benefits for employees (WHO, 2023).

Teacher self-care can contribute to efficacy and job satisfaction. Exercise can lead to many health benefits both mentally and physically (Jindo et al., 2020; Mandolesi et al., 2019). The problem is that teachers are bad at taking care of themselves and many claim they do not have time to exercise or do things to improve their health on their own time (Allen, 2013; Gonser, 2021). The data analyzed from this study highlights the importance of helping teachers achieve this by incorporating on-site exercise and wellness programs, leaders modelling exercise and wellness, and trying unconventional methods to help stressed out teachers reach exercise targets (Gonser, 2021). Participants experienced many derived health benefits that other teachers who exercise during their workday would most likely experience as well. This data should not be ignored, especially with new data on class complexity, teacher intensification, and burnout rates (Allen 2013; Gonser 2021; STF, 2023).

It seems feasible to implement such programs, with proper support from school leaders. However, the study revealed that teachers did not believe that school leaders have the necessary tools and resources to address the wellness problem with staff – or, they do not know how or have the time to support, implement and monitor them, and the lack of funding for programming overall makes it difficult to justify expending resources that benefit teachers directly (Agron et al., 2010; STF, 2023). Despite this barrier, there is a consensus that teachers

and the entire school community can benefit from similar initiatives and school divisions can save money in the process (Chui, K. et al., 2019; Lever et al., 2017). Taking care of themselves can lead teachers to have better efficacy at work (Jindo et al., 2020; Mandolesi et al., 2019; Wattles & Harris, 2003). School leaders and future teachers should be properly trained on how this could be possible.

I recommend that schools prioritize exercise and wellness initiatives as part of their overall approach to education. The new teacher workload intensification report highlights the importance of similar exercise initiatives. School divisions need to be proactive with current teachers, implement new teacher and leadership training that puts value into their most important asset. Such initiatives need to be implemented at the organization level with support from school leaders, and should include strategies such as providing exercise programs, and training, promoting active living and encouraging flexible work schedules to facilitate participation in physical exercise. Recently I heard a senior school leader say that “students are our first priority”. Once this statement changes to “staff are our first priority”, I believe that true change will happen. Once teachers are seen as an investment into the happiness and academic success of students, everything for students will improve in the process.

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Appendices

Appendix A – Invitation to Participate

**Department of *Education*
University of Saskatchewan**

**PARTICIPANTS NEEDED FOR
RESEARCH IN EDUCATION**

We are looking for volunteers to take part in a study of
exercise and wellness for teachers.

As a participant in this study, you would be asked to engage in short exercise activities (less than thirty minutes) during your regular school day, a few times per week for eight weeks. There will be an initial meeting to provide information about the study, one short survey (about 40 minutes) and two group interviews (about 90 minutes each) during the study.

For more information about this study, or to volunteer,
please contact:

MacKenzie Firus

Educational Administration

at

306-###-####

Email: firusm@spsd.sk.ca

**This study has been approved by the University of Saskatchewan
Behavioural Research Ethics Board**

Appendix B – Participant Consent Form



Participant Consent Form

You are invited to participate in a research study entitled: Teacher Wellness Initiative: Viability of incorporating exercise into teachers' workdays

Student Researcher(s): MacKenzie Firus, Graduate Student of Educational Administration, College of Education, University of Saskatchewan, (306) 966-2509, eadm.inquiries@usask.ca

Principal Investigator/Supervisor: Scott Tunison, Graduate Student Supervisor, Assistant Professor, College of Education, 306 966-2509, scott.tunison@usask.ca

Purpose and Objective of the Research:

- The goal of the research is to see in which ways teachers may benefit from short bursts of exercise interspersed throughout their workday. Furthermore, we wish to explore whether it would be feasible for school leaders to implement a teacher wellness initiative such as this that encourages such benefits.

Procedures:

- The research activities will include short bursts of exercise throughout the day for a minimum of three times per week for eight weeks.
- Data will be collected in the form of observation, a midpoint anonymous survey, and group interviews.
- The interviews will be audio-recorded on the researcher's cellphone using specialized software designed for this purpose. Participants may request that the recording be stopped at any point during the group conversation; if this happens, the researcher will rely exclusively on her notes as a record of the discussion. Participants may also cease participation at any time; however, once a group interview has taken place, it will be impossible to remove the individual's contributions as they were part of the overall flow of the discussion.
- MacKenzie Firus will transcribe the group interviews for analysis purposes. She does not intend to return transcriptions to the group for verification. However, if any participant wished to review what they said during a particular interview session, they may contact Ms. Firus and she will review the transcripts with said individual.
- The research will take place in your school.

Potential Risks:

- All exercise has some inherent risk for personal injury. In consideration of participation in exercise, physical activity can be strenuous. If you are not in good health, a proper physical condition to participate in exercise is required to be obtained from a qualified physician. If you believe any exercise condition becomes unsafe during the study, please immediately discontinue your participation. If you have any prior injury or health condition that has been cleared by a physician, please let the researcher know. A PAR-Q will also be administered to ensure that you are fit to exercise should be filled out prior to participating in exercise.
- Research will take place at your school. Since the school is under the jurisdiction of Saskatchewan public health, we will abide by all recommended safety precautions to reduce the risk of spread of COVID-19 and you are asked to follow public health directives as well.
- If you feel that you are from a vulnerable group with respect to COVID-19 effects (e.g., senior, immuno-compromised) please discuss your participation with the research team and your physician before consenting. You are under no obligation to participate and nothing bad will happen if you change your mind about participating in the research. Virtual participation in interviews can be offered if that is more comfortable.
- The following safety protocols must be followed:
 - Screening – as per requirements of the University of Saskatchewan
 - Take appropriate precautions (e.g. mask) when entering public indoor spaces.
 - Wash your hands upon coming into the building. Hand sanitizer will be made available to you.
 - Physical distancing will be maintained, at all times, and if possible, wear a face covering / cloth mask. Otherwise we will provide you with PPE.
- Contact information will be kept separate from data collected through the research study to allow for de-identification of the research data.
- You maintain your right to withdraw from the study at any time, including research data (except as noted above). If you do withdraw, we will continue to maintain your contact information and will only give it to Occupational Health if required for contact tracing.
- We cannot guarantee anonymity as the personal contact information identifies you as a participant.

Potential Benefits:

- Benefits of exercise can occur but are not guaranteed by the researcher.

Confidentiality:

- The researcher will undertake to safeguard the confidentiality of the participants, but cannot guarantee that other members of the group will do so. Please respect the confidentiality of the other members of the group by not disclosing the contents of this discussion outside the group, and be aware that others may not respect your confidentiality.
 - The data collected as part of this research project will be published in a thesis but the city, division, and school will be referenced with pseudonyms. Furthermore, you

- are also invited to indicate a pseudonym by which you would prefer to be referenced in this research. If you decline to identify one, the researcher will select one for you.
- Although the data from this research project will be published and presented at conferences, the data will be reported in aggregate form so that it will not be possible to identify individuals.
 - Your identity will be kept confidential in all publications emerging from this study. Although direct quotations may be reported, all identifying information will be removed from the text.
 - Because the participants for this research project have been selected from a small group of people, all of whom are known to each other, it is possible that you may be identifiable to other people on the basis of what you have said.

Storage of Data:

- Should any physical data be collected (e.g., hard copy of a reflection journal), the data will be stored during the period of the study by the student researcher at her home office in a locked cabinet. Once the research is completed, all physical data will be securely shredded.
- Most data will be electronic. These data will be stored in a folder shared by the student researcher and her supervisor on the University of Saskatchewan's secure cloud-based storage facility.
- Data will be stored for five years post-publication as is common practice at the University of Saskatchewan. The data will be destroyed beyond recovery after the five-year term using electronic tools recommended by the University at that time.

Right to Withdraw:

- Your participation is voluntary. Please participate only in those research activities that you are comfortable with. You may withdraw from the research project for any reason, without explanation or penalty of any sort. Should you wish to withdraw, you may leave group meetings at any time; however, data that have already been collected cannot be withdrawn as it forms part of the context for information provided by other participants.

Follow up:

- To obtain results from the study, the participants may contact the student researcher. The thesis will be published. As part of the approval process at the school division, the researchers have agreed to provide a summary of the research to the division and participants may seek follow up via that avenue as well.

Questions or Concerns:

- Contact the researcher(s) using the information at the top of page 1.
- This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office: ethics.office@usask.ca; 306-966-2975; out of town participants may call toll free 1-888-966-2975.

Consent:

Signed Consent:

Your signature below indicates that you have read and understand the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project. A copy of this consent form has been given to me for my records.

Name of Participant _____
Signature _____
Date

Researcher's Signature _____
Date

A copy of this consent will be left with you, and a copy will be taken by the researcher.

Appendix C – Operational Approval Application



Saskatoon Public Schools
Inspiring Learning

Please complete this application form and send it by e-mail to: Remillardl@spsd.sk.ca

Applicant(s):

Last Name	First Name	Telephone Number
Firus	MacKenzie	

Mailing Address

City	Province	Postal Code	Present Position
Saskatoon	SK		Teacher

If the study is a requirement for a degree, please specify which degree:

Master's of Educational Administration

Will applicant actually conduct study? Yes No

If NO, please give name, position and qualifications of person(s) who will conduct the study:

Description of Proposed Study:

Title of Study:
Teacher Wellness Initiative

Statement of Problem/Research Question:

It is believed that teachers can benefit from adding exercise to their daily routines. Benefits include but are not limited to better efficacy at work, improved mental and physical health, decreased absenteeism, and increased productivity. While there has been extensive research regarding the benefits of exercise for people in general and for employees in various sectors of the workforce, there has been limited examination of the benefits of physical activity during the workday for teachers. This may be due to barriers to fitness, limited time and The purpose of this study is two-fold. First, it will explore the feasibility of schools incorporating several short bursts of physical activity inspired by the principles of high-intensity interval training (HIIT) spread across teachers' regular workday as a means of achieving recommended daily exercise levels. Second, it will investigate the extent to which the participants – teachers – believe they derive benefits (e.g., self-efficacy to cope with the complexities of working in contemporary schools, decrease stress, etc.) from this approach to spreading out HIIT-inspired exercises through the day that are similar to those that they accrue from the traditional HIIT approaches in which they typically engage.

The following research questions will be examined:

What can educational leaders and organizations do within the context of the school day to enhance teachers' access to the wide range of healthful effects of regular physical activity through fosters accessible and realistic exercise programs?

This research will be guided by the following sub-questions to explore various aspects of the problem.

- Is it possible to incorporate short bursts of HIIT-inspired exercise into a teacher's regular workday to achieve recommended daily exercise targets for overall health? What seems to be the most suitable arrangement of su bursts (i.e., frequency, duration, intensity, order, schedule, etc.)?
- What benefits, if any, do participating teachers derive from these short bursts of HIIT-inspired exercise?
- To what extent are these benefits similar to those they experience from their traditional HIIT regimes?
- What are the experiences of elementary school teachers involved in HIIT-inspired workouts during the workd
- What can a school do to maximize its facility and minimize the barriers around physical activity?

Significance of Study: (i.e. How will this study contribute to the improvement of education in Saskatoon Public Schools)

This study could potentially influence schools to help minimize barriers to physical activity for teachers, and he school leaders learn ways to incorporate a teacher wellness initiative that benefits teachers, and therefore students.

Research Methodology: (Please check the appropriate boxes)

- | | |
|--|---|
| <input type="checkbox"/> Questionnaire | <input checked="" type="checkbox"/> Participant observation |
| <input type="checkbox"/> Individual Interview | <input type="checkbox"/> Document Analysis |
| <input checked="" type="checkbox"/> Focus Group(s) | <input checked="" type="checkbox"/> Other Journal |

If other, please specify: _____

Intended Use of Results: (Please check the appropriate boxes)

- | | |
|--|---|
| <input checked="" type="checkbox"/> Published as a Masters' thesis/project | <input type="checkbox"/> Published as part of a conference presentation |
| <input type="checkbox"/> Published as a Doctorate dissertation | <input type="checkbox"/> Not published |
| <input type="checkbox"/> Published in a scholarly journal | <input type="checkbox"/> Other |

If other, please specify: _____

Participants: (Please specify the number of participants desired who are...)

- | | | | |
|---|-------------------------------|--------------|---------------------------------|
| <input type="checkbox"/> Pupils | Number: _____ | Grade: _____ | Time commitment: _____ |
| <input checked="" type="checkbox"/> Teachers | Number: <u>8</u> | | Time commitment: <u>8 weeks</u> |
| <input checked="" type="checkbox"/> Principals | Number: <u>1-2 (possibly)</u> | | Time commitment: <u>2 hours</u> |
| <input type="checkbox"/> Other, please specify: | _____ | | |

The researcher will work with the participants: (Please check the appropriate boxes)

- | | | |
|---------------------------------------|--|--|
| <input type="checkbox"/> Individually | <input checked="" type="checkbox"/> Small groups | <input type="checkbox"/> Entire class(s) |
|---------------------------------------|--|--|

Schools: (Please indicate the schools in which you hope to work)

Ecole Victoria

Time Frame:

Proposed dates for:

Commencing:

Completing:

May 2022 (Study will take 8 weeks from start date.

June 2022

Required Attachments:

The following attachments are required prior to processing the application: (Please check if the attachment is included)

- A copy of the signed letter or certificate of approval from the appropriate institutional research ethics review committee (when appropriate)
- Information package provided to the institutional research ethics review committee (when appropriate).
- Copy of the research instruments (e.g., surveys, interview instruments, etc.,).
- Copy of consent/assent forms (including parental consent forms when students are research subjects).
- Will send approved consents from the teachers involved once the study has been approved.

University Authorization:

If this application is being conducted within the context of an academic institution, the research design and instruments mentioned herein have been approved by:

Approval date:

Institutional Research Ethics Review is in process*

In-review

**Final SPS approval is contingent upon ethics board approval*

Faculty Advisor's or Department Head's Name:

University:

Supervisor - Scott Tunison

University of Saskatchewan

Commitment of Researcher(s):

- I am willing to provide a final report of my study to Saskatoon Public Schools.
- I am willing to provide a presentation of my research findings to schools and/or the school division.
- I agree to adhere to the ethical standards and procedures as outlined in my application package.
- I agree to seek permission to make any changes in the methodology outlined in the application.

Signature:

Date: March 10, 2022

Appendix D – Bandura’s Instrument Teacher Self-Efficacy Scale

BANDURA’S INSTRUMENT TEACHER SELF-EFFICACY SCALE

This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinions about each of the statements below by circling the appropriate number. Your answers will be kept strictly confidential and will not be identified by name.

Efficacy to Influence Decision making

How much can you influence the decisions that are made in the school?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you express your views freely on important school matters?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

Instructional Self-Efficacy

How much can you do to influence the class sizes in your school?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to get through to the most difficult students?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to promote learning when there is lack of support from the home?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to keep students on task on difficult assignments?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to increase students’ memory of what they have been taught in previous lessons?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to motivate students who show low interest in schoolwork?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to get students to work together?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to overcome the influence of adverse community conditions on students’ learning?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Nothing Very Little Some Influence Quite a Bit A Great Deal
 How much can you do to get children to do their homework?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

Disciplinary Self-Efficacy

How much can you do to get children to follow classroom rules?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

How much can you do to control disruptive behavior in the classroom?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

How much can you do to prevent problem behavior on the school grounds?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

Efficacy to Create a Positive School Climate

How much can you do to make the school a safe place?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

How much can you do to make students enjoy coming to school?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

How much can you do to get students to trust teachers?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

How much can you help other teachers with their teaching skills?

1 2 3 4 5 6 7 8 9
 Nothing Very Little Some Influence Quite a Bit A Great Deal

How much can you do to enhance collaboration between teachers and the administration to make the school run effectively?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to reduce school dropout?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to reduce school absenteeism?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

How much can you do to get students to believe they can do well in schoolwork?

1	2	3	4	5	6	7	8	9
Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

Appendix E – Group Interview Questions

Initial Interview:

1. What are you currently doing for physical activity?
2. What is your previous experience with exercise?
 - How familiar are you with strength exercise?
 - How familiar are you with HIIT?
 - How familiar are you with bodyweight exercises?
 - What current barriers are in place if you do not currently exercise?
 - How easy is it to find time to exercise?
3. What is your current teaching position?
4. What current things does your school or previous schools do to encourage exercise for teachers?
5. What have you experienced in schools regarding facilitating wellness in general?
 - Stress management
 - Teacher efficacy
6. What is your experience with schools facilitating exercise in general?
7. Why did you volunteer to participate in this study?
8. What role should school leaders take in promoting exercise?

Mid-point Survey (Anonymous):

1. How are you feeling about the exercise program?
 - Are you able to work it into your schedule?
 - Are there any challenges?
2. Can you tell me about your feelings towards your current teaching position?
 - Do you feel that you have the ability to complete daily tasks?
 - How do you feel you handle stress at work?
3. In comparison to the beginning of the study, do you find anything more or less difficult to complete in your daily tasks at work?
4. Do you notice anything different about your mood or energy level now compared to before you started?
5. What role should school leaders take in promoting exercise?

Final Interview:

Same as previous questions.

1. How are you feeling about the exercise program?
 - Are you able to work it into your schedule?
 - Are there any challenges?
2. After participating in this program, how do you feel about your ability to handle the stress of teaching?
3. Is it more or less difficult to complete daily tasks at work?

4. Do you plan on continuing to exercise after this study? Why or why not? If so, in what way?
5. Would you recommend this to other teachers?
6. What could your school do to facilitate a similar program during the school day?
7. How do you feel about working out at school?
-Would it be possible long-term?
8. What role should school leaders take in promoting exercise?