

OLDER ADULTS, PERSEVERANCE STRATEGIES, AND SERIOUS LEISURE
ACTIVITIES: A QUALITATIVE STUDY

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Abstract

Participation in serious leisure is shown to promote overall healthy aging. One quality of serious leisure is participants' ability to persevere when facing obstacles to participation. There is limited research on perseverance strategies within the domain of serious leisure, particularly in an aging context. This study aimed to explore perseverance strategies used by older adults while they engaged in endurance sports as a form of serious leisure. Two overarching research questions were presented: What perseverance strategies were used, and when were these strategies used? This study used qualitative description methodology with a phenomenological approach. Data were collected through semi-structured interviews and underwent thematic analysis. There were 15 participants (average age 67 years) who were active in running, cycling, swimming, kayaking, and triathlons. Findings demonstrated that different perseverance strategies were used by participants as they went through the four action phases of Gollwitzer (1990)'s goal pursuit process.

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CHAPTER ONE - INTRODUCTION

Background

Serious leisure is defined as a systematic pursuit of an amateur, hobbyist or volunteer activity. Older adults who engage in serious leisure can experience potential health and wellness benefits associated with their chosen activity. Engagement with serious leisure requires using perseverance strategies to negotiate constraints that may be encountered while pursuing serious leisure goals. Perseverance strategies have been explored within the field of entrepreneurship studies; however, there has been limited research on perseverance strategies within the domain of serious leisure. The aim of this study was to explore perseverance strategies used by older adults while they were engaged in endurance sports as a form of serious leisure. Two research questions were presented; what perseverance strategies were used, and when were these strategies used? Research was based on a qualitative descriptive methodology with a phenomenological approach. Data was collected through semi-structured interviews and underwent thematic analysis. Fifteen adults participated in this study with a mean age of 67. Serious leisure activities included distance running and cycling, swimming, kayaking, and triathlons. The study found that a variety of perseverance strategies were used by older adults throughout the different stages of their pursuit of their endurance activities.

Successful aging is a complex and multifaceted concept and various definitions of successful aging exist. One popular definition of successful aging is from Rowe and Kahn (1997). The authors definition of successful aging including three main components: the absence of disease and disability, high cognitive and physical functional capacity, and active engagement with life. They further said that successful aging is a multi-dimensional construct, whereby older

individuals engaged in meaningful activities avoid disease and maintain their physical and cognitive functions (Rowe & Kahn, 1998).

Over the past three decades leisure studies have become a subject of interest by researchers as leisure was recognized as being meaningful for individuals to engage in during their free time. In the early 1990s, Stebbins (1992) introduced the concept of serious leisure, which he defined as the systematic pursuit of an amateur, hobbyist, or voluntary activity that is sufficiently substantial and interesting for a participant to find a career there in the acquisition and expression of its special skills and knowledge. To further define serious leisure Stebbins (2001) set out the six qualities of serious leisure involvement: perseverance, significant effort, career development, durable benefits, strong identification, and unique ethos.

Individuals who demonstrated the quality of perseverance showed persistence in goal-directed behavior over time, persevering through obstacles such as fatigue, anxiety, injury, and freezing cold. Individuals who demonstrated the quality of significant effort, exerted significant personal effort to obtain and develop special knowledge, skills, and abilities. Career development quality was demonstrated by individuals who developed a personal course in a leisure role shaped by its own special contingencies, turning points, and stages of achievement and involvement. The quality of durable benefits included both personal and social benefits. Personal benefits included enrichment, self-actualization, self-expression, enhanced self-image, self-gratification, re-creation, and financial return. Social benefits included a sense of group attraction, group accomplishment, and group maintenance. Individual with the quality of strong identification demonstrated identification with a chosen pursuit, while individuals with the quality of unique ethos embraced distinguishing ideals, values, sentiments, or guiding beliefs that were shared by members of the serious leisure social world.

Eventually Stebbins (2007), developed the serious leisure perspective, which was his framework that synthesized the three main forms of leisure, known as project-based leisure, casual leisure, and serious leisure. Project-based leisure was defined as short-term, reasonably complicated, one-shot or occasional, though infrequent, creative undertaking carried out in free time, or time free of disagreeable obligations. Casual leisure was defined as immediate, intrinsic rewarding, relative short-term pleasurable activity that required little or no special training to enjoy it.

Within serious leisure the amateur type of serious leisure was further divided into sub-types of, art, science, entertainment, and sports. Within the category of sports, endurance sports exhibit all six characteristics of serious leisure especially perseverance, significant effort, and development of skills and knowledge over time. Gould, Moore, McGuire, and Stebbins (2008) claimed that this broad framework of serious leisure lacked measurement which hampered the understanding of when serious leisure may occur and the ability to effectively distinguish serious leisure from other forms of leisure. They developed operation definitions of the six qualities of serious leisure which included eighteen dimensions to form the Serious Leisure Inventory and Measurement (SLIM) scale. They tested this scale and found strong support for its reliability and validity as a comprehensive assessment of the eighteen dimensions.

Using the SLIM scale, Brown, McGuire, and Voelkl (2008) looked at the link between successful aging and serious leisure. Themes for successful aging were lifelong learning, personal growth, keeping active, and involvement with others. They studied older adults between the age of 60 and 82 years old who participated in shag dancing and found that the successful aging themes matched up with the six serious leisure qualities.

Heo and Lee (2010) investigated the involvement of older adults in the Senior Games. Participants' age ranged between 50 and 95, with a mean age of 68 years old. Approximately 94% were Caucasian, 60% were retired, 78% were married, and 48% had more than a college education. The participants claimed that their involvement constituted serious leisure as they had been involved in their sport for six years and spent more than an hour training each day of the week. The study found that the participants serious leisure involvement was positively associated with their life satisfaction and their physical and mental health.

Heo, Stebbins, Kim, and Lee (2013) continued to study the relationships among serious leisure, life satisfaction, and health. They studied older adults who participated in two Senior Game events in 2008. Participants' age ranged between 50 and 95, with a mean age of 68 years old. Approximately 65% were males, 66% were retired, and 43% had had more than a college education. Serious leisure was measured using the SLIM scale. Cluster analysis was used to create three groups, high/medium/and low involvement groups. The study found that high serious leisure involvement was positively associated with life satisfaction, physical health, and mental health.

Successful aging and serious leisure are complex and multifaced concept. Lee and Payne (2015) used physical, cognitive, and social stimulation as factors to describe types of serious leisure activities by asking participants to rate their own perceptions of their selected serious leisure activities to explore the relationship between different types of serious leisure and successful aging. Participants' age ranged between 60 and 96, with a mean age of 73 years old. Approximately 68% of the participants were female, and 49% had bachelor's degrees or higher. Serious leisure was assessed using the SLIM scale. The study found that there was no significant difference between different types of serious leisure activities and successful aging.

Yang, Kim, and Heo (2019) explored the relationship between different levels of serious leisure qualities and well-being among older Korean adults who were members of sports clubs. Participants had a mean age of 73 years old, 95% were married, and 65% were female. The study found that individuals that expressed high levels of serious leisure qualities reported better life satisfaction, happiness, and health perceptions.

In summary, studies demonstrated a positive relationship between serious leisure participation by older adults and healthy aging. Studies also demonstrated that to participate in serious leisure participants tend to demonstrate perseverance with the activity by overcoming difficulties and spending significant time, effort, and energy on their leisure activities (Lee & Payne, 2015). These studies did not define the nature of the obstacles or the strategies the participants used to overcome these obstacles.

Obstacles were originally thought of as barriers between an individual's intention or activity preference and participation. According to Crawford and Godbey (1987), barriers vary in strength over time and there is usually more than one barrier present at a given time. The authors developed the conceptual model of constraints to participate in leisure as opposed to the concept of barriers. Their model included three types of constraints. Intrapersonal constraints where individual psychological states and attributes (e.g., stress, depression, and anxiety) interact with leisure preferences rather than intervene between preferences and participation. Interpersonal constraints which result from interpersonal interaction or relationships between an individuals' characteristics. Structural constraints which intervene between leisure preferences and participation such as family life-cycle stage or family financial resources.

Jackson, Crawford, and Godbey (1993) stated that the three types of constraint constructs are interrelated and may affect an individual's preference for a leisure activity and their participation in that activity. Based on the competing views of how leisure constraints, motivation, and negotiation are interconnected, and influence participation, Hubbard and Mannell (2001) tested four leisure constraint negotiation models on employees enjoying leisure-time physical activities. They concluded that the perceived-constraint-reduction model had the best fit to the data. The perceived-constraint-reduction model proposed that individuals with enough negotiation resources will perceive themselves as less constrained and more motivated to participate when facing constraints. Loucks-Atkinson and Mannell (2007) expanded the model and concluded that the greater an individual's confidence in the successful use of negotiation resources to cope with constraints, the greater the motivation and effort to negotiate and the higher the level of participation.

Lyu and Oh (2015) contended that not all levels of leisure participation automatically produced beneficial outcomes. They looked at Wisconsin fishermen to examine how they realized a variety of leisure benefits by using negotiation strategies to attenuate leisure constraints. Constraints were classified as; intrinsic, interactional, regulatory, and structural. Negotiation strategies were broken down into; cognitive, financial, time management, interpersonal, and skill development strategies. The study determined that the systematic process of benefit realization could be better understood by combining the frameworks of serious leisure and constraint negotiation. Their study also demonstrated that the two key dimensions of serious leisure, the need to persevere and display significant personal effort, could be successfully replaced with the adaption of negotiation strategies.

Within leisure studies, perseverance is a quality of serious leisure and a behaviour that facilitates constraint negotiation. In 2012, van Gelderen introduced the concept of perseverance strategies within entrepreneur studies. The background material for van Gelderen's (2012) research was the life of James Dyson who persevered over many years as he developed the Dyson vacuum cleaner. The author provided evidence of perseverance strategies within the specific entrepreneur context and suggested that further research in other domains would be a valid approach to expand the concept. Researchers have not looked at the concept of perseverance strategies within the domain of serious leisure.

Another quality of individuals involved in serious leisure is the career pursuit of their leisure goals. Goal pursuit process theory (Gollwitzer, 1990) is one way to explain career pursuit as it focuses on how individuals process through four distinct, temporally defined goal pursuit phases. In each of these phases, individuals must employ perseverance strategies to overcome obstacles and constraints. During the pre-actional phase, goal setting is an important activity. Goal setting theory (Locke & Latham, 1990) focuses on how to set effective goals which is a key component in serious leisure activities. As individuals enter the actional phase of the goal pursuit process, self-regulation theories (McCormick, Meijen, Anstiss, & Jones, 2019, Zimmerman, 2000) become a critical ability to overcome constraints. These theories focus on the individual's cognitive, emotional, and behavioural strategies in response to constraints. By combining these three theories, it is hoped to develop a better understanding of when and what perseverance strategies older adults employ while engaging in serious leisure activities.

Study Rationale, Purpose, and Research Questions

Past research has recognized the benefits of participating in serious leisure in terms of healthy aging for older adults, the six qualities inherent in individuals involved in serious leisure and the constraint negotiation process. There has been little focus on perseverance and perseverance strategies used by older adults as they engage in endurance sports. With this knowledge gaps in mind, the current study aimed to identifying what perseverance strategies older adults used to overcome obstacles while participating in endurance sports and when they used these strategies. This study addresses the following research questions:

- 1) *What* perseverance strategies do older adults use while engaged in the serious leisure sub-type category of endurance sports?
- 2) *When* do older adults use perseverance strategies while they are engaged in the serious leisure sub-type category of endurance sports?

To facilitate the answers to these questions, the following chapter describes four relevant theoretical frameworks and reviews the current literature around perseverance strategies.

CHAPTER TWO – LITERATURE REVIEW

Chapter Introduction

The chapter begins with outlining four theoretical frameworks which underly the study: the goal pursuit process, goal setting theory, self-regulation, and self-efficacy beliefs. Next the literature review is presented within the four phases of the goal pursuit process. In the pre-decisional phase existing research on motivation, self-efficacy beliefs and initial goal setting is reviewed. Existing research on goal setting and goal planning are reviewed in the pre-actional phase. In the action phase research articles on self-regulation are reviewed including cognitive, behavioural, and emotional self-regulation articles. Finally in the goal attainment and post-actional phase research articles on goal re-evaluation and withdrawal are reviewed.

Theoretical Framework

Theoretical frameworks are used to guide the research. In the current study, the following four theoretical frameworks are used to inform the research approach: goal pursuit process, goal setting, self-regulation, and self-efficacy beliefs. Each of these frameworks are described below.

Goal Pursuit Process

For the current study, the goal pursuit process provides a framework to begin to answer the research question of when do older adults use perseverance strategies as they engage in endurance sports. The understanding of the goal pursuit process has evolved over time. Lewin, Dembo, Festinger, and Sears (1944) differentiated this process into two phases, goal setting and goal striving. Next, Little (1983) claimed that personal goals progressed through four stages: inception, planning, action, and termination. Most recently, Gollwitzer (1990) developed the

Rubicon model of action planning, where individuals progress through four distinct, temporally defined goal pursuit phases.

As outlined by Gollwitzer (1990), once individuals decide to overcome their motivational and self-efficacy constraints, they need to decide how, when, and where to pursue their activity goals. The pre-decisional phase is where individuals consider all options and evaluate their wishes and desires. Option choice is centered around feasibility and desirability. Feasibility reflects if they believe that they can obtain their outcome goals through their own actions and whether the situational context is facilitating. Desirability reflects the expected value of pleasantness of doing the activity. The pre-actional phase is where individuals decide the how, when, and where they will pursue a goal. This is where individuals commit themselves to an implementation course of action and as a result form a behavioral intention to pursue a goal. The action phase is where individuals enact their plans and engage in activities aimed to attain their desired end state which leads to their concrete outcome. Whether a goal intention leads to the initiation of relevant actions depends on the strength and how favorable the situation is for initiating the goal intention. Efforts to pursue a goal are related to the strength of the goal intention. The goal attainment and post-actional phase is where individuals re-evaluate their goal, their related actions, and determine future goal pursuits. Gollwitzer (1990) indicated that the process of goal pursuit is not always linear and can be cyclical as goals can be adjusted rather than individuals not being able to attain them.

Goal Setting Theory

To pursue one's goals, individuals must first establish their goals. For the current study, understanding how the participants establish their goals and the characteristics of these goals

provides an understanding of their commitment to pursuing these goals. The pre-actional phase is where individuals set their goals. Locke and Latham's (1990) goal setting theory is based on two cognitive determinants of behaviour, which are one's values and one's intentions. These help define a goal as what an individual is consciously trying to do, provided that an individual was committed to a goal, had the required ability, and did not have conflicting goals. The authors stated that setting specific goals lead to a higher performance than general goals. High goals were defined as something that was moderately difficult, but attainable. Four mechanisms were identified as mediators between goals and performance (Locke & Latham, 2002). Difficult but attainable goals lead to greater effort and performance. Goals direct attention, effort, and action towards goal-relevant actions. Goals motivate one to use existing abilities and motivate them to search for new knowledge. Goals, in conjunction with self-efficacy beliefs, mediate the effects of other potentially motivating variables such as personal traits, feedback, decision making, and monetary incentives.

In a review of goal setting theory, Lunenburg (2011) determined that effective goals meet specific criteria. Goals need to be specific and give a focused target. Goals must be difficult but attainable. Goals must be accepted by the individual pursuing the goals. Feedback must be considered on how individuals are doing. Goals are effective when they are used to evaluate performance. Deadlines improve the effectiveness of goals. A learning goal orientation leads to higher performance than a performance goal orientation, and group goal setting is as impactful as individual goal setting.

Goal setting theory is an open theory where new elements are added as new discoveries are made. An individual's goal choice is important as individuals create discrepancies between their past performance and their future goal. Donovan and Williams (2003) determined that large

negative goal-performance discrepancies resulted in athletes lowering their seasonal goals. Specific, difficult goals do not always lead to better performance than simply urging people to do their best (Seijts & Latham, 2001). Focusing on reaching a goal versus acquiring the skill to reach a goal can be counterproductive and framing a goal as a gain (a new challenge) maintained or increased performance while framing an activity as a loss (threat) decreased performance, (Drach-Zahary & Erez, 2002).

Self-Regulation

Goals are a key element in self-regulation. Within endurance sports, the psychobiological model of self-regulation stipulates that any factor that reduces perception of effort or increases potential motivation should enhance performance (McCormick, Meijen, Anstiss, & Jones 2019). Self-regulatory theories are based on the belief that humans have complex goal-directed systems that self-regulate their actions to achieve their goals (Vancouver & Day, 2005). Self-regulation underpins actions, planning, learning and development in endurance performance. Using self-regulation, individuals can monitor and adjust their goal-directed behavior in different situations and contexts via self-oriented feedback loops.

Self-regulation is a process where individuals alter their own resources or inner states in a goal directed behavior. Zimmerman (2000) contends that self-regulation occurs over three phases: the forethought phase, the performance phase, and the self-reflection phase. The forethought phase involves processes and beliefs that take place before an activity takes place. Tasks are analyzed in terms of goal setting and strategic planning. Self-motivation beliefs are also established, including self-efficacy beliefs, outcome expectations, and intrinsic interest in pursuing the activity. The performance phase represents the process that happens during an

activity. This includes deploying methods and strategies to overcome obstacles. The self-reflection phase represents the processes that occur after behavioural implementation. This involves self-judgement where individuals compare themselves against standards such as their previous performances or someone else's performance, and self-reaction where the level of self-satisfaction influences an individual's future effort. These three phases are cyclical. Like the goal pursuit process, self-regulation involves a process that for the current study answers the question of when do participants employ perseverance strategies. In addition, the self-regulation actions demonstrate what perseverance strategies participants used while pursuing their goals.

Self-Efficacy Beliefs

Self-efficacy beliefs influence the amount of effort an individual is willing to expend and their perseverance when faced with difficulties and setbacks (Bandura, 1997). Self-efficacy beliefs fit into Zimmerman's (2000) three phases of self-regulation. In the forethought phase, self-efficacy beliefs are linked to the process of goal setting and goal pursuit (Bandura 1997, Locke & Latham, 1985). Individuals with a high level of self-efficacy set challenging goals and continue striving towards these goals despite setbacks (McCormick et al., 2019). In the performance phase, these athletes assess their performance in relation to their performance goal. High self-efficacy athletes will respond to this situation by increasing their levels of effort. In the self-reflecting phase, endurance athletes with low levels of self-efficacy attribute poor performance to internal and stable factors such as their lack of ability, while athletes with high levels of self-efficacy attribute poor performance to unstable factors such as the weather and their competitors' abilities (Zimmerman, 2000). In the self-reflection phase, individuals with either high or low self-efficacy contribute successful performance to factors under their control, their effort level, and their ability. Individuals with low self-efficacy contribute poor

performance to internal and stable factors such as their lack of ability, while high self-efficacy individuals contribute poor performance to unstable factors such as their own effort and the weather (Zimmerman, 2000).

In the current study, the participants' ability to develop high levels of self-efficacy beliefs is a key factor in their ability to exert increasing levels of effort and perseverance when facing obstacles and constraints. Understanding how these self-efficacy beliefs are developed and when they are developed provides a footing to understanding what perseverance strategies the participants use in their pursuit of their goals. The aforementioned theories provide a framework and direction to facilitate the current study's aim of exploring what perseverance strategies older adults use and when they use them while participating in serious leisure activities.

Literature Review

At the outset of the literature review, it is important to acknowledge the current study's participant eligibility criteria. For the current study, the broad category of serious leisure involvement was limited to participation in endurance sports. As a result, the literature review was limited to research on athletes only engaged in endurance sports. The second eligibility criteria were that the participants had to be at least 55 years old at the time of the study. Age in the current study was defined as a participants' chronological age, and notwithstanding the participants' functional age, the participants were classified as older adults. This eligibility criteria limited the relevant research articles available. Further, combining the criteria of endurance sports and older adults with perseverance strategies resulted in a severe paucity of studies in this topic area, which also highlights the current gap in research. As such, a portion of research articles included in this literature review focus on younger adults engaged in endurance

sports. Although the current study was focused on older adults, studies representing earlier parts of the life span can provide examples of perseverance strategies that may help define strategies that could be used by older adults and when the strategies are used.

Having established the theoretical footings of the current study, the literature review follows the goal pursuit process focusing on perseverance strategies individuals employ to overcome obstacles in each of the four phases.

Goal Pursuit Process

Gollwitzer (1990) goal pursuit process involves four distinct, temporally defined goal pursuit phases. These phases include the pre-decisional phase, the pre-actional phase, the action phase, and the goal attainment and post-actional phase. Each of these phases include sub-components. The literature review follows these four phases, including sub-component descriptions.

Pre-Decisional Phase (Motivation, Self-Efficacy, and Initial Goal Setting)

In the pre-decisional phase individuals establish their motivation around what activities they want to become involved in. They also establish their self-efficacy beliefs in the future ability to participate in these activities. Ogles and Masters (2000) studied the difference in motivation to participate in marathons between older and younger runners. Their study compared 104 male runners over the age of 50 to 110 male runners between the age of 20 and 28. Motivation was assessed using the Motivation of Marathoners Scale (MOMS) (Masters, Ogles, & Jolton, 1993). It was found that older runners endorsed different reasons for training and running a marathon compared to younger runners. Older runners endorsed developing and maintaining a level of fitness and health while younger runners endorsed personal goal

achievement. Older runners were also motivated by life meaning (purpose of life) and affiliation with other runners.

As a further study, Ogles and Masters (2003) performed a cluster analysis on 1,519 marathon runners between the age of 15 and 79 to determine a typology of their motivations using MOMS. The analysis produced five different clusters. Running Enthusiasts were motivated by health orientation, self-esteem, and personal goal achievement. Lifestyle Managers were motivated to improve their physical and psychological well-being. Personal Goal Achievers were motivated to improve their own performance in relation to past performances. Personal Accomplishers were motivated by health orientation, personal achievement, and self-esteem. Competitive Achievers were motivated by personal goal achievement, self-esteem, and health. Overall, the study demonstrated that marathon runners are a heterogeneous group and have different reasons for running.

In a review of motivations (Nicholls, 1984) states that individual's primary motivations are to demonstrate high levels of confidence. Individuals can be task-oriented where their motivations are based on developing new skills and improving their level of abilities. Individuals can also be ego-oriented where their motivations are based on demonstrating superior ability as compared to relevant others. Steinberg, Grieve, and Glass (2001) examined achievement motivation across the lifespan. Their study looked at three separate groups of athletes: NCAA Division 1 athletes with a mean age of 20, competitive recreational athletes with a mean age of 37, and National Senior Games athletes with a mean age of 68. All athletes were given the Task Ego Orientation in Sport Questionnaire (TEOSQ). They found that there were no differences in task-orientation across all age groups. Athletes older than 50 demonstrated lower ego-orientation motivation.

LaChausee (2006) also looked at the level of competition on motivation. He studied 1,239 cyclists with a mean age of 37. Motivation was assessed by MOMS. He found that competitive cyclists endorsed goal achievement motivation while non-competitive cyclists were motivated by weight concerns and social affiliations.

Hodge, Allen, and Smellie (2008) examined the collective relationship of achievement motivation oriented and social motivation oriented Masters athletes. Within achievement motivation orientation, individuals were motivated by task goals (improve their ability) or ego-oriented goals (be their best and out-perform others). Socially oriented athletes were motivated by affiliation with and recognition by others. Past research has shown that task-oriented motivation facilitates long-term participation in sports (Duda, 1996), and socially oriented motivation was important for middle age and older adults' participation in sports (Ashford, Biddle, & Goudas, 1993). Hodge et al.'s (2008) research involved 373 athletes competing in the New Zealand 2002 Masters Games. The mean age of the athletes was 48 and ranged from 29 to 77 years of age. The study found that older athletes demonstrated a high level of task-oriented and a low level of ego-oriented motivation and had a strong focus on social affiliation.

Waskiewicz et al. (2019) examined motivations of ultra-marathon runners. The MOMS questionnaire was filled out by 1,539 Polish ultra-marathon runners. Approximately 10% were older than 50. They found that successful runners were motivated by affiliations and life meaning. Weight concerns, personal goal achievement, and self-esteem were limited motivational factors. Leon-Guereno et al. (2021) examined what were the motives for older adult marathon runners. They studied 244 runners all 50 years of age or older. Motivations were assessed using MOMS (Masters, Ogles, & Jolton, 1993). They found that the greatest source of

motivation was the athletes concern on their general health, weight concerns and self-esteem. Personal goal achievement and social motives were lowly ranked.

The pre-decisional phase of the goal pursuit process involves the development of motivation to participate in a chosen activity. The literature review demonstrated that older adults were task-oriented motivated versus ego-oriented motivated. Older athletes were also motivated to develop their fitness and overall well-being and develop social affiliations. Endurance athletes are considered a heterogeneous group in terms of motivation. Participants in the current study participated in a variety of endurance activities. The current study explores what form of motivation enabled participation in their chosen activity.

The pre-decisional phase of goal pursuit process also involves the development of self-efficacy beliefs or “one’s beliefs in their capabilities to organize and execute the course of action required to produce a given attainment” (Bandura, 1997, p. 3). Athletes possess three types of self-efficacy beliefs. Task self-efficacy refers to their perceived capabilities for certain sports performance. Self-regulatory efficacy refers to their belief in their capacity to control their emotions, thoughts, and behaviours to complete a task. Coping self-efficacy refers to their belief in their own capacity to cope with threats and difficulties (Feltz et al., 2008).

The development of self-efficacy beliefs occurs through a series of cognitive processes involving the selection, interpretation, and integration of five sources of efficacy information: past experiences, vicarious influences, verbal persuasion, physiological states, and affective states (Bandura, 1997; Feltz et al., 2008). These five sources of information are involved in three levels of analysis: task requirements, interpretation of causes of previous performance, and

assessment of availability of specific resources. Determining the task difficulty is a key factor for endurance athletes during the pre-decisional phase of the goal pursuit process.

Anstiss, Meijen, and Marcora (2020) studied 12 experienced competitive endurance athletes to determine the sources for their self-efficacy beliefs. The athletes had a mean age of 41 years and were involved in distance running, triathlons, swimming, and cycling. They found that endurance athletes draw on several sources in the formation and maintenance of their self-efficacy beliefs. Past performance experiences were identified as a key source of self-efficacy, including the experiences of challenge and adversity. An athlete's assessment of their physiological state to perform a task was also an important source of self-efficacy beliefs. Their assessment included their current state of strength, arousal, pain, fitness, and fatigue. Social support and verbal encouragement were also demonstrated to be information sources that helped develop their self-efficacy.

In summary, during the pre-decisional phase of an athlete's pursuit of their endurance goals, they develop their motivation and self-efficacy beliefs to participate in their chosen activity. Endurance athletes draw on multiple sources of motivation and self-efficacy. Motivating factors include a desire to gain and maintain health and well-being, develop new challenging skills and abilities, and develop social affiliations and recognitions. Endurance athletes developed their self-efficacy through interpretation and analysis of information from their past experiences, vicarious influences, verbal persuasion, physiological states, and affective states. The current study explores how older endurance athletes developed their motivation and self-efficacy to participate in their chosen activities during the pre-decisional phase of goal pursuit prior to advancing to the pre-actional phase.

Pre-Actional Phase (Goal Setting, Goal Planning)

In the pre-actional phase, individuals decide how, when, and where they will pursue their activity goals. During this phase, athletes first set effective goals. Goal setting theory was developed by Locke and Latham (2002). The basic tenant of the theory was that specific, difficult but attainable goals lead to a higher level of performance. In situations where the goal setter was committed to the goal and had the ability, goal performance increases as goal difficulty increases. As an example, engaging in endurance sports represents a difficult goal for most individuals, and an even more difficult goal for older adults who, through the aging process, generally lose some of their physical capacities. As such, setting effective goals is important for older athletes engaged in endurance sports.

Goal setting theory is recognized as an open theory and new elements are added over time. Locke and Latham (2006) reviewed over 35 years of research on goal theory and concluded that success in goal performance depended on recognizing mediators and moderators. With respect to mediators, difficult but attainable goals lead to greater effort and perseverance than moderately difficult, or easy goals, and goals direct attention, effort, and action, towards goal-relevant action. Goal performance depends on having the requisite task knowledge and skills. Goals motivated one to use existing abilities, including task knowledge and awareness. With respect to moderators, it was necessary to have a feedback system to track progress. An individuals' level of commitment to a goal was moderated by their sense of self-efficacy and the relative importance of the goal. The degree of task complexity affected people's ability to acquire task knowledge and perform.

Effective goal setting follows set principles (Weinberg, 2013). For instance, athletes must set specific, measurable goals over both the short and long-term. These goals must be realistic but challenging and moderately difficult. Athletes must write down these goals and keep them in an easy place to see. Athletes must have both practice and competition goals. For competition, the goals must be process oriented, and focused on doing things that will help performance. The athletes must also acknowledge that establishing goals is only a starting point. These goals must be evaluated periodically and reset if necessary. Goal setting works if there is timely feedback showing performance and progress towards the goal (i.e., secondary appraisal). However, before feedback can be given, performance must be measured.

The second activity endurance athletes must undertake in the pre-actional phase of the goal pursuit process is goal planning. Athletes need to make realistic and achievable goal plans that incorporate learning strategies. These plans are based on both the goal setting principles and an assessment of the athlete's needs and abilities. Athletes need to develop both training and competition plans. Plans need to be number oriented in terms of frequency, duration, and intensity. Strategies to develop and then follow goal plans are important strategies to ensure athletes continue to participate in their activities.

Goal setting has been established as an extremely powerful technique for enhancing athletic performance (Weinberg, 2013). However, the literature around performance and the degree of goal attainment is mixed. One factor that determine the effectiveness of goals are the intention-behavioral gap. A goal that is established and planned for does not mean that the goal will be attained (Wolff, Bieleke, & Schuler, 2019). This phenomenon reflects the intention-behavior gap (Sheeran, 2002).

Milne, Orbell, and Sheeran (2002) looked at the effects of combining motivation and implementation intentions to promote exercise participation. Behavioural intentions were developed through determining the costs and benefits of performing a behaviour (motivation), followed by the development of strategies and plans to ensure that the intention would be enacted (implementation intentions). The study involved undergraduate students (mean age of 20, 73% female) who were subject to manipulation of motivation variables and the implementation intentions of where and when they would participate in 20-minute exercise sessions. Interventions with just motivation, did not affect subsequent exercise behaviour. However, motivation combined with implementation intentions produced a dramatic increase in exercise behaviour. Although this study did not involve older adults participating in endurance sports, the conclusion suggests a need for future research to determine if combining implementation intentions with motivation is an effective strategy for older athletes.

In summary, during the pre-actional phase of goal pursuit, athletes use perseverance strategies to set goals and goal plans including implementation intentions. Having taken these steps athletes then enter the action phase of goal pursuit. Perseverance strategies during the action phase focus on self-regulation and are discussed below.

Action Phase (Self-Regulation)

In the action phase, individuals enact their plans and engage in their chosen activities. During this phase, athletes directly face obstacles and constraints they must overcome to attain their endurance goals. Self-regulation is an essential component of perseverance in this phase. Self-regulation involves process that enable individuals to control their thoughts (cognitive self-regulation), actions (behavioural self-regulation), and feelings (emotional self-regulation)

(Baumeister & Voks, 2004). Each of these key aspects of self-regulation are detailed in the next three sections, including sub-sections that expand further upon each component of self-regulation based on the extant literature and in the context of the current study.

Cognitive Self-Regulation

Cognitive self-regulation involves the development of and control of thoughts that affect one's use of cognitive abilities to integrate learning processes to support the pursuit of personal goals. Cognitive self-regulation differs from behavioral self-regulation that focuses on controlling physical actions and emotional self-regulation that focuses on controlling when and how individuals experience emotions. The following section describes four cognitive self-regulation strategies: implementation intentions, types of self-talk, metacognition, and mental/psychological skills and training, that facilitate athletes reaching their goals.

Implementation Intentions. Implementation intentions is a cognitive self-regulatory strategy that helps people attain their goals across a variety of domains (Gollwitzer, 2014; Gollwitzer & Sheeran, 2006). Sheeran and Webb (2016) compared the concept of behavioural intentions (what I intend to do) versus implementation intentions (I intend to do "X" in situation "Y"). They stated that implementation intentions can help deal with the intention-behavior gap by increasing the likelihood of performing a behaviour and the speed of the action taken. This occurs because the process of specifying where and when one will perform a behaviour means that the environmental cues one has specified will elicit the behaviour once the cues are encountered.

Research on implementation intentions has focused on laboratory experiments. In a study by Webb and Sheeran (2007), undergraduate students were given a word recognition task.

Participants who used implementation intentions were shown to be more likely to attain their goal. The authors concluded that implementation intentions benefited performance because control of behaviour was delegated to specific situational cues that initiate action automatically. In a related study, Doerflinger, Martiny-Huenger, and Gollwitzer (2017) studied implementation intentions where participants performed the task of distributing money to two separate divisions of a company. The study demonstrated that planning to deliberate at a critical point in time by forming implementation intentions, reduced the tendency to stick to a failing course of action. The authors contended that plans to deliberate could increase the likelihood of effective processing of new information around performing a task.

In terms of connecting implementation intentions, as a cognitive self-regulatory strategy, to the current study that is focused on endurance sport goals, it is important to note that Bieleke, Wolff, Englert, and Gollwitzer (2021) stated that it was unclear to what extent implementation intentions improved performance in a sport-related domain other than physical activity. They conducted a scoping review to determine empirical evidence that implementation intentions improve sport related performance. Their review identified ten articles of which half focused on endurance performance and half focused on non-endurance sports. Bieleke et al.'s (2021) review did not support the assumption that implementation intentions improved endurance performance. It was noted that the small sample size and the specific demands of the tasks could have affected the results.

In all three articles described above, participants were younger adults. Endurance activities were muscular endurance tasks in laboratory settings. The articles indicated the potential for using implementation intentions as an effective cognitive self-regulating strategy. In the current study, the use of implementation intentions by older endurance athletes was explored.

Self-Talk. Another dimension of cognitive self-regulation is self-talk. Research on self-talk evolved into dividing self-talk into motivational self-talk and instructional self-talk. Motivational self-talk focused on psyching up, maximizing effort, building confidence, and creating positive moods (I will improve my performance, I will push harder to improve my performance). Instructional self-talk focused on directing attention and performing specific techniques (I will control the technique; I will focus on pacing).

Hatzigeorgiadis, Zourbanos, Galanis, and Theodorakis (2011) conducted a meta-analysis on thirty-two studies that used self-talk strategies for enhancing performance. They found that self-talk interventions were more effective for tasks involving relatively fine motor skills (golf, basketball) compared to relatively gross motor skills (cycling, long distance running). Self-talk interventions were also more effective for novel tasks compared to well-learned tasks, and instructional self-talk was more effective for activities involving fine motor skills than motivational self-talk.

Barwood, Corbett, Wagstaff, McVeigh, and Thelwell (2015) examined the effect of a motivational self-talk intervention on the performance on 10-kilometer cycling time trials. There were 14 male participants, aged 19, who were recreationally active in non-cycling exercise. The intervention involved a one-hour training session on motivational self-talk. The study demonstrated that motivational self-talk significantly improved cycling performance. Both above studies demonstrated the value of using self-talk strategies, however, the studies involved younger adults, while the current study focuses on older adults.

Dolan, Houston, and Martin (2011) administered an online survey to 401 triathletes that included exploring their mental preparation before racing. Participants' age ranged between 19 to

71 years with a mean age of 37 years. The study determined that the most common used mental preparation strategy was self-talk as opposed to visualization and relaxation, for all ages.

Motivational self-talk is a cognitive strategy that serves multiple functions during an ultramarathon. McCormick, Meijen, and Marcora (2017) examined the effects of a motivational self-talk intervention for 30 endurance athletes completing a 60-mile overnight ultramarathon. Mean age of the participants was 39 years of age. The study did not show performance benefits from the self-talk intervention. The authors contributed their results to having a small sample size, injuries, and navigation errors during the race. However, during follow-up interviews, participants indicated that they continued to use self-talk to cope with stressors they encountered during training and racing events.

De Matos et al. (2021) tested experienced amateur triathletes over a 21-day period, comparing the effects of an instructional and a motivational self-talk intervention on swimming endurance performance. There were 21 participants with an age range between 21 to 47 and a mean age of 33 years old. The study concluded that motivational self-talk increased an athletes' outcome expectations, which lead to higher potential motivation change in effort, and improved endurance performance versus instructional self-talk.

These studies demonstrate that self-talk is an important cognitive strategy to use while participating in endurance activities. However, it must be acknowledged that there were a limited number of studies, and the participants ages, although ranged up to 71 years old, the mean age of the participants was less than 40 years old. The current study explores if older athletes use the strategy of motivational and instructional self-talk during their endurance activities.

Metacognitive Processes. Another aspect of cognitive self-regulation is the metacognitive process. Metacognition has been defined as a sub-process of self-regulation (Tarricone, 2011). Metacognition is an individual's knowledge and cognition about cognitive phenomena (Flavell, 1979). Metacognition reflects our understanding of what we know and how we use that knowledge to regulate our behaviour. Metacognition acts at the meta-level and relates to cognitions through the monitoring and control functions (Efklides, 2006). Knowledge of cognition includes knowledge of one's cognitive abilities, effective cognitive strategies, and knowledge of task demands. Regulation of cognition includes metacognitive skills such as planning, monitoring, and metacognitive experiences that are based on the monitoring process and facilitate concurrent monitoring during task performance. Metacognitive experiences include metacognitive feelings, and metacognitive judgements. Metacognition has been determined to be a distinguishing feature of expert performance in the sports domain (MacIntyre, Igou, Campbell, Moran & Matthews, 2014).

Nietfeld (2003) studied 45 middle distance runners with a mean age of 20 years to determine what competitive runners think about during competitions and the relationship between the knowledge of cognition and the regulation of cognition. He found that competitive runners rely on internal focused thoughts (pace, pain, and race tactics) while running. The study also demonstrated a link between the relative level at which runners actively strategized about their race and their ability to try out these strategies while running.

Brick, MacIntyre, and Campbell (2015) studied the metacognitive process of 10 elite endurance runners with a mean age of 35 years. They found that runners regulated their cognitions through the metacognitive process of planning before running, monitoring their thoughts during running, and monitored their thought around their overall level of effort. The

study showed that runners used a diverse range of cognitive strategies to control their attentional focus. The study also looked at the runners' metacognitive experiences with respect to metacognitive feelings and metacognitive judgement. The runners demonstrated metacognitive feelings of knowing, task difficulty, confidence, and familiarity. Metacognitive judgement included solution correctness, their capabilities, and their performance. The authors concluded that the metacognitive process may be fundamental to effective cognitive control while running.

Samson, Simpson, Kamphoff, and Langlier (2017) studied metacognitive process using the think-aloud protocol versus retrospective recall to measure athletes' thought process in real time. They studied 10 experienced distance runners with an age range of 29 to 52 years, and a mean age of 41 years. They found that the runners thought about pace and distance strategies, pain and discomfort strategies and environmental influences. The metacognitive strategies were positive self-talk, maintaining and focusing on form, visualization, counting, goal setting, and breathing techniques.

Brick, Campbell, Sheehan, Fitzpatrick, and McIntyre (2020) studied the metacognitive process of less experienced recreational endurance runners. They interviewed 10 runners who started running within the previous 12 months. The mean age of the participants was 41 years, and they ran for two hours per day, three days per week. The authors broke the metacognitive process down into planning before running, monitoring during running, and controlling cognitions during running. The study found that the runners did not have metacognitive strategies in the planning phase. Monitoring strategies during running were strategies around breathing, pain, fatigue, pacing, other's performances, and layout of the racecourse. To control cognitions during the race the runners had metacognitive strategies around pacing and race tactics, goals and sub-goals, and motivational self-talk.

Research on metacognitive strategies used by endurance athletes has focused on middle-aged athletes engaged in distance running. Metacognitive strategies were focused on pacing, pain discomfort, attentional focus, environmental focus, breathing, fatigue, competitor's performances, and the layout of racecourses. Research on metacognitive strategies used by older endurance athletes is lacking. The current study explored what metacognitive strategies were used by older endurance athletes in a wider range of endurance sports.

Mental Skills and Mental Skills Training. Mental skills are an important factor in sports performance. As an approach to understand mental skills within the sports domain, the Ottawa Mental Skills Assessment tool (OMSAT-3) was developed (Durand-Bush, 1995; Durand-Bush, Salmela, & Green-Demurs, 2001). The OMSAT-3 is a questionnaire designed to evaluate individual differences of athletes and other performers that measures 12 psychological or mental components. The 12 components include: foundation mental skills (belief/confidence, commitment, and goal setting), affective mental skills (stress control, fear control, relaxing, and energizing), cognitive mental skills (imagery, mental practice, focus, and refocus), and competitive mental skills (competition planning). The OMSAT-3 sets out the following definitions of the 12 mental skills (Durand-Bush, 1995):

- 1) Goal setting is a process undertaken to establish objectives or goals that provide a direction or a means for accomplishing what you set out to do.
- 2) Belief/confidence is being confident that you can accomplish your goals and overcome difficult situations.
- 3) Commitment provides the intensity and dedication to achieve your desired goals.
- 4) Stress control occurs when you feel nervous, worried, or uncertain about something.

- 5) Relaxation is a skill that allows you to free your muscles of tension, lower your heart rate and control your focus of attention.
- 6) Fear control occurs when you perceive situations to be dangerous, when you face worrisome events or when you lose control of the situation.
- 7) Energizing yourself is the opposite of relaxing. It is a skill that allows you to increase your physiological and mental state in situations where a boost of energy is needed.
- 8) Focusing is the ability to direct and maintain attention on what is required to perform.
- 9) Imagery or visualization is the ability to create images and feel actions in your mind.
- 10) Refocusing is the ability to quickly regain an effective focus in the face of distraction.
- 11) Mental practice is the planned use of your imaging skills. It involves setting aside time and space to rehearse a performance or a segment of a performance in your mind.
- 12) Competition planning is setting time aside to think about and plan things you want to do before, during, and after competitions.

Research has shown that mental or psychological skill training can be effective in enhancing athletes' performance (Williams & Kane, 2001). Research focused on determining if mental skill training improved endurance performance. Thelwell and Greenless (2003) studied four recreational athletes involved in the competitive sport of gymnasium triathlons (rowing, cycling, and running). The athletes were between the age of 19 and 21 years old. They were given mental training packages on goal setting, relaxation, imagery, and self-talk. The purpose of the study was to see the effectiveness of the mental skills training on their performance and identify how mental skill were used before and during competitions. The study found that performance significantly improved for all the athletes because of the training. Outcome, performance, and process goal-setting strategies were used throughout the competitions.

Relaxation strategies were used before the competition to enable the athletes to achieve their optimal arousal zone. Breathing techniques were used near the end of the competition so that the athletes could focus on the process versus the pain. Imagery was used before the competition to prepare the athletes for the pain that would come and what they expected to do about the pain. During the competition, imagery was used to maintain the athletes' relaxed state and focus on their process goals. Motivational self-talk was most frequently used prior to the competition, and instructional self-talk was used at the end to overcome fatigue.

Sheard and Golby (2006) examined the effects of a seven-week psychological or mental skills training program on competitive swimming performance. The study involved 36 national level swimmers with a mean age of 14 years. The mental skill training consisted of goal setting, visualization, relaxation, concentration, and thought stopping. The study found that there was significant performance improvement in three swimming strokes, each over 200-meters (i.e., endurance). There was no significant difference in 50-meter and 100-meter events.

Ironman triathlons require prolonged effort over many hours of training and racing. To be successful, these athletes develop psychological or mental skills. To determine what mental skills ironman athletes used, Grand Maison (2005) studied 10 elite ultra-endurance triathletes. Injuries were common occurrence for these athletes which produced high stress levels when it was unknown if they would fully recover. To deal with this situation, the athletes used the mental skill of stress control by staying positive and taking all steps to speed up their recovery.

Triathletes also entered many competitions where they were not familiar with the racecourse. As a result, before the race, these athletes engaged the mental skill of imagery where they visualized the racecourse to prepare for things that could happen and dealt with the unknowns. These triathletes also had to make decisions under stressful situations during competitions. They used

the mental skill of competition planning to think and plan out things they wanted to do in these situations and rehearsing them in their mind. These athletes also became nervous before and during competitions. To deal with their nerves, they engaged the mental skills practice of relaxation to control their attention to the things that they needed to do to be successful.

Znazen et al. (2012) compared mental skills between 48 sprint and endurance athletes with a mean age of 22. Sprint athletes demonstrated better goal setting, commitment, fear control, imagery, competitive planning, and mental practices than endurance athletes. There was no significant difference between sprint and endurance athletes in self-confidence, stress reactions, mental activation, relaxation, focusing, and refocusing.

This literature review demonstrated that cognitive self-regulatory strategies of implementation intentions, self-talk, metacognition, and mental skills training improved athletes' performance. However, the review showed that there is a gap in the literature with respect to what cognitive self-regulatory strategies older athletes use when they engage in endurance sports. The current study explores what cognitive self-regulatory strategies older athletes used while participating in endurance sports.

Behavioural Self-Regulation

Behavioural self-regulation involves a process that enables individuals to control their physical actions and reactions (Baumeister & Volks, 2004). Endurance sports activities involve long distances and protracted times. Endurance athletes face common demands (McCormick et al., 2019). First, they must deal with exercise related sensations such as muscle pain and cramping. Next, they must deal with having to make difficult pacing decisions in dynamic competitive environments. Third they encounter competitive, organizational, and personal

stressors both before and during competitions. The first two common demands are controlled through behavioural self-regulation while the third involves emotional self-regulation. The two behavioural self-regulation strategies are discussed below.

Pacing. Inherent in endurance events are pain and discomfort when athletes push themselves to their limits. To be able to control their pain and discomfort athletes must decide on a pace that will keep them within pain and discomfort limits. Strategies around the selection of an appropriate pace depends on the type of endurance sport, the duration or distance of the sport, the age of the athlete, the relative performance of the athlete within his/her competitive age bracket, and the athletes' perception of risk in not being able to finish.

Nikolaidis and Knechtle (2017) examined whether differences in pacing strategies existed between older and younger marathon runners of similar race times. They looked at data on 451,637 finishers in the New York City marathon between 2006 and 2016. The runners were grouped into 14 age brackets. They found that there was a larger effect of age on pace in the slower performance groups. They also found that older runners paced more evenly. These same authors then investigated age group marathon runners during the New York City marathon (Nikolaidis & Knechtle, 2018). There were approximately 50,000 runners that competed in five-year age brackets from 20 years to 85 years. The main finding was that both men and women within their age groups reduced their pace during the marathon with a final spurt in the last two kilometers.

Masters athlete categories in the New York City marathon running start at the age of 35 and include 10 age groupings of five-year bands. Breen, Norris, Healy, and Anderson (2018) examined data on 312,762 Masters athletes from the 2015 New York City marathon to determine

pace strategies by gender, age, and performance level. They found that high performing Masters athletes utilized a more controlled pacing strategy independent of their age. They also found that as performance level decreased, pace range showed a linear increase.

Renfree, Crevoi do Carmo, and Martin (2016) studied the influence of performance level, age, and gender on pacing during a 100-kilometer ultramarathon race. They found that the overall pace remained constant across age categories. Within age groups, top competitors displayed slower pacing in the early stages but faster pacing in the later stage of the race. They observed a continuous reduction in pace with age.

McGibbon, Pyne, Shephard, and Thompson (2018) undertook a systematic review of competitive swimmers to determine pacing strategies. The review contained 23 studies on data from pool-based swimming competitions. Pacing varied by event distance and type of stroke. For long distance events over 800 meters, freestyle swimmers displayed a parabolic pacing pattern, fast at the start and finish and slower in the middle. For 400 freestyle events, pace was constant throughout the event until the final couple of laps where swimmers increased their pace.

Pacing in open water swimming was found to be different. Rodriguez, Veiga, Garcia, and Gonzalez-Rave (2021) studied results from swimmers in both a 10-kilometer open water race and the 25-kilometer race at the 2019 World Championships. Mean age of the swimmers was 24 years. They found that the successful 10-kilometer swimmers used a conservative pacing strategy of slightly increasing their pace in the second half of the race. In the 25-kilometer race different pacing profiles emerged. Female swimmers used a constant pace throughout the race while there were no consistent pace patterns for male swimmers.

Pacing in triathlons is quite different as participants are involved in swimming, cycling, and running over the course of the event. Wu et al. (2015) investigated the influence of distance on pacing during the swim, run, and cycle segments of Sprint, Olympic and Half-Ironman distance triathlons. Eight experienced male triathletes participated in the three distance triathlons over a two-month period. For the swim, the athletes demonstrated an even pace over all three distances. For the run, the athletes displayed a negative split (faster in second half) during the Sprint event but had positive splits (slower in second half) for the Olympic and Half-Ironman distances. Cycling represents the longest relative segment in each type of triathlons. Pacing varied over each triathlon distance. However, the authors determined that during the Half-Ironman distance, the athletes rode at a pace of at least 10% over their average pace, 21% of the time, compared to 38% for Olympic distance and 44% for Sprint distance.

Pacing can also be influenced by the athlete's perception of risk of not being able to finish the race. Micklewright et al. (2014) examined the perception of risk and performance with a group of 20 novice cyclists and 32 experienced ultramarathon runners. The cyclists participated in a five-kilometer time trial and the runners participated in a 100-kilometer ultra-race. The authors found that athletes in both events who had a lower perception of risk associated with finishing their event demonstrated a faster pace during the first half of the race.

In summary, high performing runners and older runners used a more controlled and constant pacing strategy, while average performers reduced their pace during the events. Runners with low expectations of risk run faster at the start of the race and slowed down in the final section. For short pool swimming events and mid-distance open water swimming, a constant pace was observed, except for long-distance open water male swimmers. Pacing during triathlons varied as the events changed. Swimming pace was constant for all three triathlon distances.

Running pace and cycling pace differed across the different triathlon distances. The literature review suggests that embracing and training to achieve a constant pace appears to be the pacing strategy to adopt, especially for older athletes. The current study explored what pacing strategies older adults used while they participated in their various endurance activities.

Hydration. The second major decision endurance athletes must make during their activities is when to rehydrate. The regular intake of fluids during prolonged submaximal exercise has been shown to counter the effects of dehydration and enhance performance (Lamb & Brodowicz, 1986). Athletes should begin an endurance event in a state of hydration balance, prevent excessive dehydration during an event, and replace lost fluids prior to their next exercise session. Belval et al. (2019) provided a list of recommendations to achieve these objectives. For example, with prolonged and intensive exercise, athletes should increase their consumption of fluids. They should assess the local environmental conditions to determine the risk of high sweat rates and large fluid losses. Athletes need to understand the type of clothing to wear during certain environmental conditions. During training they need to ensure ample access to fluids. They need to investigate opportunities for fluid intake during an event, develop fluid intake plans and practice these plans during training sessions. Notwithstanding these guidelines, when athletes train or compete alone they must rely on their own regulatory resources to achieve these guidelines. This need to self-regulate their behaviour adds additional information load on their cognitive resources resulting in an athlete forgetting to drink.

Relying on internal cues such as thirst can lead to ineffective rehydration strategies. Hagger and Montasem (2009) undertook a study to evaluate whether implementation intentions (if this happens, I will do this) are successful in increasing intake of fluid and reducing dehydration during prolonged exercise. They studied 35 athletes with a mean age of 26 years

during stationary bike exercises. Implementation intentions were based on environmental and time cues. They found that participants in the experimental group who developed implementation intentions to intake fluids had significant volume of fluid intake compared to the control group. The authors recommended as a self-regulation behaviour strategy around hydration, athletes should form and follow implementation intentions during training and competition.

In summary, behavioural self-regulation involves decision making around pacing, and hydration. Research suggests that for a specific activity, a successful strategy for an athlete is to decide on a pace that they can consistently maintain, recognizing that age may influence the pacing decision based on their perception of their declining physical capabilities. Research also suggests that athletes need to develop implementation intentions around when to rehydrate based on environmental and time cues. Both the Belval et al. (2019) and Hagger and Montasem (2009) studies did not address the effects of age on hydration strategies. The use of implementation intentions as a strategy counteracts potential age affects as older athletes may rely on past experiences to determine when to hydrate (heuristics) versus using well thought plans based on encountering environmental cues. The current study explores if older athletes used pacing and hydration strategies while participating in their endurance activities. Having made these two behavioural self-regulation decisions and having decided to carry on with their activities, athletes then encounter constraints and stress that requires emotional self-regulation strategies.

Emotional Self-Regulation

Endurance athletes encounter many stressors, and their appraisal of these stressors can have helpful or harmful consequences depending on the emotional resources they have

(McCormick, Meijen, & Marcora, 2018). Stressors can result from athletes experiencing dysfunctional emotional responses such as anxiety, frustration, and discouragement, which could reduce their confidence and concentration levels during athletic performance. Emotional self-regulation is a process where endurance athletes' control which emotions they have, when they have them, and how they experience and express these emotions (Richards & Gross, 2000).

A critical process in emotional self-regulation is coping (Lazarus, 1999). An athlete's selection of coping strategies depends on their appraisal of stressors (Nicholls & Thelwell, 2010). Lazarus (1999) explained how individuals deal with stress, including stress that is associated with goal directed behavior. Stress appraisals involve three separate components: primary appraisal, secondary appraisal, and coping. When athletes engage the primary appraisal process, they are evaluating their current stressors. They determine if harm or benefit will occur from the stress source while they pursue their goals. Stress may be evidenced by harm where damage has already occurred, threat where there is a possibility of damage in the future, or challenge where an individual is willing to take on the constraint. All three of these elements can occur at the same time. In the secondary appraisal phase, individuals use self-judgement about options and resources to deal with the situation and the potential consequences of their actions, including the evaluation of coping options.

Emotional self-regulation includes two general coping processes: problem-focused coping and emotion-focused coping (Lazarus & Folkman, 1985). Problem-focused coping, sometimes called task-oriented coping, consists of efforts to act on the stressful situation and achieve the task objective. Emotion-focus coping refers to efforts athletes take to regulate their emotional state resulting from encountering a stressor and how they appraise the stressor. Problem-focused situations and emotion-focused situations can result in an athlete using

approach strategies or avoidance strategies (Roth & Cohen, 1986). If an athlete knows the source of the stressor, feels that they are in a controllable situation, and the expected outcomes of their activity are measured over the long term, they will engage approach coping strategies. In situations where an athlete's emotional resources are limited, the source of the stress is not clear, and the outcome measure is immediate, the athlete most likely will engage avoidance coping strategies. Athletes show little consistency in coping strategies employed, largely due to their inability to anticipate and plan for the stressors they encounter.

Coping strategies have been classified in various ways. In a study of adolescent athletes by Gaudreau and Blondin (2004), they classified coping as task-oriented, distraction-oriented, or disengagement-oriented. Task-oriented strategies involved things like mental imagery, thought control, relaxation, logical analysis, seeking support, and effort expenditures. Distraction-oriented coping strategies included distancing and mental distractions while disengagement-coping strategies were represented by resignation and venting of unpleasant emotions. Their main conclusion was that athletes who used a high level of task-oriented coping, in combination with low levels of disengagement coping, reported better goal performance and psychological adjustments during competition compared to athletes who used a high level of disengagement level coping in combination with low level of task-oriented coping. They also concluded that distraction-oriented coping often failed to significantly correlate with sport achievement.

Athletes of all ages and abilities are required to cope with performance stress. Hoar, Evans, and Link (2012) studied 234 Masters athletes between the age of 55 and 89 years with a mean age of 67 years involved in a winter Seniors Games in Western Canada. These athletes participated in alpine skiing, badminton, bowling, cross-country skiing, curling, hockey, and table tennis. The study identified five causes for stress: performance, logistics, lack of

experience, preparation, and health and nine distinct types of coping strategies. The two prominent coping strategies to meet these stressors were problem solving and seeking social support.

In a study of the emotions of experienced middle-aged golfers (Gaudreau, Nicholls, & Levy, 2010), participants completed questionnaires after each round during six consecutive rounds of golf. The questionnaire assessed coping, perceived stress, and subjective achievement. Objective achievement was measured by their scores. The authors found that golfers maximized their subjective and objective achievement measures when they used more task-oriented coping strategies than when they used less task-oriented coping strategies. Disengagement-oriented coping was associated with lower levels of both subjective and objective measures of achievement.

Gaudreau and Blondin's (2004) study of young adolescent athletes, Gaudreau, Nicholls, and Levy's (2010) study of middle-aged golfers, and Hoar, Evans, and Link's (2012) study of Masters athletes suggest that the use of task-oriented coping strategies is a predominant strategy within these three age categories. However, it should be noted that these studies did not focus on endurance events. Future research should look at the prominence of task-oriented coping strategies, or other strategies used by older endurance athletes.

Further, it is important to note that the use of coping strategies is also dependent on the type of stress athletes' encounter. Athletes face competitive stressors such as injuries and pressure to perform, organizational stressors such as logistics and environmental issues, and personal stressors such as life events, weather, equipment, nutrition, and hydration (McCormick, Meijen, Anstiss, & Jones, 2019).

Based on the belief that athletes will try to regulate their emotions if they believe that doing so will facilitate their performance, Lahart et al. (2013) followed an experienced four-person ultra-endurance cycling team over a multi-day race across the United States. Participants completed measures of emotion after each three- or six-hour intervals. Items assessed were anger, tension, depression, happiness, and calmness. Sleep patterns were monitored, and energy balance was measured as the difference between energy intake and energy expenditure. All four cyclists were found to be in a sleep deprived and negative energy balance state from the first day of the race and indicated that they were experiencing an optimal emotional state for less than fifty percent of the competition. The study concluded that, to successfully implement emotional regulation strategies, participants in multi-day endurance events must include strategies for enhanced sleep and recovery.

Physical distress is a common stressor experienced by endurance athletes that requires effective coping strategies to overcome. Triathletes and cyclists commonly refer to this physical distress as bonking and marathon runners refer to it as hitting the wall, which both include physiological characteristics such as cramping, fatigue, illness, pain, and sensory distortions (Buman, Omli, Giacobbi Jr., & Brewer, 2008). These authors conducted a study to explore the behavioural and psychological characteristics and coping responses associated with hitting the wall among 57 recreational marathon runners with a mean age of 42 years. Upon hitting the wall, athletes demonstrated four distinct characteristics groupings. First, behavioural characteristics were a loss of running form, pace disruption, and tunnel vision. Second, cognitive characteristics were anxiety, changing goals, confusion, and trouble focusing. Third, motivational characteristics were decreased motivation, desire to quit, and desire to walk. Fourth, emotional coping strategies were emotional regulation (enjoying the race) and social support (running with

someone). Athletes also used race-related physical coping strategies such as implementing a supplement and hydration plan, and reduced the physical demands by slowing the pace, stopping, and stretching.

O'Neil and Steyn (2007) performed an exploratory study on coping strategies used to deal with environmental stressors. Participants in the study competed in marathons, cross-country running, road cycling, ultra-distance running, adventure racing, mountaineering, and kayaking. Environmental stressors included: heat, cold, altitude, lack of nutrition, lack of hydration, terrain, distance, sleep deprivation, rain, wind, and equipment. The study demonstrated that the athlete's main strategy was to attempt to change the source of stress, followed by attempts to change their perception of the stressor or stressful situation.

When striving for a highly valuable goal, individuals experience intense emotional states. When these states are perceived as incongruent with what is required for optimal performance individuals try to regulate themselves. For example, Lane, Thelwell, and Devonport (2009) investigated the relationship between self-reported emotional intelligence and emotional states associated with sporting performances. Self-reported emotional intelligence was defined as a constellation of emotion-related self-perceptions and dispositions. Four-hundred and thirty-six university students with a mean age of 21 years, who competed at the club level, were participants in the study. Optimal performance was related to high scores of vigor, happiness, and calmness coupled with lower scores of confusions, anger, depression, fatigue, and tension. The authors found that highly emotionally intelligent individuals were aware of the influence of happiness and confusion in mediating the impact of other emotions on performance. The study also found that highly emotional intelligent people took action to reduce the feelings of depression and sustained a sense of happiness.

The type of stress encountered by athletes has an impact on what strategies athletes use to overcome the situation. When hitting the wall, athletes sought social support and enjoyed the race. When encountering environmental stressors athletes tried to change the source of the stress and their perception of the stress. Athletes who also worked on developing higher levels of emotional intelligence ended up reducing negative thoughts about stressors and increased their overall level of happiness, which positively affected their performance. Emotional regulation strategies, however, needed to be complimented by plans for enhanced sleep and recovery.

It is also important to note that the concepts of emotional regulation and coping are similar but are not the same. In some research, the concepts are not mutually exclusive. Crocker, Tamminen, and Gaudreau (2015) defined coping as a process that involves changes to feelings as well as actions to manage physically and psychologically demanding situations. In looking at processes to regulate emotions, Gross and Thompson (2007) outlined five separate, sequential phases that differentiates between emotional regulation strategies and coping strategies. To illustrate, in the first phase, individuals undergo situational selection where they take actions to make it more likely that they will be in a situation they expect will give them the emotions that they would like to have. As an example of emotional regulation, a person new to running will initially select to enter a five-kilometer race where they know that will be happy throughout the race as opposed to doing a marathon where they could be experiencing anxiety about their ability to finish. Coping would be where, during a trail run, a person encounters a situation where they have the option of continuing a difficult trail that they consider stressful or taking an easier trail to cope with the stress.

The second phase is situational modification, where athletes attempt to modify the situation directly to alter its emotional impact. As an example of emotional regulation where

individuals worry about the swimming section of a triathlon, they modify their situation by switching from a triathlon to a duathlon where they do not have to swim. An example of coping strategies, however, would be in a triathlon where the water becomes quite rough, swimmers would change their breathing pattern where they initially would breathe on both sides to only breathing on the side away from the waves to avoid the stress of swallowing water.

The third phase is attentional deployment where individuals influence their emotional responding by redirecting their attention through using distraction. Individuals shift their attention either away from the emotional aspect of the situation or away from the situation altogether. As an example of emotional regulation, when anxious before a race, individuals can distract themselves by bringing up positive feelings and memories about prior race experiences. An example of coping would be when, during a race, they became anxious about their ability to swim through rough water, they would distract themselves by counting strokes or buoys until they finished the swimming section.

In the fourth phase, individuals implement the process of cognitive change where they change the appraisal of a situation itself or their capacity to manage the situation. To illustrate, an individual prior to the start of a difficult trail run with lots of rocks and roots would change their view of the trail being potentially harmful to their health to one of being a challenge. A coping strategy would be to view a fall not as harmful but potentially only involving minor cuts and bruises that would not hinder progress.

The fifth and final phase of the process outlined by Gross and Thompson (2007) is response modulation where individuals influence their emotional responses directly. In this phase, emotional regulation and coping strategies are similar. The most common strategies

included, arousal control, turning to religion, increasing effort, seeking social support, imagery, planning, relaxation, logical analysis, reappraisal, mental disengagement, behavioural disengagement, acceptance wishful thinking, humor, resignation, confrontation, venting, suppression of competing activities, and problem-solving.

In summary, emotional regulation involves athletes controlling which emotions they have, when they have them, and how they experience them. A critical process in emotional regulation is coping. Emotional regulation has been classified as problem-focused coping or task-oriented coping where athletes focus their efforts to act on stressful situations and achieve their task objectives. Emotional regulation has also been classified as emotion-focused coping where athletes' efforts are focused on regulating their emotional states. With problem-focused coping athletes either use approach or avoidance strategies. Approach strategies are imagery, thought control, relaxation, logical analysis, seeking support and controlling effort expenditures. Avoidance strategies were distraction or disengagement. The literature review demonstrated that the most often used strategy to improve performance was task-oriented coping. The current study explores if all three types of strategies were used.

The literature indicated that what emotional self-regulation strategies athletes used was dependent upon what form of stress they encountered. In situations of physical stress such as fatigue and cramping, athletes relied on social support strategies. For environmental stress such as heat, cold, rain, wind, equipment failures and dehydration, they relied on strategies that either changed the source of the stress or their perception of the stress. The current study explores what emotional self-regulation strategies participants used when encountering both physical and environmental stressors.

Emotional regulation strategies and coping strategies can be combined as evidenced by the discussion on the five phases of the emotional regulation process (Gross & Thompson, 2007). In the current study the participants discussed their emotional regulation strategies, however, did not treat emotional regulation and coping as mutually exclusive strategies. The participants indicated that both strategies were critical to their performance. During the action phase of the goal pursuit process, athletes engage their goal plans and encounter obstacles. To overcome these obstacles, self-regulation strategies were essential in their ability to persevere and attain their goals. Cognitive self-regulation strategies were implementation intentions, self-talk, metacognition, and mental skill training. Behavioural self-regulation strategies were pacing strategies and hydration strategies. Emotional self-regulation strategies were problem-focused coping and emotion-focused coping. Having employed these strategies athletes enter the goal attainment and post-actional phase of the goal pursuit process.

Goal Attainment and Post-Actional Phase (Goal Re-Evaluation, Withdrawal)

Sometimes during the action phase, athletes encounter obstacles or constraints that they cannot overcome. In these situations, they enter the post-actional phase. In the goal attainment and post-actional phase, athletes re-evaluate their goals and determine future actions or, in some cases, withdraw from their activity. One aspect of effective goal striving is an athlete's ability to revise initial goals in response to obstacles encountered, including performance levels achieved.

Goal Re-Evaluation. Williams, Donovan, and Dodge (2000) studied varsity track and field athletes over a course of a season. These athletes were given an initial questionnaire that documented their season goals for an event and their commitment to these goals. During the season, the athletes filled out progressive questionnaires each week on events they competed in,

their performance, what they attributed to their performance, and their goal for the remainder of the season. It was determined that the athletes' initial goals were set above their previous best performance. The athletes did not quickly abandon their goals when they did not meet them, and when they eventually revised their goals downward, the revisions continued to be above their previous best performance level. Early in the season this discrepancy was large as the athletes felt they had enough time to improve; however, as the athletes neared the end of the season, the discrepancy narrowed.

Goals that are central to an athlete's sense of self are more difficult to disengage from and re-evaluate. Rhoden, West, Renfree, Corbett, and Gibson (2015) conducted a case study on three well trained triathlon and cycling athletes who underwent a 20-kilometer laboratory cycling trial. Pre-time trial ratings were obtained on goal expectations, goal pace, and the likely achievement of goal pace strategy. One participant successfully completed the time trial reaching his pre-trial goal. One participant unsuccessfully completed his time trial failing to achieve his pre-trial goal but reported recalculation of his goal during the time trial. The third participant unsuccessfully completed the time trial not achieving his pre-trial goal. Rhoden et al.'s (2015) main conclusion was that the participant that relinquish his original goal commitment, despite being unsuccessful in achieving the original goal, reported positive post-time-trial feelings. The authors advocated that goal disengagement then goal re-evaluation is an acceptable self-regulatory strategy for athletes when their initial goals are unattainable to reduce distress and then continue with their activities.

Together, these studies demonstrate that goal re-evaluation is an important strategy used by athletes when faced with unattainable goals. In both studies, the age of the athletes and if they

were involved in endurance activities were unclear. Determining what strategies older adults employ when facing unattainable goals would be valuable information.

Withdrawal. Sometimes in the goal attainment and post-actional phase, athletes are unable to re-evaluate and revise their goals. They then must employ a strategy of withdrawing from their activity. Menheere et al. (2020) looked at the perceived reasons why runners quit their activities. They gathered data from 898 5km and 10km runners participating in the 2016 Eindhoven Running Event. The average age of the runners was 41 years old. They found that runners perceived two general reasons to quit: individual reasons and social reasons. The dominant individual reasons were injuries and being tired of running. Social reasons related to losing a running partner. The study also demonstrated that individuals older than 45 perceived fewer injury reasons to quit.

The withdrawal decision happens in progressive steps during an activity based on cognitive appraisals and self-regulation (Lazarus 1999). During a competition, disruptive events (i.e., constraints) could lead to progressive and cumulative experiences where athletes cannot persevere and ultimately withdraw from participating. Philippe, Rochat, Vauthier, and Hauw (2016) conducted an exploratory qualitative study of ultra-trail runners with a mean age of 38 who participated in one of three Grand Raid de la Reunion races (65km, 97km, or 173km). The authors determined that participants who withdrew from their race underwent sequential and progressive experiences before they withdrew. First, runners experienced pain and digestive problems. Next, they attributed causes to these feelings such as the physical environment, weather, equipment, and their physical capabilities. Participants then adjusted their running style by modifying their pace and how they ran in relation to the terrain. The athletes then attempted to overcome these obstacles by stopping to recharge, hydrating, or getting medical treatment. Next,

they looked at how other runners were dealing with the situation as a means to change their perception of their current stressful situation. Eventually, they negatively assessed the situation and subsequently withdrew.

Withdrawing is not easy. Athletes make continuous decisions regarding goal pursuit and goal disengagement. In self-paced endurance sports, positive and negative affect play a role in this decision-making process. To extend and explain the relevance of cognitive appraisals and self-regulation as outlined by Lazarus (1999), in terms of affect, further, at the start of an activity, athletes make a primary appraisal of their situation. This appraisal helps the athlete to determine if what they are doing is a benefit (i.e., positive affect). If so, they carry on with their activity. In the case where they encounter pain or discomfort (i.e., negative affect), they again use primary appraisals and decide if the pain represents harm or a potential threat. If they attribute the pain to environmental factors, they decide that the pain represents a potential threat, and they may carry on. If they decide the pain represents a physical situation, they must decide if it represents harm already done, if not, they carry on. Next, the athlete encounters a variety of constraints. The athlete engages in secondary appraisals of the situation. If these constraints are significant, they produce stress and negative affect. To overcome the negative affect, the athlete must engage emotional self-regulation and coping strategies. If these strategies do not work, the athlete will withdraw from the activity.

The strategy to withdraw from an activity can occur before, during, or after an event. Injuries play a prominent role in the decision as well as being tired of doing the activity and losing a training partner. During an event, athletes follow progressive steps towards this decision. At each stage, appraisals are taken and if the situation is not significantly negative the athletes will employ a self-regulators strategy. When the athletes determines that the situation is

significantly negative, they decide to withdraw. An athlete's age may impact this strategy as older athletes may view a potential threat as harm due to their beliefs in their declining physical capabilities to overcome obstacles.

In summary, the goal pursuit process is cyclical. Perseverance strategies are used throughout the process. In the goal attainment and post-actional phase athletes may encounter obstacles, they cannot overcome, they re-evaluate their goals and cycle back to the pre-actional phase. Here they may set new goals related to their current activity. They may also withdraw from their activity and cycle back to the pre-decisional phase and decide to pursue a new activity based on their current motivations and self-efficacy beliefs. In the goal attainment and post-actional phase athletes attain their goals. They then set future goals and cycle back to the action phase pursuing their future goal.

Chapter Summary

The literature review was organized following the four phases of the Gollwitzer (1990) goal pursuit process. During the pre-decisional phase, motivation and self-efficacy strategies were reviewed. In the pre-actional phase, research articles were focused on goal setting and goal planning. In the action phase, articles described self-regulatory strategies including cognitive, behavioural, and emotional self-regulation. In the goal attainment and post-actional phase, articles focused on goal revisions and withdrawal from activities. Although some of the research focused on adult athletes, there was limited research on older athletes over the age of 55. In recognition of this research gap, the current study explored what perseverance strategies older adults used and when they used them during their endurance activities. The next chapter sets out the methods and research design used to answer the study questions.

CHAPTER THREE – METHODS

Chapter Introduction

This chapter outlines the research approach and methods used for this study. The chapter begins with a description of the research paradigm and research design, followed by details on participant recruitment and a description of data collection settings. Methods for data collection and analysis are described, and ethical considerations of this research are detailed. Then the primary researcher's reflexivity and experiences, as well as the dissemination strategies for this study, are provided.

Research Paradigm

This research was based on two worldview assumptions. First, the belief that an external reality exists, independent of the researcher's knowledge of it. Second, information about an external reality can never be free from a person's perception of reality (i.e., a researcher's prior experience). Based on these two worldview assumptions, this research took a phenomenological approach where data were collected from individuals who had experienced the phenomenon. The phenomenological approach was also chosen as it allows for a description and interpretation of meaning of several individuals' experiences, generating the essence of the phenomenon (Creswell, 2007). Data extract descriptions consisted of what each individual experienced and how they experienced it (Moustakas, 1994).

Methodology and Methods

Qualitative description was used as a methodology to answer the research questions. Qualitative description is a research methodology of investigation aimed at describing

individuals' perceptions and experiences of a phenomenon (Neergaard et al., 2009; Sandelowski, 2000). This approach was suited for this study as it addresses what, where, when, how, and why questions about human behavior, motives, and barriers (Neergaard et al., 2009). The advantages of this approach were that it provides straight forward answers to questions, based on naturalistic inquiry (Lincoln & Guba, 1985), where there is no pre-selection of variables, no manipulation of variables, and no a priori commitment to any one theoretical view of the phenomenon.

Qualitative description is also a flexible methodology that allows hues from other approaches, such as phenomenology. The value of the phenomenological approach is that it focuses on understanding the essence of shared experiences among several individuals (Creswell, 2007).

Another advantage was that descriptions of experiences were in a language like the participants' language, which may facilitate successful dissemination of the findings back to the general population. Qualitative description also employed slightly more structured interview questions that focused on areas that are poorly understood, such as what perseverance strategies older adults use during their serious leisure activities and when they use these strategies.

Participants and Recruitment

Participants were identified and recruited following Robinson's (2014) four-point approach, as follows: Defining the sample universe, deciding the sample size, deciding the sampling strategy, and deciding the sample sourcing (recruitment). Details of each of these steps are described in the next four sections.

Defining the Sample Universe

The first step in defining a sample universe was to determine who the participants would be. For this study, potential participants included individuals who met the following three

eligibility criteria: Individuals who were at least 55 years old at the time of the study, individuals who resided in the province of Ontario at the time of the study, and individuals who had participated in any endurance sport(s) within the past five years.

The advantage of defining the participant criteria was that it resulted in homogeneity, which was attained on five dimensions: Geographical (Ontario), demographical (minimal age of 55), physical (ability to endure prolonged effort), psychological (ability to persevere), and common history of phenomenon (participating in endurance sports). This homogeneity narrowed down who the study was focused on, what activities they participated in, and those who had experience with the phenomenon of inquiry. Limiting population diversity also increased the likelihood of obtaining meaningful core cross-individual themes being identified during data analysis.

Deciding the Sample Size

The number of participants was determined by what was practical and based on theoretical criteria. Qualitative research includes collecting data through interviews, focus groups, and field observations. From a practical perspective, all three of these methods generate rich data; however, also involve significant time commitments on both the researcher and the participants. From a theoretical perspective, Guest, Bunce, and Johnson (2006) indicate that the number of participants should reflect when data saturation occurs or when no new themes are generated. For the current study, a provisional decision on the number of participants was set at a minimum of six (Guest, Bunce, & Johnson, 2006). During the initial interviews, participants were asked to refer other individuals who were eligible and who they felt would be interested in the study (i.e., snowballing technique). Based on these practical and theoretical considerations,

the number of participants was increased to 15 where it was determined that further interviews would not generate additional themes.

Deciding the Sampling Strategy

This study used nonprobability sampling techniques (Guest et al., 2006) due to the availability of individuals within the sample population. Nonprobability sampling includes a variety of methods. For this study, purposeful, quota, convenience, and snowball sampling techniques were used.

Purposeful sampling identified individuals that met the eligibility criteria for this study. Due to the experience of having been involved in endurance sports over the past five years, it was anticipated that these individuals employed perseverance strategies when they encountered constraints during their activities. By initially using purposeful sampling, the recruitment of participants was consistent with the research question of what perseverance strategies did older adults use while participating in their serious leisure activities and when did they use the strategies.

To provide more focus within purposeful sampling, quota sampling techniques were used. Quota sampling sets out several categories and the minimum number of individuals required for each category (Manson, 2010). As individuals are recruited, quotas are measured to establish if the minimal requirements are met. For this study, within the domain of endurance sports, minimum quotas of two were set for individuals participating in distance running, distance cycling, and triathlons, respectively.

Recruitment started with convenience sampling, which entailed identifying individuals who were easily accessible and met the eligibility criteria. Convenience sampling started within

the primary researcher's community. This approach resulted in identifying four individuals involved in running, cycling, and triathlons. Having identified and interviewed these individuals, the process of snowball sampling started. This involved the initial four study participants identifying other potential participants among their acquaintances who also met the eligibility criteria. This created a referral chain that continued until data saturation was reached. This resulted in an additional eleven individuals recruited for this study—15 participants, total.

These sampling techniques were used because they were efficient and cost effective in identifying potential participants. The techniques also created both richness of data and minimized variation through homogeneity within the data collected.

Deciding the Sample Sourcing (Recruitment)

As previously mentioned, potential participants were initially identified through the researcher's network of individuals who were participating in endurance sports. During an initial telephone contact, the researcher established if the participants met the study eligibility criteria. Once identified, potential participants were contacted by an email invitation (see Appendix A). This email invitation outlined the purpose and methods of the study, potential time involvement for participation, a privacy and confidentiality statement, and contact information of the research team. If the recipients of the email expressed interest in participating in the study in a reply email, then correspondence was exchanged to establish potential times for an online interview via Zoom communication technology or by telephone if the participant requested. If the primary researcher did not receive a response from the first email within ten days, a follow-up email (same email as before; again, see Appendix A) was sent asking of their interest in participation.

If the potential participants indicated no interest in participating in the study, or if there was no response to the follow-up email, the researcher made no further attempts to contact.

Once the primary researcher received participants' agreement to participate, a written informed consent form (see Appendix B) was sent by email to the potential participants to ensure they had a complete understanding of the purpose, risks, and benefits of the study, assurance that all information would be kept confidential and stored in a secure place, and the timeframe for when the data collected would be destroyed. This process ensured that participants knew their participation was voluntary and that they could, at any time and for any reason, withdraw from the study. Consent also included the audio-recording of interviews, the anonymized transcription of interviews, and the use of unattributed quotes in the presentation of results so that participants were not identifiable. Participants were asked to sign, date, and scan the consent form and return it to the researcher by email.

Data Collection

Data were collected through two means: questionnaires and a semi-structured interview. Participants completed a short demographic questionnaire (see Appendix C) and a short leisure history questionnaire (see Appendix D). The demographic questionnaire contained information on the participants age, gender, highest obtained education level, average household annual income over the past five years, and employment status. This information helped determine the level of diversity within the participants and indicated inclusion gaps that could be addressed in future studies. The second questionnaire involved the participants recording up to three endurance activities they were involved in over the past five years. For each activity identified, participants indicated which of the six characteristics of serious leisure (Stebbins 2001) they felt

their participation demonstrated. This information helped characterize and contextualize participants engagement and experiences of endurance sports, which was a main focus of the study. This information was essential to assess the age and endurance eligibility criteria, and that their participation in their activities required perseverance, prolonged effort, and skill development over a serious leisure career. Participants were sent the questionnaires via email and, after completing the questionnaires independently, participants scanned and emailed their responses back to the primary researcher.

The second method for data collection included one semi-structured interview for each participant, which was conducted remotely via Zoom due to the COVID-19 pandemic. To ensure participants' privacy, the Zoom meeting required a password to join. Also, interviews took place in private and quiet locations, which were decided by the participants, with the primary researcher conducting the interviews in a private home office. This facilitated effective audio-recording of the interviews to be used for transcribing. Prior to the formal interview, the primary researcher confirmed that participants fully understood the study aims, what their participation entailed, the voluntary nature of their involvement, and how privacy and confidentiality was to be maintained. Participants were also given the opportunity to ask any questions if they were uncertain about the process or the aim of the study.

During the interview, the researcher used a semi-structured interview guide (see Appendix E). The guide included six open-ended questions directed towards understanding the participants' involvement in endurance sports and the perseverance strategies they used to overcome serious leisure constraints. The guide provided definitions for constraints, perseverance, and self-regulation. To obtain a better understanding of the participants' lifelong involvement in sports, the interview guide included questions asking participants to describe

their activities during their youth and early adulthood. This provided the primary researcher with a background that may have affected endurance sports involvement in later adulthood. The interview guide also included questions around possible constraints the participants may have encountered during their endurance sport involvement, how these constraints affected their perception of their ability to reach their endurance sport goals, what steps they took to change their goals if necessary, and what self-regulation strategies they used to pursue their goals. As a result of using the interview guide, the primary questions were presented systematically and, when necessary, allowed for off-script probing questions to expand the discussion in ways that were pertinent to the study aims.

The primary researcher informed participants that the interview would take approximately 60 minutes; however, there would be no set minimum or maximum time limits. Participants were also told that the interview would be audio-recorded and transcribed verbatim. During the interview, if any participant indicated that they wanted a specific comment to be excluded from data collection, the researcher took note and eliminated that information during the transcription phase. At the end of the interview, participants were given the opportunity to add any additional information that they felt was pertinent to the study but was not sufficiently covered. Participants were then thanked for their time and for their contributions to the study.

Data Management

Participants corresponded with and provided data to the primary researcher via email and attended one virtual face-to-face interview as part of data collection. Therefore, participants were not anonymous; however, the questionnaire and interview data were anonymized (i.e., deidentified) at the point of data entry and transcription, respectively. Participants were given a

unique anonymized identification number (i.e., P-1, P-2, P-3) that was later changed to pseudonyms chosen by the participants or by the researcher if the participants did not provide one. Data collected were entered into an anonymized database (questionnaire data) or coded and analysed (interview data) on a password-protected and firewalled laptop computer that operated on a secure network. The computer was securely locked away when not in use in the researcher's home.

Anonymized questionnaire and interview transcript data were stored securely and separately, in a different location, from the signed informed consent forms to ensure that participants' data and responses could not be matched to their names. Written and electronic records were transported to a secure and locked location on York University's Keele Campus. These records will be kept there for a period of seven years, after which all information will be shredded and discarded or overwritten and reformatted. Only the researchers listed on the research ethics submission had (or will have) access to these data (i.e., the primary student researcher and the thesis advisor).

Data Analysis

Thematic analysis was employed as a strategy for interview data analysis as it allowed for a description and interpretation of data pertaining to a particular phenomenon (Braun & Clarke, 2006). As such, thematic analysis was appropriate for a study that used qualitative description methodology with hues of phenomenology (Neergaard et al., 2009; Sandelowski, 2000). Another advantage of using this approach was that it was relatively easy to learn for a new researcher. It was a flexible method that allowed a wide range of things to be said about the data and allowed

for key features of the data to be summarized, while highlighting both similarities and differences.

Thematic analysis followed the six-step analytical process developed by Braun and Clarke (2006). The first step involved becoming familiar with these data on a deep level. This was accomplished by repeated listening to the recordings as well as searching for meanings and patterns. This was also reinforced during the verbatim transcription of the interviews and creating a list of ideas about what the data represented in terms of the research objectives.

The second step to thematic analysis involved generating initial codes from these data (Braun & Clarke, 2006). Coding of the interviews was done manually, on a line-by-line basis, without fitting the data into a pre-existing coding framework. Initial coding was done throughout the entire data set, identifying interesting features of the data items that represented repeating patterns. After all data extracts were coded, they were collated together within each code. The third step involved searching for themes (Braun & Clarke, 2006). This involved determining how different codes manifested to form an overarching theme. Initial theme maps were created demonstrating the relationship between codes, between themes, and between different levels of themes, which resulted in main themes and sub-themes.

The fourth step involved reviewing the themes (Braun & Clarke, 2006). All collated extracts for each theme were reviewed to ensure they formed a coherent pattern. Then the entire data set was reread to ensure that the themes worked in relation to the data set. The fifth step was identifying the essence of what each theme was about (Braun & Clarke, 2006). This was accomplished by writing an analysis for each theme, identifying the story each theme told, and how the stories contributed to answering the research questions. In this phase, themes were

broken down to contain sub-themes, if necessary. The sixth and final step involved writing the report (Braun & Clarke, 2006) (see Chapter 4), focusing on telling the story of the data, providing sufficient evidence of the themes within the data (i.e., extracted quotations from participants), and making an argument in relation to the research questions. Thematic analysis identified the story each theme and sub-theme told and how it fit into the overall lived experience of the participants and how their stories related to the research questions. Data analysis started soon after the first interview was transcribed and continued after all interviews were completed.

Trustworthiness

Trustworthiness, or research rigor, represents the degree of confidence one can have in the methods, data, interpretation, and reporting of the findings (Polit & Beck, 2014). Lincoln and Guba (1985) outlined four criteria to establish trustworthiness: credibility, dependability, confirmability, and transferability. The steps taken in this current study to create trustworthiness are outlined below.

Credibility. Credibility refers to the confidence in the truth of the findings through the eyes of those interviewed. Credibility was attained by using standard qualitative research procedures. Participant interviews were not restricted by time limitations resulting in prolonged engagement. Interview transcripts were member checked in instances where there was need of clarification, and data analysis went through the process of iterative coding.

Dependability. Dependability refers to the extent to which the research would produce similar and consistent findings carried out as described. Dependability was attained by clearly identifying the participants' demographics and identifying specific types of endurance activities

participants were active in. Dependability was also attained by developing and following the interview guideline for each interview.

Confirmability. Confirmability refers to the degree that findings are consistent, can be repeated, and do not reflect the researcher's bias, motivation, or perspectives. Confirmability was attained by following the thematic analysis process. Confirmability was also attained during each session of data coding by employing reflective practices to reduce researcher bias.

Transferability. Transferability refers to the extent findings can be transferred to other settings. Transferability was attained by ensuring the key aspects of the context from which the findings were identified were clear. Findings also included vivid data extracts that facilitated the ability to transfer the findings to other contexts.

Ethical Considerations

Ethical considerations are important when conducting research. Steps need to be taken to respect the participants as people, to ensure their physical, mental, and spiritual health, and to treat each participant fairly, equitably, and with respect. Data collection did not begin until after approval from the Office of Research Services at York University was received (Protocol #: e2020-360). The following paragraphs outline the informed consent process, the privacy and confidentiality of the participants, and the potential risks and benefits of participation.

Throughout this process, the Tri-Council Policy Statement (TCPS2) (2018) was referenced.

Informed Consent

The details of the informed consent were outlined above and are contained in the attached informed consent form (Appendix B). Participants were made fully aware of these details on

three separate occasions and were given opportunities to discuss and understand these details, including that their participation was voluntary and that they could withdraw from the study at any point in time. Further details included on the informed consent form are discussed below.

Privacy and Confidentiality

Data were collected via two short questionnaires and one-on-one audio-recorded interviews. The recordings were saved in a password-protected file on the researcher's local and password-protected computer. All interview transcripts were initially deidentified and pseudonyms were used on all information to ensure confidentiality. Any hardcopies of data, including transcriptions, were safely stored in a locked facility, with only the research team having access. Data will be stored for seven years after data collection. After this period, the data will be destroyed using a paper shredder and deletion of electronic data via overwriting and reformatting of external drives.

Risk and Benefits

This study involved older adults who at the time of the interview were at least 55 years old. According to TCPS2 (2018), this group is often considered a 'vulnerable population' as they may be economically disadvantaged or subject to physical, cognitive, and emotional life pressures. However, given the demographics of the participants, and that they freely chose to participate in endurance sports, this was likely not the case for the current study. Nevertheless, participants were made fully aware that their involvement in the study was voluntary and they could withdraw, at any time and for any reason, including if they felt vulnerable.

There were no foreseen risks for the participants in this study, as the research aim was to explore what perseverance strategies the participants used while engaging in their serious leisure

activities of endurance sports. The participants reported no discomfort in providing their answers as most of the constraints mentioned were well known within endurance sports, such as, weather conditions, fatigue, and sources of stress. The participants were forthright in their telling of encountering these constraints and in discussing strategies they successfully used to overcome these obstacles. Incurring potential discomfort while telling their stories was mitigated as the participants were aware that their participation was voluntary, and they had the right to withdraw.

The participants also showed no discomfort around the confidentiality and privacy of the information they disclosed as they felt that the data were collected on proven technology, was password protected and was going to be stored in secure locations. In fact, participants may have directly benefited from participating in this study by gaining personal insights into how they used perseverance strategies through the telling of their stories. Participants may have also gained an indirect benefit by knowing they contributed to the serious leisure literature around perseverance strategies used by older adults while participating in endurance activities.

Researcher Positionality and Experiences

Reflexivity is a necessary process in conducting research. I, the primary researcher, approached this study from the perspective of an older adult who has been involved in serious leisure and endurance sports throughout my life. As my personal experience had an impact on how I collect and analyze the data, it was important that I recognize my positionality. It was beneficial to my research that I spoke the same language as the participants. However, recruitment was from the longer distance segments of the cycling, triathlons, and ultra-running that I had not personally experienced. Participants were also individuals that I did not previously

know or, in two cases, were individuals that I knew but was unaware of their endurance activities.

Dissemination Strategy

This thesis was written and presented in partial fulfillment of the primary researcher's Master of Science degree in the Kinesiology and Health Science graduate program at York University. Findings may be presented at academic conferences and published in scholarly peer-reviewed journals. Preliminary findings were presented in the School of Kinesiology and Health Science's graduate student seminar series. Summary findings may be presented at Expo's connected to endurance competitions and at general information sessions connected with programs sponsored by sporting equipment outlets. It is anticipated that the dissemination of the general findings will provide older adults with information about the study and a list of strategies they could potentially use when they encounter obstacles during their endurance activities.

Chapter Summary

This chapter provided a detailed description of the research methodology and methods for this study. Research design was qualitative description. Data were collected through questionnaires and semi-structured interviews. Data were analysed by using thematic analysis techniques. Ethical considerations and the positionality of the primary researcher were considered. Possible dissemination opportunities within academic and sporting communities were presented. Research findings are detailed in the next chapter.

CHAPTER FOUR - RESULTS

Chapter Introduction

This chapter first presents the participant characteristics so that the readers can appreciate their backgrounds and their overall level of involvement in endurance sports. Second, this chapter presents the findings of the current study, including direct quotations from participants to support the identified themes and sub-themes which help answer the following research questions: What perseverance strategies do older adults used while participating in endurance sports, and when do they use these strategies? Themes and sub-themes are presented separately; however, they are not mutually exclusive as they connect within and between themes.

Participant Characteristics

A total of fifteen older adults participated in this study. Nine identified as male, and six identified as female. Participants' age ranged from 57 to 74 years, with an average of 67 years. All were residents of Ontario. All participants, except one, had annual household incomes greater than \$80,000. The one exception had annual income between \$60,000 and \$80,000. All participants reported having obtained a college or university education, with six receiving graduate degrees. Participants' endurance sport activities included half-marathon and marathon running, ultra-distance running, all levels of triathlons, long distance cycling, open water swimming, kayaking, and downhill skiing. For a summary of the participants' characteristics, see Table 1.

Table 1: Participants' Characteristics

Pseudonym	Age	Gender	Serious Leisure Activity
Ron	72	Male	Marathon, Skiing
Marie Claire	67	Female	Cycling, Skiing, Kayaking
Max	74	Male	Cycling
Manny	61	Male	Cycling
Andrew	57	Male	Marathon, Triathlon

Grasshopper	64	Male	Marathon, Ultras, Cycling
Rosemarie	61	Female	Triathlon
Jacob	66	Male	Marathon, Cycling, Triathlon
David	68	Male	Marathon, Ultras
Nora	66	Female	Swimming, Triathlon
Earl	63	Male	Marathon, Cycling, Triathlon
Iron Girl	64	Female	Marathon, Cycling, Swimming, Triathlon
Dawg	62	Male	Ultras, Bruce Trail
Pookie	69	Female	Marathon, Swimming, Triathlon
Carol	67	Female	Marathon, Cycling, Swimming, Triathlon

Findings

Findings from this study are presented within the temporal aspects of Gollwitzer's (1990) goal pursuit process. All data from the participants interviews was subject to thematic analysis (Braun & Clarke, 2006). All interviews were read and re-read several times to generate initial ideas. For each separate interview data set the initial ideas were given codes reflecting behaviors identified in each of Gollwitzer's (1990) four action phases of the goal pursuit process. Similar coded extracts across all interview data sets were collated and potential themes were defined and named. Potential themes were checked across all participants and endurance activities. Additional themes were added if necessary. All themes were reviewed, and sub-themes were identified and named. Nine main themes were identified within the four overarching themes of the goal pursuit process. Thirty-one sub-themes within these themes were identified from the analysis. The themes and sub-themes are presented in Table 2. Each sub-theme contains direct quotes from participants on their frequently used perseverance strategies while participating in endurance sports.

Table 2: Thematic Structure and Organization of Findings

Overarching Theme 1: Pre-Decisional Phase			
Main Theme		Sub-Theme	
1	Strategies to develop motivation to participate in endurance sports		
	A	Motivation strategies to improve current health conditions	

		B	Motivation strategies to take on a new challenge
		C	Motivation strategies to be active with a friend or family
2	Strategies to develop self-efficacy beliefs		
		A	Strategies to build self-efficacy through prior experience
		B	Strategies to build self-efficacy through friends and family
		C	Strategies to build self-efficacy through inspiring people's stories
3	Strategies around setting initial general goals		
		A	Strategies of setting initial general goals
		B	Strategies of setting initial general event goals
		C	Strategies of setting initial general performance goals

Overarching Theme 2: Pre-Actional Phase			
Main Theme		Sub-Theme	
4	Strategies around setting specific goals		
		A	Strategies to set specific time goals
		B	Strategies to set specific distance goals
		C	Strategies to set specific performance goals
5	Strategies around training plans		
		A	Informal planning strategies
		B	Formal planning strategies
		C	Strategies to monitor training progress

Overarching Theme 3: Action Phase			
Main Theme		Sub-Theme	
6	Cognitive self-regulation strategies		
		A	Cognitive strategies before an activity
		B	Cognitive strategies to maintain focus
		C	Cognitive strategies to build confidence
		D	Cognitive strategies around a positive mindset
7	Behavioural self-regulation strategies		
		A	Strategies to deal with the weather
		B	Strategies to deal with health conditions
		C	Strategies to prevent injuries or reduce the impact of injuries
		D	Strategies to deal with equipment and race logistics
		E	Strategies to use during training and racing
8	Emotional self-regulation strategies		
		A	Strategies to deal with anxiety
		B	Strategies to deal with frustration
		C	Strategies to deal with fear
		D	Strategies to deal with disappointments

Overarching Theme 4: Goal Attainment and Post-Actional Phase			
Main Theme		Sub-Theme	
9	Goal re-evaluation and setting future goals		
		A	Goal re-evaluation strategies before an activity

		B	Goal re-evaluation strategies during an activity
		C	Setting future goals

Overarching Theme 1: Pre-Decisional Phase of the Goal Pursuit Process

In the pre-decisional phase, themes and sub-themes concern motivation, self-efficacy, and initial general goal setting.

Main Theme 1: Strategies to Develop Motivation to Participate in Endurance

Sports. The decision to participate in endurance sports involves one acknowledging that the activities require persistent effort over a prolonged period or distance. The first step in this process is to develop motivation to participate. Self-determination theory (Deci & Ryan, 1985) defined three forms of motivation which occur on a continuum. Amotivation where individuals have a complete lack of desire to participate. Controlled motivation where individuals engage in an activity due to external forces based on rewards or punishment outside of their control. Autonomous motivation where individuals identify with the value of the activity and integrate that value into their own sense of self (Deci & Ryan, 2008). Participants in this study initially displayed autonomous motivation to engage in their activities. The following sections identify three future values or benefits that motivated the participants to take-up their activities.

Sub-Theme 1A: Motivation Strategies to Improve Current Health Conditions. The most prominent future value or benefit the participants hoped to attain from engagement in their activity was to improve their current health conditions. During Earl's early adult years, he enjoyed playing golf; however, as he became more involved with work, he became a "lazy person" putting on over forty pounds. In his late forties, because of a medical checkup, he decided that "it was time to give up smoking" and he "decided to start running." In his fifties, Grasshopper was experiencing stress around his job and family situation. He was never a runner,

so he decided to start walking to deal with his stress. He first walked around the block and eventually progressed up to doing twenty-kilometer walks. Grasshopper decided “that this was taking too long” and began power walking. He stated that his “power walking led to jogging which led to running” that helped him deal with his stress. As a child, Nora had polio. Her parents were told that she should not participate in any cardio-based activities. In early adulthood, Nora stated that “at some point I wanted to be more active”. She started swimming as it was good way to deal with her past medical history, and eventually became a triathlete.

The participants in this study identified with the future value or benefit to be obtained from participating in their activity and integrated this value into their sense of self. Their strategies were to stop smoking and start running to become healthier, start running to stop life stresses, and start swimming to overcome childhood health limits on their level of activities.

Sub-Theme 1B: Motivation Strategies to Take on a New Challenge. The second most dominant value or benefit the participants hoped to gain from participating was the potential sense of accomplishment from taking on a new challenge. Dawg grew up living close to the Bruce Trail, which is a nine-hundred-kilometer trail system running throughout Ontario. He did a fair amount of hiking on the Bruce Trail when he was young, and the trail became a challenge to him, He said that “he had a dream to run the full Bruce Trail”. He started running on sections of the trail in early adulthood and eventually became motivated to run the full trail. In his early fifties Dawg took up the challenge and ran the full trail over a period of eighteen consecutive days.

Andrew grew up in England and joined the marines. His first leadership commissioned was at a base where everyone was physically active. He was not very active and stated “I got to have something, not just something. I got to do something that I have not done before”. As a

challenge he decided, “I am going to do an ironman”. He entered a future ironman race the next day, just before he ran his first try-a-tri triathlon.

Throughout her young adult years, Iron Girl developed a successful career in the fashion industry. This was very challenging, as she spent long hours each day to become head of the Canadian operation of a European based multinational. She realized that she wanted a more balanced lifestyle; however, she recognized that if she engaged in a sport it needed to be as challenging as her work life. She took up marathon running and stated, “it just was really refreshing to step outside what work was and to do something that was so physically challenging as well as mentally”.

As a strategy to gain motivation to start an activity participants decided to take on new challenges, they followed their childhood dreams, did something they had never done before, and participate in a challenging activity to balance out their challenging work life.

Sub-Theme 1C: Motivation Strategies to be Active with a Friend or Family. The third value or benefit participants hoped to gain from their chosen activity was the positive feelings associated with participating with friends and family. As a young girl, Pookie realized that she was competitive. Throughout her school years she was involved in track and road racing. She eventually got involved in coaching elite athletes and became involved in the Road Running Association of Ontario. Through these activities, she became aware of athletes who had taken up triathlons, including her daughter. Based on her daughter’s involvement Pookie “decided to try triathlons”. Her daughter was taking a triathlon training program. Based on her motivation to take up a sport with her daughter, Pookie decided that “she would join her to train with this group”.

Manny did not participate in competitive sports in his youth and was relatively inactive in early adulthood. He had a friend, who he considered a mentor, who enjoyed cycling. Manny said that one day his friend said, “why don’t you come with me for a ride”. Based on his desire to do something with his friend, Manny went for the initial ride and over the years has done many long-distance cycling trips with his friend.

As Iron Girl began trained for marathons, she realized that to manage her time commitments to work she needed to train at four in the morning. She trained with a young man whose wife was going to Lake Placid to compete in the ironman triathlons. Iron Girl said, “I was invited by this young man and his wife to come down for the weekend and watch it. I became just mesmerized by it”. By watching her friend compete in an ironman she was motivated to become an ironman herself.

To gain motivation to participate in their chosen activity, participants’ strategies were to develop positive feeling by participating with friends and family. They joined formal training programs with family members, decided to start an activity with a life-long friend, and watched a friend compete in a famous race.

In summary, the participants’ strategies to develop motivation to take part in a new activity were to do something to improve their current health conditions, take on new and challenging activities, and become more active with friends and family. Having developed their motivations, the participants then needed to have strategies around developing their self-efficacy beliefs about their ability to perform these activities.

Main Theme 2: Strategies to Develop Self-Efficacy Beliefs. Having developed the motivation to participate in endurance sports, individuals need to develop their self-efficacy beliefs in their ability to do the activity. Self-efficacy refers to the belief in one’s capabilities to

organize and execute the courses of action required to produce given attainments (Bandura 1997, p.3). Self-efficacy beliefs are generated through a series of cognitive processes involving the selection, interpretation, and integration of several sources of information (Bandura, 1997). Three key sources of information are past performance experiences, vicarious influences, and social support from coaches, training partners, family, and friends (Anstiss, Meijen, & Marcora, 2020). Participants in this study developed these beliefs based on their prior experiences, support from family and friends, and observing inspiring people.

Sub-Theme 2A: Strategies to Build Self-Efficacy Through Prior Experience. Past experiences are a source of information to build one's self-efficacy as they give clear examples and reference points of what an individual can achieve. Pookie was motivated to run the Boston marathon, which required you to run a prior marathon within the qualifying time. For Pookie the qualifying time was three hours and thirty minutes. Pookie said in her qualifying race, "I ran 3:29:55. That was the turning point where I realized that I could do this and be quite competitive". Grasshopper was a successful marathon runner who was losing interest in competing in road races. He was motivated to switch to ultra-trail running. He had confidence in his ability to run long distance, but he lacked self-efficacy beliefs in his ability to participate in ultra-trail running. As a strategy to develop his self-efficacy, he sought out a well-known ultra-runner. Grasshopper said for him to develop his self-efficacy beliefs he, "learn it from other people's experiences".

Participants' strategies to develop their self-efficacy to be able to perform their chosen activity were to recognize that they met pre-race qualifying times and by learning from successful experiences of others.

Sub-Theme 2B: Strategies to Build Self-Efficacy Through Friends and Family. Social support can increase one's self-efficacy as it reinforces an athlete's existing self-efficacy beliefs and challenges the athlete's own conception of their abilities. Most participants in this study started their endurance career by running by themselves. As novices they lacked self-efficacy in their ability to run endurance distances. This was Carol's situation when she was first motivated to run a marathon. Carol knew of a group of people at work that ran at lunch. Carol "got in with this group" as a strategy to develop her self-efficacy around her ability to run a marathon.

Andrew was motivated to run a ten-kilometer race. He had a friend who was going to run a local ten-kilometer race. To develop his self-efficacy he said, "I was going to run with her". Marie Clair was motivated to become a downhill skier. She lacked self-efficacy around her ability to ski. As a strategy to develop this self-efficacy she decided to "learned to ski" and said that "my mom taught me".

Participants employed a strategy to develop their self-efficacy through social support from their friends and family. They decided to join co-worker's lunch time activities, decided to run an upcoming race with a friend, and decided to ask a family member how to do their activity.

Sub-Theme 2C: Strategies to Build Self-Efficacy Through Inspiring People's Stories. When an athlete lacks prior experiences, vicarious influences can increase their self-efficacy beliefs. Andrew was motivated to do an ironman triathlon. To build his self-efficacy he was inspired by a friend who had done a couple of ironman triathlons and who was training for a future ironman. Andrew said, "she was posting all her training programs and I could grasp what she was doing... just watching her I was so inspired by her training". Based on these inspiring videos, Andrew developed his self-efficacy around his ability to do an ironman triathlon. Max cycled but had not undertaken long distance cycling. He has a friend who was eighty years old

and cycles thirty thousand kilometers a year. Max said, “he is one of my heroes” and has inspired Max to cycle over twelve thousand kilometers a year. In her late fifties, Nora wanted to start running, but didn’t know if she could run. Nora said, “I used to see a woman running who was obviously in her 60s, and I said, darn if she can do that... I started [running]”.

Participants in this study build their self-efficacy by following a strategy of watching inspiring people. They watched posted social media videos of training sessions, and watched older people accomplish extraordinary things.

In summary, participants’ strategies to develop their self-efficacy beliefs around their ability to participate in their chosen activity were to reflect on their past experiences, obtain social support from friends and family, and watch others accomplish things they wanted to do. Having employed strategies to develop their motivation and self-efficacy, the participants then needed to set initial general goals.

Main Theme 3: Strategies Around Setting Initial General Goals. Goals must be difficult, but attainable (Lunenbergh, 2011). However, specific, difficult goals do not always lead to better performance than simply urging people to do their best (Seijts & Latham, 2001). To overcome this potential obstacle of setting specific difficult goals participants in this study adopted a strategy of setting initial general goals that were general in nature, related to specific types of endurance events they wanted to participate in, or related to their performance.

Sub-Theme 3A: Strategies of Setting Initial General Goals. When planning to take on a new activity most athletes do not know what they can do. As a strategy to ensure they maintain their motivation to start a new activity they set initial general goals. Although Manny was a cyclist, he had no idea what distance he should strive for when deciding to participate in long distance cycling. As a strategy he said, “my goal was initially to kind of push myself to see how

fast I could go and how much time it would take me to reach a significant distance”. When Nora decided to do open water swimming, she set a general goal of “not to die”. Marie Clair adopted a different approach. She likes to participate in all kinds of new endurance activities; however, she has difficulty getting started if she sets even general goals. As a strategy she said, “I don’t really have overall goals”.

To maintain their motivation to start a new activity the participants’ strategy was to set initial general goals such as having no overall goal, just survive their activity and to just see how fast or far they could go.

Sub-Theme 3B: Strategies of Setting Initial General Event Goals. Several participants in this study set event goals even though they had no experience in their underlying activity. Grasshopper was not a runner; however, as a strategy to start running he said, “one day I said to myself, I think I will run a marathon”. Like Grasshopper, Ron was not a runner. As a strategy to get started he said, “my main goal at that time was just to join a group and do a 10K on Saturday mornings”. Earl occasionally ran in a gym. He decided that he wanted to run a marathon sometime in his life. He did not have a specific marathon in mind, but he knew it would take time to be able to run that distance. As a strategy, Earl “set the goal of doing a 5K, 10K, a Half, and then doing a full Marathon”.

Participants initially had no experience in what it was going to take to participate in their activities and lacked knowledge around which events they should enter. As a strategy to maintain their motivation to start their activities, they picked an activity distance they wanted to eventually do. They set no set time frame for when they would do the activity by, and they did not pick a specific race to enter.

Sub-Theme 3C: Strategies of Setting Initial General Performance Goals. Having no experience in an activity and setting specific performance goals can be demotivating. As a strategy to maintain her motivation to start running, Rosemarie said her goal was, “just to finish. I rarely have a bigger goal”. Jacob on the other hand felt that he needed to set a performance goal to get him involved in marathon running. He had no idea how long it would take him to run a marathon. He said, “I just kind of picked a number, said four hours seems reasonable”.

To maintain their motivation to start a new activity, participants’ strategies were to set general performance goals. All they wanted to do was just finish their first race within a reasonable time.

In summary, to maintain their motivation to start a new activity, participants set general goals, general event goals, and general performance goals. Having set these goals, the participants entered the pre-actional phase of goal pursuit where they needed to set specific goals and establish training plans.

Overarching Theme 2: Pre-Actional Phase of the Goal Pursuit Process

In the pre-action phase, theme and sub-themes concern goal setting and training plans.

Main Theme 4: Specific Goal Setting Strategies. Once an athlete decides on an activity and then starts their involvement in the activity, they need to make their goals specific to be effective (Locke & Latham, 2002). Participants in this study adopted strategies to set specific time goals, distance goals, and performance goals.

Sub-Theme 4A: Strategies to Set Specific Time Goals. For endurance activities it is important that participants set both training goals and race goals. As a strategy to set training goals for his first ironman Earl established weekly time commitment goals. He said, “it really is about the training regime... started around swimming two or three times a week... getting up at

five in the morning... doing a run right after the swim... on the weekends doing a lot of cycling... typically four, five, six hours on the bike... twenty-hour per week commitment to training”.

Training time goals for an ultra-marathon is a slightly different strategy. For Grasshopper’s training strategy he said, “sometimes it is not a matter of saying I am going out and run this distance. I will say I am going to go out and run for five hours. It is time based not really speed based because it has so many hills, ruts, and roots”.

Andrew was setting goals for his first ironman triathlon. From an individual discipline point of view and based on participating in shorter triathlon distances, he knew how fast he potentially could be in each segment; however, he did not know how fast he could be overall. His strategy was to set time goals for each segment of the race. For the swim segment he said, “I am looking at an hour and a half to two”. For the bike he said, “I am looking at six hours”, and for the run he said, “I am looking at 6:30 to 6:45 per kilometer”.

Jacob was getting ready to run his second marathon. He didn’t know what good times or bad times were. As a strategy he said he “didn’t have anything in mind, other than beating my previous years’ time”.

As a strategy to set specific time goals, the participants set goals on how many hours per week they were going to train, focused on running for a specific time versus a distance, set specific time goals for each segment of a triathlon race, and set a specific time goal for a race slightly faster than their previous race times.

Sub-Theme 4B: Strategies to Set Specific Distance Goals. After their initial involvement in their activities, athletes obtain an understanding of what distance they could cover. They were then ready to adopt a strategy of setting specific distance goals. Max knows that the amount of

cycling he wishes to do on a daily or weekly basis varies due to family commitments, weather conditions, and how he feels physically. Max wants to cycle each day; however, he does not want to be constrained by daily distance goals. As a distance goal strategy Max said, “I like to do a minimum of seven thousand clicks a year”. By developing an annual distance strategy, Max does not have to worry about daily events that could disrupt his overall cycling goal. Dawg set a distance goal to run the nine-hundred-kilometer Bruce Trail. He set aside eighteen days to do this in. As a strategy, Dawg said, “I wanted to do about fifty kilometers a day... like a little over a marathon every day”. Earl set a goal of doing an ironman triathlon distance. As a strategy he said, “I knew I would have to step through a full process of getting some training, and doing a short distance triathlon, an Olympic triathlon distance, and then a half ironman triathlon distance” Earl knew it would take two years to go through this process before he could do his first ironman triathlon.

As a strategy to set distance goals participants combined overall goals with sub-goals. To achieve the overall goal of running the 900-kilometer Bruce Trail, daily sub-goals of 50-kilometers were set. To achieve an annual cycling goal, specific daily and weekly goals were not established to facilitate uncertain family commitments and avoid short term demotivation. To eventually compete in an ironman triathlon distance, sub-goals were established to run shorter distances then progressively longer triathlons and eventually run an ironman.

Sub-Theme 4C: Strategies to Set Specific Performance Goals. As novice distance runners, some participants strategies for setting performance goals were to set something they were confident in reaching. As an example, Andrew’s said his performance goal strategy for his first marathon was “I really didn’t have any time goal, I just wanted to finish it without walking. I was determined not to stop”. Pookie’s performance goal strategy was not based on achieving a

specific time. She said that her “goal of winning was more important than achieving times”. Iron Girl’s strategy for setting performance goals for her first ironman triathlon was “only to finish before the cut-off [time]”.

Other participants’ performance goal strategies were related to qualifying for important competitions. Andrew stated that “with all my endurance sports, the goal is to finish and to qualify for world championships”. For Pookie setting her triathlon performance goals was more about how she compared to her fellow competitors. As an example, she said, “I would see where I ranked against the women in my age group. Then I got to how I ranked with women over 40, it wasn’t a specific time because you could never control what time people are going to achieve. I really had to compete against myself”.

Some participants’ strategies were to set age group performance goals. Rosemarie was turning sixty and wanted to set performance goals based on being the youngest in her age group. She said, “I am going to take advantage of the fact that I am at the bottom of my age group. I am going to do a series [of triathlon races] and see how well I do”. Nora’s performance goal strategy was to set a range of performance goals. Nora said, “I write down three goals that are an A-goal, a B-goal, and a C-goal. The A-goal would be a stretch goal. The B-goal would be that yeah, I would be happy with that. C-goal, maybe not as happy, but it is ok”.

Participants’ strategies to set performance goals varied from finishing a race without walking, qualifying for a future race, beating specific competitors, placing within their age group category, and outright winning a race. One participant established a range of performance goals from stretch goals to goals that were just okay.

In summary, as a strategy to set effective goals the participants set specific time, distance, and performance goals. Having set these goals, the participants then needed to develop training plans.

Main Theme 5: Strategies Around Training Plans. For goal setting to be effective it is important to have a feedback system to track progress (Locke & Latham, 2006). An initial step in a feedback system is to develop a training plan that facilitates the goal directed behavior. Participants in this current study used strategies to develop both informal and formal training plans.

Sub-Theme 5A: Informal Planning Strategies. Some participants in this study had no experience in developing or following a training plan. They just learned by participating with a friend. As an example, David said, “I really had no training plan at all. I would run with them [co-workers] a couple of days during the week then on the long runs on the weekend I would run with a neighbor of mine who was quite a bit slower”. Other participants created their own training plans. For Manny’s first triathlon he said, “I would determine how much I needed to run in a week to maintain a level of ability to be able to run a 10K run at a certain pace. Swimming I didn’t do a lot of training. I just went at a pace that I was comfortable with”. Ron and David developed their training plans from books. Ron said he “used that plan that John Stanton [Running Room] has in his books. While David planning for his two-hundred and fifteen-mile race said, “I have done a lot of research. A lot of books that I have read on running, nutrition, spiritual”. Another informal strategy was to learn from a mentor. In developing his plan to run the Bruce Trail, Dawg said, “A friend of mine had done it... we helped her... I learned a fair amount from her”.

Participants who relied on informal training plans adopted a strategy to train with a friend or a mentor, developed their own training plans, or followed a plan set out in training manuals, other participants adopted a strategy around formal training plans.

Sub-Theme 5B: Formal Planning Strategies. The more experienced participants, planning strategies were based on formal training plans and coaches. For Carol who was a long-time runner and had a swimming coach, when she decided to take up triathlons, she “found a cycling coach”. For Nora’s half-marathon she had a coach who was good at knowing what motivated her, understood how she thought, and knew what she could do physically and mentally. Nora said, “all I had to do was follow the plan”. However blindly following a coach and plan does not always work out and you need to adjust your strategy. As an example, Pookie wanted to qualify for the world swimming championships. She had a coach for her local swim team that was good from a technical point of view but did not think he should push Masters swimmers to become better. As an alternative strategy, Pookie drove over an hour, three times a week, to swim at 5:30 in the morning at another club. She said, “the coach there really pushed technical stuff and there was a big group of like-minded people who wanted to swim at Worlds that summer”.

Participants whose strategy was to follow a formal training plan joined associations that had specific coaches for their sport. The participants recognized that their coach had to respect their current and potential ability and the association had to include like-minded athletes. Having developed informal or formal training plans the participants then needed to develop a feedback system to monitor their progress.

Sub-Theme 5C: Strategies to Monitor Training Progress. Having established training plans, progress towards goal attainment depends on developing strategies to monitor progress.

Andrew runs every day and wants to see how his training has improved his performance compared to the previous year. Andrew said, “I record what I have done as soon as I come in. I can see what I have done in comparison to past years”. Manny has no set cycling program. He records each trip. Over a season he may end up cycling the same route a couple of times. Manny said, “some of the routes, I want to remember. I will just look back on it and see what it was. Then I will be curious to see how fast I do it the second time I do it”. David has been writing journals for the last twenty-five years, recording his heart rate, weight, what time he got up, and how he is feeling. David said, “I think if you do not write your goals down and measure how you are doing, you won’t achieve them”.

Participants’ strategies to monitor their progress towards their goals were keeping daily journals on what they achieved in their training and how they felt about their sessions. They also recorded specific aspects about their training as soon as they finished the session and, in several cases, compared their current progress to previous training sessions.

In summary, participants developed strategies to create informal and formal training plans as well as feedback systems to monitor their progress towards their specific goals. Having established these plans, the participants entered the action phase of goal pursuit where they needed to develop self-regulatory strategies to overcome obstacles and constraints.

Overarching Theme 3: Action Phase of the Goal Pursuit Process

In the action phase themes and sub-themes concern self-regulation. Self-regulation is recognized as a framework that underpins action planning, training, and development in endurance performance activities (McCormick, Meijen, Anstiss, & Jones, 2019). Zimmerman, (2000, p. 9) defined self-regulation as self-generated thoughts, actions, and feelings that are planned and cyclically adapted to the attainment of personal goals. The following sections sets

out cognitive self-regulatory strategies (i.e., thoughts), behavioural self-regulatory strategies (i.e., actions), and emotional self-regulatory strategies (i.e., feelings) the participants used to overcome obstacles and constraints while they participated in their endurance activities.

Main Theme 6: Cognitive Self-Regulation Strategies. Once goal-directed behaviors have been planned and initiated, one must develop strategies to stay on track (Wolff, Bieleke, & Schuler, 2019). Participants in this study developed cognitive strategies around developing options, understanding what potential obstacles they might face during a race, focusing, building confidence, and having a positive mindset.

Sub-Theme 6A: Cognitive Strategies Before an Activity. For an endurance athlete, cognitive self-regulation strategies can start before participating in an activity. As an example, as a cognitive strategy to qualify for the Boston marathon, Ron developed a back-up plan. Ron “ran Ottawa thinking, I go for a decent time and if I don’t get it, I still got Chicago to back me up”. Nora’s cognitive strategy was to always become mentally familiar with a racecourse before an event. Prior to running a triathlon Nora said, “I went down, and biked part of the course, drove the run part... you are familiar with what’s going to happen, it is not all brand new on race day”.

Participants’ pre-race cognitive strategies were to have developed a back-up plan in case they did not meet their goal on the first try, and before any event become cognitively familiar with the racecourse.

Sub-Theme 6B: Cognitive Strategies to Maintain Focus. During endurance events, athletes maintain their focus using different cognitive self-regulation strategies. Sometimes athletes focus on proximal cues. As an example, Jacob said, “my mind is always focused on what I must do to get to the next milestone, however I define that, the next buoy in the swim, the next telephone pole in the run. You always focus on the little things. You run the mile you are in”.

Andrew takes a more distal approach. His cognitive strategy is to focus on the next part of the race. Andrew said, “when I am swimming. I am really looking forward to getting on the bike. Half-way through the bike I am looking forward to getting on the run. And halfway through the run I wish I was back on the bike”.

On the other hand, Marie Clair had to change her focus during a difficult kayaking trip to survive. Marie Clair said, “I gave up looking for the person I was paddling with, and I just focused on getting where I need to be... once I reached the shore, I could go and ask for help for the other person”. Sometimes focusing on another person during a race is not the right thing to do and you need to refocus back on yourself. Most of the time while running an ultra-race you are on your own. During one race David said that he suddenly caught sight of a couple of runners ahead of him. Instead of focusing on his own pace, David said, “maybe I should see if I can catch up to them and pass them”. As a result, his heart rate went up and he became less efficient. As a cognitive strategy David realized he needed to focus on himself, he said you “run your own race, don’t worry about the person in front of you, you are already catching them, you couldn’t see them ten minutes ago”.

Participants’ cognitive strategies to maintain focus during an event were sometimes to focus on proximal cues, and at other times look forward to the next part of the race. Participants also employed a strategy to bring their focus back to themselves, disregard others and run their own race.

Sub-Theme 6C: Cognitive Strategies to Build Confidence. Over the course of an endurance event, athletes go through periods where they lose confidence in their abilities to finish. Participants in this study used several cognitive self-regulation strategies to rebuild their confidence in these situations. Grasshopper and Pookie rely on motivational self-talk to get

through these difficult times. During an ultra-race, Grasshopper said, “I have had conversations with myself ... ah it isn’t going so well, let’s call it a day. No, you can do better than this, come on suck it up and get going”. Pookie’s motivational self-talk is more challenging. She said, “I have cursed myself. I have talked to myself in my head... come on you son of a B..., you can do this”. Other athletes use instructional self-talk as a cognitive strategy. Carol said that she “imagined my cycling coach sitting on my shoulder telling me, you shifted too early, this leg up that leg down”.

Nora’s cognitive self-regulation approach was to focus on numbers during her races. She said, “I think if I didn’t have numbers in front of me, then I think my brain would do things like we can’t do this, this is too hard. if I can look at the numbers and go, ok you can do this, you can hit that number. You can do that for another two minutes. You can do that for another five minutes, it’s not that long”.

In endurance events sometimes you need to build up your confidence to avoid taking the easy way out. As a cognitive strategy to build confidence around completing the one-hundred-and-eighty-kilometer cycling portion of an ironman triathlon race, Andrew says, “I like to do two two-hundred-kilometers bike rides in the peak [training] week” One is a straight flat one-hundred kilometer out and back. He said, “it is a long slog coming back, but there is no option”. For the second ride, he said, “I do is a fifty-kilometer out and back, then a circuit which is twelve and a half kilometers... eight laps. As I finish each lap, I can see my house, I can stop whenever I want. It is a classic ‘mind over matter’ because I could have quit quite easily if I want”.

Participants’ cognitive strategies before an event were to develop training situations where they built up their confidence to not take the easy way out of difficult situations. During

events their cognitive strategies were to use motivational and instructional self-talk, and in certain situations focus on numbers such as distance markers demonstrated their progress.

Sub-Theme 6D: Cognitive Strategies Around a Positive Mindset. In difficult sections of a race, it is important to have a positive mindset about your race preparation and race strategy. As an example, David said, “knowing you are prepared... you have done all the training... you have done all the work... you are meeting your nutritional requirements... you say... I know I can do this... I know I am going through a hard time right now... I will just keep on going”. Another strategy is disassociation from negative thoughts. Nora is good at zoning out mentally when her body gets tired. She said, “I can disassociate my brain from my body... I mentally write my race report, which is glowing of all the right things I did in my race, while my body is screaming don’t do this anymore”. Nora also carries a positive mindset when she is recovering from injuries. She said, “if I got injured it was ok, what is the plan, you can’t just sit here, you must find a solution. If that solution doesn’t work, find the next one. Once I have a plan, I can relax, do the exercise, do what the physio says”. Jacob has a positive mindset all the time. His cognitive strategy is reflected in his overall approach to races. He said, “I just want to have a decent race, whatever happens, happens”.

Developing a positive mind set during endurance events is crucial as athletes are sure to encounter unforeseen obstacles. Participants’ strategies were to acknowledge that they were fully prepared for a race, disassociate from all negative thoughts, be open to trying a different approach if the first one did not work, and acknowledge that no matter what you do, whatever happens, happens.

In summary, participants used a variety of cognitive strategies to overcome obstacles during their activities. They employed cognitive strategies around maintaining focus,

maintaining confidence, and having a positive mind set when facing obstacles. Prior to races the participants' cognitive strategies were to become familiar with the racecourse, and have back-up plans if things did not turn out as expected.

Main Theme 7: Behavioural Self-Regulation Strategies. To successfully participate in endurance activities, athletes must develop behavioural self-regulator strategies to deal with obstacles they may encounter. Behavioural self-regulation refers to an individual's ability to control their physical actions (Baumeister & Voks, 2004) when they encounter uncertainty and must make decisions around their actions. These decisions can occur during a race where they must control their pace (Nikolaidis & Knechtle, 2017, 2018), hydration (Lamb & Brodowicz, 1986), or overcome environmental factors such as the weather and hills. Participants in this study developed strategies to deal with the weather, their chronic health conditions, injuries, equipment availability, logistics, and training and racing obstacles.

Sub-Theme 7A: Strategies to Deal with the Weather. Endurance activities occur outdoor over prolonged periods of time, where weather conditions can have an impact on performance. Grasshopper's strategy to deal with weather is taking the position that "weather is not the problem, its inadequate clothing". Andrew takes a slightly different view. The night before a scheduled morning training run, he lays out all his training clothes. Whatever the weather is the next morning he does his run knowing that "if I don't do that training it is like the walk of shame putting all my stuff away". Rosemarie also lays out her running and swimming clothes the night before. She said, "I pretty much figured out that I am going to do one of two options [run or swim]. If it looks like the weather is horrible, I will have my swim". Manny on the other hand anticipates that on his long cycling trips, the weather is most likely to change. As a strategy Manny said, "one of the things I do is I carry three lenses. I will wear a certain lens if it is a

bright sunny day, I will wear the darker lenses to soften the sunlight. If it is a grey, gloomy, overcast day, I will wear a different lens. I have a pure white lens if it is going to be rain”.

Participants’ strategies to deal with bad weather were to dress appropriately, carry on no matter what the weather to not feel guilty, create training options to avoid bad weather, and establish implementation intentions to meet changing weather conditions.

Sub-Theme 7B: Strategies to Deal with Health Conditions. Endurance athletes develop various strategies to deal with their chronic health conditions. Rosemarie suffers from Asthma and the longer her triathlon races are she feels that she has less oxygen. As a strategy Rosemarie has shorten her triathlon race distances. She said, “Sprint is a good distance for me”. Jacob has developed chronic knee problem from running on hard surfaces. As a strategy he said, “I switched to a treadmill. No hard surface. The swelling went down. I did essentially all my training on treadmills”. David also had chronic knee problem that took him away from ultra-marathon training. He gained a significant amount of weight. When he returned to running, he noticed that his knee was not the same. As a strategy David said, “I became vegan. I lost 30 pounds, and in about three months the pain in my knee was gone”. While training for a marathon Carol was diagnosed with an abdominal aortic aneurysm. She reduced the intensity of her training, but she continued to train. As a strategy Carol said, “I would do my running around a park which was across the street from the hospital where my surgeon was, with the instructions of, if I collapse just get me over to the hospital as soon as you can”.

Participants’ strategies to deal with poor health conditions were to shorten their races down to a distance where their health would not be a factor, train on soft surfaces to reduce the impact on their knees, become a vegan to lose weight, and train near a hospital where they could get medical care quickly if needed.

Sub-Theme 7C: Strategies to Prevent Injuries or Reduce the Impact of Injuries.

Dealing with injuries or the potential of incurring an injury is the way of life for endurance athletes. As a preventative strategy, Earl said, “there was a respect for my body. If I was injured, I took time off. I would not persevere and continue to hurt my body”. Manny knew that for him injuries occurred when he quickly changed from one sport to another. To prevent the shock on his body during a triathlon Manny said, “I always train to do the cycling then the run afterwards to see how that would feel knowing that when I get into a race it is not going to be something shocking to my body”. Jacob’s strategy was to not always blindly follow what other people or experts say when dealing with injuries. He said, “you must not just follow what experts say, because we are all individuals. You must do a lot of experimenting. I did water running”. Sometimes when confronted with an injury that will not go away you have to find a different way to do things. When Andrew first started training for triathlons his shoulder would come out of the socket when he did the front crawl. As a strategy Andrew said, “I learned how to do breaststroke”.

Participants’ strategies to deal with injuries were to take time off from training if feeling an injury coming on, practice triathlon transition segments to reduce stress on different muscles, experiment with injury recovery programs, and develop different movement patterns to avoid using injured body parts.

Sub-Theme 7D: Strategies to Deal with Equipment and Race Logistics. Max is a long-distance cyclist. Annually he goes on cycling vacation in either Cuba or Australia. Packing a bike and getting the bike through the various airports leads to lots of anxiety around if the bike gets damaged or never shows up. As a strategy Max said, “I buy a bike there. Then I sell them when I am leaving”. During a triathlon race there is potential for having a flat tire or break a

chain. Andrew's strategy is to control the controllable and not worry about things that might happen. In preparing for a race, Andrew said, "I make sure I have tubes and CO2 cannisters to repair a flat. If a chain breaks. I take a chain".

Ultra-marathon races can take up to twenty-four hours and requires an athlete to have a logistic strategy. Grasshopper said, "you need to pack drop bags. Throughout the course you drop these bags. The bags have something specific you need [at that point in a race]". Prior to large marathon races, logistic strategies are also needed. As an example, prior to the start of the Boston marathon, competitors must first congregate at Boston Garden, where they catch a bus to the start of the race in Hopkinton. If you get to the start too early, you could wait up to four hours before the start at a location with limited shelter and facilities. As a strategy Ron took his friend's advice to "get on the last bus you can". Dawg's logistic strategy revolved around organizing his support crew during his eighteen days of running the Bruce Trail. He said, "my wife said she would help. She took two weeks out of her life to drop me off in the morning and feed me lunch and meet me along the way. Make sure I got to the end point and pick me up at night".

Participants' strategies to deal with equipment and logistic issues were to purchase equipment in another country versus being subject to losing or damaging the equipment in transit. They also carried spare parts during races to fix broken equipment, arranged to get to the starting line of a race not too early or too late, and placed drop bags with appropriate clothing and food in spots where they expected to need them during ultra-races and made sure to meet up with support crews as agreed to before the race.

Sub-Theme 7E: Strategies to Use During Training and Racing. During endurance events, athletes often lose sight of time and when they should drink water and take nutrition supplements. In David's early days of ultra-running, he often did not finish a race due to not

drinking or eating enough. As a strategy, David said he “went to putting a timer on some of my watches. You can put in interval information. So, every 15 minutes I get a beep and I would drink water. Every fourth one I would take electrolytes”.

During cycling, hills can become an issue. Earl views hills as an enjoyable challenge. In training he tries to pick out the hardest ones and makes a point of taking them on. Earl said, “the nice thing about cycling, it is nose to the grindstone, look no more than 20 feet in front of you, and just keep going... you lock yourself into a mindset, get yourself into a manageable gear, and just grind away for about half an hour and go up the hill”. Max takes a different approach. He said “I will walk up a hill if I absolutely must. I did different exercises when you walk. I was in better shape when I got to the top. I could carry on”.

Maintaining a consistent pace while running a marathon can be difficult due to unknown factors that affect your energy levels. In Andrew’s early marathon running days, he often had difficulty in following a consistent pace. As a strategy he adopted a ‘ten miles, ten miles and ten kilometers’ strategy. He said, “you run the first ten miles at ten seconds slower than your average pace... second block you run at ten seconds faster... ten kilometers to go and you just go for it”.

Participants’ strategies to deal with obstacles during races were to maintain a hydration schedule by setting timing cues on their watches, only focus on the next twenty feet when encountering hills, walk if necessary if hill become too difficult, and to follow their pre-race pacing strategies.

In summary, participants used a variety of behavioural strategies to control their actions and overcome obstacles during their activities. They developed strategies to deal with bad weather, existing health conditions, injuries, equipment and logistics issues, and race related obstacles.

Main Theme 8: Emotional Self-Regulation Strategies. Maintaining your emotions during participating in endurance activities is an important factor in your ability to reach your goals. Emotional self-regulation is a process where endurance athletes' control which emotions they have, when they have them, and how they experience and express these emotions (Richards & Gross, 2000). A critical process in emotional self-regulation is coping (Lazarus, 1999). Emotional self-regulation strategies depend on how an athlete appraises the stressors that cause the emotion (Nicholls & Thelwell, 2010), and what type of stress an athlete encounters (Lahart et al., 2013). Participants in this study developed strategies to deal with the emotions of anxiety, frustration, fear, and disappointment.

Sub-Theme 8A: Strategies to Deal with Anxiety. Endurance athletes must deal with anxiety both before and during their activities. Prior to setting out on a sixty-kilometer cycling ride, Marie Clair became anxious about her ability to cycle for that long. As a strategy to get out the door and start her ride, Marie Clair acknowledges that you do not have to do what you planned to do. Marie Clair said, "it is okay to just ride and come home, if you don't feel good". Jacob was a recreational cyclist when he discovered he had brain tumors. After his third surgery he was anxious about returning to any activity. As a strategy to get over his anxiety he relied on support from his family. He said, "I did the 5K fun run. I walked it holding hands with my daughter". Andrew always experiences anxiety prior to any triathlon. As a strategy to reduce his anxiety he visualizes parts of the race. Andrew said, "I had to go through picturization [visualization]. Picture what I want to happen... picturizing transitions... picturize the swim... I needed to start slow... long gliding strokes... shallow breaths not lungs full of breath". During the swim portion of a triathlon Nora became anxious as the wind increased causing huge waves. They were pulling athletes out of the water, but she kept going. Nora was anxious about her

ability to finish. As a strategy to reduce her anxiety, Nora slowed her breathing, thought about her technique, and did not look at how far she had to go. Nora said she took, “just one stroke at a time... just keep counting strokes... that’s how I got through that”.

The participants encountered anxiety both before and during activities. When anxious before an event, participants strategies were to seek positive support from their family and in some cases visualize part of the race where they anticipated anxious moments and how they would deal with those moments. To reduce anxiety during a race, participants slowed their breathing down, focused on techniques, counted race markers, and acknowledged that you do not always have to do what you planned to do.

Sub-Theme 8B: Strategies to Deal with Frustration. Endurance athletes often get frustrated during a race or recovering from an injury. Over her career Pookie was often hit with injuries including plantar fasciitis which is a horrible injury for a runner and quite frustrating as it takes a long time to recover from. Pookie’s strategy was to stay focused on her recovery approach. She said, “I remember I was so driven to get rid of it that I would never miss a physio appointment. I would do rehab religiously. It was like trying to get control of my life by getting rid of my injury”. Dawg’s frustration came from feeling that sometimes he was making no progress while running the Bruce Trail. His strategy to deal with the frustration was stay in the moment. He said, “you know you chop away at it a little bit at a time and keep moving and it is amazing how the distance goes by”.

The participants’ strategies to deal with frustrations from injuries were to stay focused on their recovery plans. Strategies to reduce frustration resulting from the feeling of not progressing fast enough during races was to stay in the moment and forget about the future.

Sub-Theme 8C: Strategies to Deal with Fear. In the back of an endurance athlete's mind is the fear that they are training and racing too much and as a result might damage themselves versus improving their performance. David was consumed with long training runs, competing in up to twelve ultra-races a year, and eating anything he could get his hands on to maintain his energy levels. David lived with the fear of overdoing it. To reduce this fear David's strategy was to change his approach to ultra-running. He did, "two races a year instead of doing twelve... running much, much slower". He changed his diet and over the last couple of years he ended up winning his age category in a lot of races.

Iron Girl developed a fear of dogs while cycling. During a ride two dogs jumping up on her bike which resulted in her flipping off her bike, being knocked out and breaking her clavicle. As a strategy to control her fear, Iron Girl said, "I rode for years with one of those [things] like what postman carry. It's a button that you push. It's called dog off, and it's like a bell and I had it around my neck and if I heard a dog, I would push the button and it generates a sound that you can't hear but the dog can hear".

Ultra-runners also fear the unknown especially when racing throughout the night. Grasshopper was racing with a couple of friends during a night race in a dense forest. They came over a rise and were frightened by a full-sized bull moose standing on their path. They turned around and started running back the way they came, then stopped. To reduce his fear Grasshopper started laughing and said, "you know what, we probably scared him as much as he scared us".

The participants encountered two major forms of fear; fear that they could be injured because of overtraining, and fear of encountering animals during their activities. As a strategy to avoid the fear of injury they reduced the number of events they would train for and compete in

each season. As a strategy around facing the unknown consequences of encountering animals, they reverted to laughing acknowledging the fact that the animals were probably scared of them. One participant also started carrying a devise that scared away animals.

Sub-Theme 8D: Strategies to Deal with Disappointments. Endurance athletes set challenging goals and often incur disappointment when they don't attain their goal. Ron wanted to qualify for the Boston marathon and therefore needed to run a marathon in less than four-hours. As a strategy to deal with the disappointment of not running faster than four hours in his first marathon he tried a second race. Ron said, "I wasn't happy that I could only do it in four hours. I signed up for the Toronto marathon, which was three weeks later. I ran it and I took ten minutes off my finish time".

In the early days of running the Bruce Trail, Dawg would often get disappointed when he did not meet up with his support crew at designated spots along the trail. This occurred when he was running too fast, or his crew had difficulty in getting to the spot. To avoid this disappointment Dawg's strategy was, "you learn to play it by what we agreed to ahead of time and make sure we don't screw things up. Sometimes the plan is more important".

Looking at Jacob from a distance you would think life disappointments would have stopped his involvement in endurance sports. Jacob has undergone three brain tumor operations and once ended up in a hospital because of being run over by a drunk driver while cycling. Jacob said his strategy was, "I don't focus on the disappointments. You need to focus on what you can do and not wonder over the other things".

In summary, as a strategy to overcome disappointments, participants accepted that they had to try again if he did not meet qualifying goals. When they were disappointed in not meeting up with their support crews during ultra-races, they changed their strategy that no matter if they

were moving faster than expected they would not run on ahead but stick to their logistic plan. Finally, to avoid ongoing disappointments they switched their focus from what they could not do to focus only on what they could do.

Participants in the current study encountered several types of stress while engaged in their endurance activities. To be able to reach their endurance goals they had to control their emotions related to these stressors. To control these emotions, they implemented strategies to reduce or eliminate stress from anxiety, frustrations, fear, and disappointments.

Overarching Theme 4: Goal Attainment and Post-Actional Phase of Goal Pursuit Process

In the goal attainment and post-actional phase, themes and sub-themes concern goal re-evaluation, withdrawing from existing goals and setting future goals.

Main Theme 9: Goal re-evaluation and setting future goals.

As participants enter this phase, they sometimes re-evaluate their current goals, revise their goals, and in some cases completely withdraw from their activity. This process can occur before an activity, or during an activity, and are discussed in the following two sub-themes.

Sub-Theme 9A: Goal Re-Evaluation Before an Activity. Participants in this study faced situations where obstacles blocked their ability to attain their goals. Race cancellations due to Covid-19 restrictions represented such a situation. As a strategy to overcome this obstacle, participants focused on continuing to train and compete in virtual races. Andrew did every race he was registered to do, however he did them by himself. On the day of a scheduled ironman race, he completed the race distance by his home. He said that “I did 380 lengths of a neighbour’s pool... 3.8 kilometers”. David and Grasshopper continued to train, but by themselves. Grasshopper said, “I ended up running more often”. He was forced to work from home and as a result at “3:30 in the afternoon, I am ready to hit the trail”. David continued to

train and race. As a strategy he “got hooked up with a [Social Network] group”. He eventually was introduced to virtual races. Pookie also used virtual training as a strategy. She “joined the Swift Crowd [virtual training] ... You are riding in real time... You can ride with friends”.

Sub-Theme 9B: Goal Re-Evaluation During an Activity. During training and while racing participants incurred injuries that required them to re-evaluate their current goals. Nora while training and participating in road races sustained an IT band injury. As a re-evaluation strategy she said, “let’s try biking”. Iron Girl also started incurring injuries while she was training for her fifth ironman. A friend told her that if she continued with ironman races, she would hurt herself. Iron Girl said, “I knew if I did another one, I probably would injure myself”. As a strategy she retired from ironman races; however, continues to run, swim and cycle separately.

An important strategy when facing obstacles during an activity that cannot be overcome, is to quit. Rosemarie who suffers from Asthma due to cold weather said, “sometimes on a really cold day I actually have to stop running”. Sometimes quitting is not your choice. David was in a 100-kilometer ultra-marathon and was not getting enough electrolytes. At the 94-kilometer mark he hit the ground and couldn’t get up. He said, “they put me in an ambulance”. Later David said he probably could have crawled to the finish; however, quitting was the right strategy.

Dawg was the classic case of using a quitting strategy to try again later. He has yet to finish a difficult ultra-trail race, quitting three times. The first time he said, “he ran too fast to meet the [in-course] cut-off time... He was totally exhausted and pulled out”. The second time he was within the cut-off time. He said, “I was quite cold... I wasn’t drinking enough... I was dehydrated... I was totally frustrated and had to pull out”. During the third try he encountered a section where he had to hang off a rock and drop down to a lower trail. He said, “at that point

your legs are so tired... This doesn't make sense... I could hurt myself". He quit but is currently planning his fourth try.

Sub-Theme 9C: Setting Future Goals. Once participants attained their original goals, they cycled back to the pre-action phase and established future goals. Some participants just carry on with what they are currently doing. Grasshopper has completed over 100 marathon and ultra-marathon races. When asked about his strategy for the future he said, "my goal is that I think that I have one more 100-mile race in me". Other participants' strategies revolved around more general goals. Jacob said his future strategy was to stay active "for health, fitness, fun, and enjoyment". David's future strategy was "to keep fit... To be able to run a marathon with his grandchildren". Ron's future strategy was "to just keep on running". Pookie's future strategy was to continue to be active, "just to stay healthy".

As the participants entered the goal attainment and post-actional phase they continued to employ strategies. Sometimes before an activity they had to re-evaluate their goals due to obstacles such as the cancellation of races due to Covid-19. During activities they had to re-evaluate their goals due to injuries and health concerns. When the participants attained their goals, they then employed future goal strategies such as staying fit and healthy.

Chapter Summary

Findings from this study were presented to reflect the four stages of the goal pursuit process. In the pre-decisional phase, participants employed strategies to develop their motivation and self-efficacy around their chosen future activities. They then set initial general goals to ensure to maintain their motivation before starting their new activity. The participants then entered the pre-actional phase where they employed strategies around setting specific goals and training plans. As the participants entered the action phase, they encountered obstacles and

constraints. For this phase, they employed cognitive self-regulation strategies, behavioural self-regulation strategies, and emotional self-regulation strategies. In the goal attainment and post-actional phase, participants re-evaluated and revised their goals and, in some cases, withdrew from their endurance activities. The next chapter discusses these findings in relation to the current study's research questions and to past literature.

CHAPTER FIVE - DISCUSSION

Chapter Introduction

This chapter begins with an overview of the research, the rationale for the study and the research questions. The study findings are discussed in terms of the four phases of the goal pursuit process (Gollwitzer, 1990) and in relation to the extant literature. Overall conclusions are stated, and limitations of the study are discussed. Future research directions are proposed to mitigate the limitations and to advance the current findings, and the research area more broadly, moving forward by exploring gaps in the findings and in the existing literature.

Overview

For older adults, one popular view of successful aging is represented by the absence of disease and disability, high cognitive and physical functional capacity, and active engagement with life including participation in meaningful activities (Rowe & Kahn, 1997; 1998). Serious leisure, or the self-determined pursuit of an amateur, hobbyist, or voluntary activity, represents such meaningful activities. Within serious leisure, the amateur type of serious leisure includes art, science, entertainment, and sports (Stebbins, 2007). Six qualities of serious leisure involvement are perseverance, significant effort, career development, durable benefits, strong identification, and unique ethos (Stebbins, 2001). These serious leisure qualities have been linked with the promotion of successful and healthy aging (Brown, McGuire, & Voelkl, 2008). To participate in serious leisure, older adults need to demonstrate perseverance to overcome obstacles and constraints (Lee & Payne, 2015).

The conceptual model of constraints to participation in leisure was developed by Crawford and Godbey (1987), which included intrapersonal, interpersonal, and structural

constraints. These types of constraint constructs are interrelated and may affect an individual's preference for a leisure activity and their participation in that activity (Jackson, Crawford, & Godbey, 1993). Different models for constraint negotiation were developed and empirically tested. The perceived-constraint-reduction model proposed that individuals with enough negotiation resources perceive themselves as less constrained and more motivated to participate when facing constraints (Hubbard & Mannell, 2001). This model was expanded by Loucks-Atkinson and Mannell (2007) to show that the greater an individual's confidence in their successful use of negotiation resources to cope with constraints, the greater the motivation and effort to negotiate and the higher the level of participation.

The current study explored what perseverance strategies older adults used to overcome constraints while participating in endurance sports as their chosen serious leisure activity. In addition to demonstrating what perseverance strategies participants used, the study also explored when they used these strategies. Participants in this study followed the four phases of Gollwitzer's (1990) goal pursuit process as they participated in their activities. This study followed this process and viewed each of the four phases as an overarching theme. The overarching themes, and the relevant main and sub-themes under them, addressed the research questions of what perseverance strategies older adults used as well as when they used them.

Overarching Theme 1: Pre-Decisional Phase of the Goal Pursuit Process

In the current study, older adults wanted to make changes in their serious leisure activities and start participating in endurance sports. The first step in this process was the pre-decisional phase where the participants developed motivation to participate, developed their self-efficacy beliefs around their ability to participate, and set initial general goals that did not stop them from wanting to participate.

Main Theme 1: Strategies to Develop Motivation to Participate in Endurance Sports

During the pre-decisional phase, the first main theme was the participants' strategies to develop motivation to participate in their endurance sports. Within this main theme three sub-themes were identified.

Sub-Theme 1A: Motivation Strategies to Improve Current Health Conditions. The participants in this study identified with the future values or benefits to be obtained from participating in their activity and integrated these values into their sense of self. Their strategies were to stop smoking and start running to become healthier, start running to stop life stresses and start swimming to overcome childhood health limits on their level of activities. These strategies are supported by the extant literature. For example, Ogles and Masters' (2000; 2003) studies on older marathon runners demonstrated that the main reason for athletes to take up marathon running was to improve their physical and psychological well-being. This motivation was also supported by older marathon runners in Leon-Guereno et al.'s (2021) study where participants claimed that their greatest source of motivation was their concerns over their general health.

Sub-Theme 1B: Motivation Strategies to Take on a New Challenge. As a strategy to gain motivation to start an activity, participants decided to take on new challenges, they followed their childhood dreams, did something they had never done before, and participated in a challenging activity to balance out their challenging work life. Participants were more task-oriented than ego-oriented motivated when they used strategies to take on new challenges. These strategies are supported by the extant literature. To illustrate, Steinberg, Grieve, and Glass (2001) examined achievement motivation orientations across the lifespan and determined that there was no difference in the degree of task-orientation; however, older athletes demonstrated lower ego-orientation. In an earlier study, Duda (1996) demonstrated that task-oriented motivation led to

long-term participation in activities. Cluster analysis research by Ogles and Masters (2003) demonstrated that older marathon runners identified as ‘Personal Goal Achievers’ had primary motivations to improve their performance in relation to past performances. All three of these studies support the current study findings that older athletes are motivated by challenging task-oriented activities.

Sub-Theme 1C: Motivation Strategies to be Active with a Friend or Family. To gain motivation to participate in their chosen activity, participants’ strategies were to develop positive feelings by participating with friends and family. They joined formal training programs with family members, decided to start an activity with a life-long friend, and watched a friend compete in a famous race. As such, social motivation was a primary focus for these participants. The use of these strategies is supported by the extant literature. In a study of Masters athletes, Hodge, Allen, and Smellie (2008) demonstrated that social oriented athletes were motivated by affiliation with and respect of others. Ashford, Biddle, and Goudas’ (1993) study of Masters athletes demonstrated that social motivation was important for middle-aged and older athletes participating in sports, and non-competitive cyclists were shown to be motivated by social affiliation (LaChausee, 2006).

Main Theme 2: Strategies to Develop Self-Efficacy Beliefs

The second main theme identified during the pre-decisional phase was the participants’ strategies to develop their self-efficacy beliefs towards participating in their chosen endurance sports. The development of self-efficacy beliefs occurs through a series of cognitive processes involving the selection, interpretation, and integration of five sources of efficacy information: past experiences, verbal persuasion, vicarious influences, physiological states, and affective

states (Bandura, 1997; Feltz et al., 2008). Three sources of self-efficacy beliefs were identified from this study that represented three sub-themes.

Sub-Theme 2A: Strategies to Develop Self-Efficacy Beliefs Through Prior Experience. Participants' strategies to develop their self-efficacy beliefs to be able to perform their chosen activity were to recognize that they met pre-race qualifying times and by learning from successful experiences of others. Both strategies are supported by the extant literature. For example, Anstiss, Meijen, and Marcora's (2020) study of competitive Masters athletes found that they developed their self-efficacy beliefs through remembering their past sporting experiences including challenges and adversities they encountered.

Sub-Theme 2B: Strategies to Develop Self-Efficacy Beliefs Through Friends and Family. Participants employed a strategy to develop their self-efficacy beliefs through social support from their friends and family. They decided to join co-workers' lunch time activities, decided to run an upcoming race with a friend, and decided to ask a family member how to do their activity. All three of these strategies were also supported by Anstiss, Meijen, and Marcora's (2020) study which demonstrated Masters athletes developed their self-efficacy through social support and verbal encouragement provided by friends and family.

Sub-Theme 2C: Strategies to Develop Self-Efficacy Beliefs Through Inspiring People's Stories. Participants in this study built their self-efficacy beliefs by following a strategy of watching inspiring people. They watched posted social media videos of training sessions, and watched older people accomplish extraordinary things. Feltz et al.'s (2008) study supports this strategy as they claimed one source of information to develop self-efficacy beliefs was by attaining information through vicarious sources. However, in Feltz et al.'s (2008) study, the development of self-efficacy beliefs was also developed from information athletes obtained from

assessing their physiological and affective states. Findings from the current study did not demonstrate this strategy. The reason for this discrepancy may be that participants in the current study had been active in endurance sports for a minimum of fifteen years. As a result of this experience, they were aware of their physical, cognitive, and emotional capabilities and limitations. Assessing these states did not impact their decision to take up endurance sports.

Main Theme 3: Strategies Around Setting Initial General Goals

The third main theme identified during the pre-decisional phase was the participants' strategies around setting initial general goals. The basic tenant of goal setting theory developed by Locke and Latham (2002) stated that specific difficult but attainable goals lead to a higher level of performance. However, in a study by Seijts and Latham (2001), the authors claimed that specific, difficult goals do not always lead to better performance than simply urging people to do their best. To progress to the pre-actional phase of the goal pursuit process, it is important that the setting of initial goals do not create a situation where the participants become demotivated or lose their self-efficacy beliefs in their ability to perform their chosen activities. Three strategies around setting initial general goals were identified from the study.

Sub-Themes 3A – 3C: Strategies to Set Initial General, General Event, and General Performance Goals. When older adults set specific difficult goals without having first participated in an activity, they can be demotivated, especially when they have lost some of their physical capabilities through inactivity and/or the aging process. As such, setting effective goals is important for older athletes. In the pre-decisional phase, participants in the current study were about to start participating in endurance sports and did not initially know what was realistic and attainable. Three sub-themes pertaining to goal setting were identified, goal setting in general

and in relation to events and performance. For discussion purposes, these sub-themes have been combined below.

For initial general goals, the participants followed the strategies of setting no overall goals, setting a goal to just survive their activity, and just see how fast or far they could go in their activities. For event goals, the participants set a distance they wanted to do such as a marathon, however, they set no time frame for when they would accomplish the goal and they did not pick a specific event, such as the Boston marathon, they wanted to participate in. For performance goals, they only wanted to finish their event within a reasonable time. These strategies were realistic and represented goals that had a high probability of being attained, which are supported by Weinberg's (2013) review of effective goal setting principles that stated that goals must be realistic, challenging, and moderately difficult.

Findings in the current study also demonstrated that when older adults are in the pre-decisional phase of the goal pursuit process, and when they need to develop their motivation, self-efficacy beliefs, and initial goals, they used specific strategies. For developing their motivation, their strategies focused on improving their current health condition, taking on new challenges, and being active with friends and family, as previously discussed. Further, strategies for developing their self-efficacy beliefs were to focus on their past experiences, seek social support from friends and family, and watching inspiring people. Strategies to ensure their initial goals were motivating, were to set general goals, general event goals, and general performance goals.

Overarching Theme 2: Pre-Actional Phase of the Goal Pursuit Process

Having developed their motivations, self-efficacy beliefs, and initial goals in the pre-decisional phase, participants then entered the pre-actional phase of the goal pursuit process. In

the pre-actional phase, individuals decided how, when, and where they pursued their activity' goals. During this phase, findings related to two main themes, namely, strategies to set specific goals and strategies to establish training plans.

Main Theme 4: Strategies Around Setting Specific Goals

Findings from the current study support Weinberg's (2013) goal setting principles and Locke and Latham's (2006) claim that successful goal setting depends on an athlete's recognition of mediators and moderators. Three sub-themes were identified from the current study, which were strategies to set specific time goals, distance goals, and performance goals. For discussion purposes, the sub-themes have been combined.

Sub-Themes 4A – 4C: Strategies to Set Specific Time, Distance, and Performance Goals. Findings demonstrated that participants' strategies for setting specific time goals were to establish how many hours per week they were going to train, focused on running for a specific time versus a distance, set specific time goals for each segment of a triathlon race, and set a specific time goal for a race slightly faster than their previous race times. Strategies for setting specific distance goals were to combine overall distance goals with sub-goals. Participants also create progressive sub-goals of competing in different race distances to ultimately meet their overall distance goals. Participants' strategies to set performance goals varied from finishing a race without walking, qualifying for a future race, beating specific competitors, placing within their age group category, outright winning a race, and establishing a range of performance goals from stretch goals to goals that were just okay. The extant literature supports these goal setting strategies including Weinberg's (2013) goal setting principles. These goals were realistic, challenging and process oriented. They were moderately difficult goals that facilitated greater effort and perseverance, and not so complex that the participants were not able to acquire the

required task knowledge and skills to perform the activity. There were both short and long-term goals and directed the participants, attention, effort, and action towards achieving their overall goals. In addition, they were measurable, realistic, challenging, and attainable.

Main Theme 5: Strategies Around Training Plans

For goal setting to become effective, it is important to have a feedback system to track progress (Locke & Latham, 2006). For participants in the current study, the feedback system was their training plans. Three sub-themes were identified pertaining to training plans, which were strategies around developing informal training plans, strategies around developing formal training plans, and strategies around monitoring progress against training plans. For discussion purposes, the three sub-themes have been combined as the literature addresses all three sub-themes.

Sub-Themes 5A – 5C: Strategies to Develop Informal and Formal Training Plans and Strategies to Monitor Training Progress. Participants who developed informal training plans adopted strategies to train with a friend or a mentor, developed their own training plans, or followed a plan set out in training manuals. Participants whose strategy was to follow formal training plans, joined associations that had specific coaches for their sport, and followed plans developed by coaches that respected their current and potential ability and joined association that had like-minded athletes. Having developed informal or formal training plans the participants then developed a feedback system to monitor their progress. They kept daily journals on what they had achieved in their training and how they felt about their training sessions. They recorded specific aspects about their training as soon as they finished the training session and, in several cases, compared their current progress to previous training sessions.

Lunenburg's (2011) review of goal setting theory defined three aspects of goal planning that the current study demonstrates. First, goals and the goal plans must be accepted by the athlete to be effective. In the case of informal goal plans these are directly created by the participants and therefore are by their nature acceptable by the participants. With formal goal plans the participants must receive these plans from a credible third party or develop them together with a credible third party. These are provided by coaches chosen by the participants or by associations chosen by the participants, which indirectly make them acceptable by the participants. The second aspect of effective goal plans are that they must create deadlines. In both informal and formal plans, the participants in this study created the plans to meet specific events that had defined dates. Plans were developed to meet one-off events, such as achieving a qualifying time for the Boston marathon in the preceding year of the marathon. Plans were also developed to get the participants physically ready to compete in the annual world championships. The third aspect of goal plans are that they must provide feedback on how the participants are progressing. For the participants who had coaches, the feedback was given verbally by their coaches who referred to how the athletes were doing against their plans. For most of the participants in this study, it was self-recorded feedback when they put information into their various forms of training logs and compared how they were doing against their plans or against past results.

Findings in the current study demonstrated that, when older adults are in the pre-actional phase of the goal pursuit process, and when they need to set specific goals and effective training plans, they used specific strategies. For goal setting, they used strategies to set specific time, distance, and performance goals. For effective training plans, they used strategies to develop

informal and formal training plans plus used strategies to monitor their progress against these plans.

Overarching Theme 3: Action Phase of the Goal Pursuit Process

In the action phase of the goal pursuit process, participants enacted their plans and engaged in their chosen activities. During this phase, participants relied on self-regulation strategies to overcome constraints. Self-regulation involves controlling their thoughts (cognitive self-regulation), actions (behavioural self-regulation), and feelings (emotional self-regulation) (Baumeister & Voks, 2004). Accordingly, three main themes were identified from the study's findings: cognitive self-regulation strategies, behavioural self-regulation strategies, and emotional self-regulation strategies.

Main Theme 6: Cognitive Self-Regulation Strategies

Cognitive self-regulation involves the development of thoughts that affect one's use of cognitive abilities to integrate learning processes to support the pursuit of personal goals (Zimmerman, 2000). Four sub-themes were identified from the current study: cognitive strategies used before participating in an activity, cognitive strategies to maintain focus, cognitive strategies to build confidence, and cognitive strategies around a positive mind-set.

Sub-Theme 6A: Cognitive Strategies Before an Activity. Participants' pre-race cognitive strategies were to develop a back-up plan in case they did not meet their goal on the first try to qualify for a future race. This strategy was supported by Grand Maison's (2005) study of mental skills as a form of cognitive self-regulation. That study demonstrated that triathletes used the mental skill of competition planning, which was to think about and plan things that they wanted to do in future situations. Developing a back-up plan for a second qualifying marathon race is an example of competition planning in the current study. Another cognitive strategy to

use before a race in Grand Maison's (2005) study was the use of the mental skills of imagery. Participants in the current study used imagery or visualization of the upcoming racecourse as a cognitive strategy to prepare for things that could happen during a race, including visualizing what to do if these things happened.

Sub-Theme 6B: Cognitive Strategies to Maintain Focus. Participants' cognitive strategies to maintain focus during an event were sometimes to focus on proximal cues and, at other times, look distally forward to the next part of the race. Participants also employed a strategy to bring their focus back to themselves, disregard others, and run their own race. These strategies are supported by past research and are referred to as attentional deployment (Gross & Thompson, 2007) where athletes direct their attention to stimuli that do not negatively impact their performance.

Sub-Theme 6C: Cognitive Strategies to Build Confidence. In the current study, participants' cognitive strategies before a competitive event were to structure training sessions that built up their confidence to not take the easy way out of difficult situations. Participants in the current study, when presented with an option to stop training, knew that if they kept on going, they would complete the session and gain the full benefits of their training and be better prepared for their race. This represents a metacognitive strategy where athletes develop an understanding of what they know and how they can use that knowledge to regulate their behaviour (Flavell, 1979).

Participants cognitive strategies during events were also to use self-talk to build confidence, especially as encouragement in their ability to finish a race. Self-talk is an often-employed cognitive strategy by athletes; however, most studies have focused on if self-talk improves performance and overall findings are mixed. Hatzigeorgiadis, Zourbanos, Galanis, and

Theodorakis (2011) demonstrated that self-talk was more effective for novel tasks, compared to well-learned tasks, and self-talk was more effective for tasks involving relatively fine motor skills (golf, basketball) compared to relatively gross motor skills (cycling, long distance running). However, de Matos et al. (2021) demonstrated that self-talk increased an athletes' outcome expectations, which lead to higher potential motivation change in effort, and improved endurance performance. Dolan, Houston, and Martin (2011) also demonstrated that self-talk was a more often used cognitive strategy than visualization and relaxation. The literature supports the use of self-talk, and although the effect on performance was mixed, it should be acknowledged that in the current study, the participants' definition of performance was to just finish their race.

Participants in the current study also used the cognitive strategy of focusing on numbers such as distance markers to build up their confidence around their progress during a race. This strategy is supported in the literature by Samson, Simpson, Kamphoff, and Langlier's (2015) study of distance runners. That study demonstrated that counting was a successful strategy to deal with distance and discomfort while competing in long distance races.

Sub-Theme 6D: Cognitive Strategies Around a Positive Mindset. Williams and Kane (2001) demonstrated that developing mental skills can be an effective cognitive strategy in enhancing an athlete's performance. Further, in a study on triathletes, Grand Maison (2005) demonstrated that one important mental skill was having a positive mindset. Participants in the current study positive mindset strategies were to acknowledge that they were fully prepared for a race, disassociate from all negative thoughts, and be open and flexible to trying a different approach if the first one did not work.

Main Theme 7: Behavioural Self-Regulation Strategies

Behavioural self-regulation involves a process that enables individuals to control their physical actions (Baumeister & Voks, 2004). Five sub-themes were identified in the current study that pertained to behavioural self-regulation strategies used during training and racing. Specifically, these behavioural self-regulation strategies were used to: deal with participating in poor weather conditions; poor health conditions; injuries; equipment and race logistics, and hills. The sub-themes of strategies to deal with poor weather conditions, poor health conditions, potential injuries, equipment and race logistics, and hills while participating have been combined and discussed below within Gross and Thompson (2007) five phases of self-regulation. These strategies were originally put forward within the context of emotional regulation. However, in certain situations can entail behavioural self-regulation.

Sub-Themes 7A – 7D: Strategies to Deal with Weather, Health Conditions, Injuries, Equipment and Race Logistics, and Hills.

Participants in the current study created training options to ensure their activities occurred in a positive environment avoiding poor weather and ran on surfaces that did not negatively affect their knees. They shorten their race distance down to ensure that they did not get into a situation where poor health would affect their performance, and they trained near a hospital to ensure they could quickly receive treatment if needed. They also used situation selection strategies to overcome equipment and logistic obstacles. To avoid damaging or losing equipment while travelling to an event, they purchased new equipment at their destination and developed a strategy to get to the start of a race at the right time to avoid having to wait for long periods of time without access to shelter and facilities.

The second phase of self-regulation as outlined by Gross and Thompson (2007) is situation modification where individuals modify their situations or the contexts in which they find themselves directly to alter the eventual emotional impact. Participants in the current study used an implementation intention strategy to modify poor weather situations by carrying three sets of lenses for their glasses on long bike rides. When the weather changed to avoid situations of not being able to see properly, they modified the situation by switching lenses. When facing potential injury situations, they modified the situation by changing their physical movement patterns to protect the injured area, and when recovering from injuries they modified their recovery programs to meet their individual situation.

Lastly, hills are an environmental obstacle that endurance athletes usually encounter in running or cycling events. In addition to incorporating hills into their training programs participants in the current study used attentional deployment (Gross & Thompson, 2007) where they shift their attention away from the situation of having to climb a huge hill to riding through small 20-foot sections, only focusing on the next twenty feet, and walking if necessary if a hill became too difficult, and to follow their pre-race pacing strategies.

Sub-Theme 7E: Strategies to Use During Training and Racing. Strategies participants used to deal with training and racing reflected internal constraints of muscle fatigue and dehydration. Developing a pacing strategy is one way to prevent muscle fatigue. Pacing strategies have been extensively covered in the literature for marathon running (Nikolaidis & Knechtle, 2017), swimming (Rodriguez, Veiga, Garcia, & Gonzalez-Rave, 2021), cycling (Wu et al., 2015), and triathlons (Wu et al., 2015). Strategies varied slightly between sports, distance, and age of the participants. The trend for older athletes was to adopt a constant pace for the best performance. With one exception, participants in the current study did not discuss pacing

strategies. The exception was a strategy that focused on going slower than the desired pace at the start of a marathon, then increase the pace during the middle part of the race, and then for the final third, giving it all. The literature (e.g., Breen, Norris, Healy, & Anderson, 2018) demonstrated that this was a potential successful strategy for high performing experienced athletes. The one participant exception in the current study would be considered both high performing and experienced as he has competed in over two-hundred races, winning his age group several times. The balance of the participants did not discuss pacing strategies. The focus of the study was on perseverance strategies used to overcome obstacles. The participants were forthcoming during their interviews about obstacles. After ten or more years involvement in endurance sports, pace no longer represented an obstacle.

Participants in the current study who were involved in shorter distance events were aware of the need to maintain proper hydration levels. Most of these events included well positioned course aid stations where they could re-hydrate. However, ultra-runners who raced up to 24-hours tended to forget recommended hydration strategies, which is supported by previous research (Belval et al., 2019). They forgot to assess the changing environmental conditions, wear the proper clothing, and follow their pre-race hydration plan. Participants in this study used a strategy of timing clues (e.g., watch beeps) to remind themselves to take on fluids at a specific time and avoid the dangers of relying on noticing when they felt thirsty.

Main Theme 8: Emotional Self-Regulation Strategies

Emotional self-regulation is a process where endurance athletes' control which emotions they have, when they have them, and how they experience and express these emotions when they encounter stress (Richards & Gross, 2000). A critical process in emotional self-regulation is coping (Lazarus, 1999). Four sub-themes were identified from the current study that represent

emotional self-relation strategies used by participants. More specifically, these were: emotional self-regulatory strategies to deal with anxiety, frustration, fear, and disappointments. For discussion purposes, these sub-themes have been combined as the overall findings support existing research.

Sub-Themes 8A – 8D: Strategies to Deal with Anxiety, Frustration, Fear, and Disappointments. O’Neil and Steyn (2007) demonstrated that two strategies to deal with emotional related stress by athletes was to change the source of the stress or to change the athletes’ perception of the stressor or their perception of the stressful situation. The second supported research was Gaudreau and Blondin’s (2004) classification of coping strategies which included defined task-oriented or problem-solving coping. These coping strategies included mental imagery, thought control, relaxation, logical analysis, seeking social support, and effort expenditures. The findings from the current study all pertain to these emotional self-regulation strategies as summarized (and classified) below in terms of these past studies.

The participants in the current study encountered anxiety both before and during activities. When anxious before an event, participants strategies were to seek positive support from their family (seeking social support) and, in some cases, visualize (mental imagery) part of the race where they anticipated anxious moments and how they would deal with those moments. To reduce anxiety during a race, participants’ strategies were to slow their breathing (relaxation), focused on their techniques (thought control), counted race markers (thought control), and acknowledged that they did not always have to do what they planned to do (effort expenditures). The participants’ strategies to deal with frustrations from injuries were to stay focused on their recovery plans (thought control). Strategies to reduce frustration resulting from the feeling of not

progressing fast enough during races were to stay in the moment and forget about the future (thought control).

The participants encountered two major forms of fear: fear of encountering animals during their activities and fear that they could be injured because of overtraining or over racing. As a strategy around facing the unknown consequences of encountering animals, they reverted to laughing, acknowledging the fact that the animals were probably scared of them (change perception of stressful situation). One participant also started carrying a device that scared away animals (changed the source of stress). As a strategy to avoid the fear of injury, participants reduced the number of events they would train for and compete in each season (reduced effort expenditures). As strategies to overcome disappointment, participants accepted that they had to try again if they did not meet qualifying goals (thought control). When they were disappointed in not meeting up with their support crews during ultra-races, they changed their strategy that no matter if they were moving faster than expected they would not run on ahead but stick to their logistic plan (logical analysis). Finally, to avoid ongoing disappointments they switched their focus from what they could not do to focus only on what they could do (changed the source of the stress).

Findings in the current study demonstrated that when older adults are in the action phase of the goal pursuit, they use cognitive, behavioural, and emotional self-regulation strategies. Cognitive strategies were used to develop thoughts to affect their cognitive skills around focusing, building confidence, and developing a positive mindset. Behavioural strategies were used to control their physical actions around poor weather, poor health conditions, injuries, equipment failures, race logistics, and hills. Emotional strategies were used to control when and how they experience anxiety, frustration, fear, and disappointment during their activities.

Overarching Theme 4: Goal Attainment and Post-Actional Phase of the Goal Pursuit

Process

In the goal attainment and post-actional phase of the goal pursuit process, participants re-evaluated their goals and set future goals.

Main Theme 9: Goal Re-Evaluation and Setting Future Goals

As participants enter this phase, prior to goal attainment, they sometimes re-evaluate their current goals, revise their goals, and in some cases completely withdraw from their activity. This process can occur before an activity, or during an activity. Participants also attain their goals. Having attained their goals, they cycle back to the pre-decisional phase and set future goals. Three sub-themes were identified from the current study: goal re-evaluation before an activity, and during an activity, as well as setting future goals. For discussion purposes, the first two sub-themes are combined below as the existing literature addresses both time periods.

Sub-Themes 9A – 9B: Goal Re-Evaluation Strategies Before and During an Activity.

All participants in the current study encountered the negative effects of the Covid-19 pandemic as upcoming races were cancelled, including world championships. To follow their goals, the participants re-evaluated their training plans, relied on social media to measure their progress, and obtained social support when needed. They continued to race either by themselves on race day or participated in virtual races. During events, one effective goal re-evaluation strategy was withdrawal from the activity. Athletes tend to perceive two general reasons to quit their activities, which are individual reasons and social reasons. The dominant individual reason was injuries (Menheere et al., 2020). Findings from the current study also demonstrate this point. In recognition of the threat of injuries, or having actual injuries before an event, the participants withdrew from their current activities, started an entirely new activity, or broke their current

activity down into less injury prone segments. During activities, potential injuries from existing health conditions forced participants to re-evaluate their activity, and sometimes their activity took as a toll on their body, and they had to stop and seek medical attention.

Goal re-evaluation and withdrawal decision happens in progressive steps during an activity (Philippe, Rochat, Vauthier, & Hauw, 2016). Participants in the current study demonstrated these progressive steps. They first experienced pain and discomfort, adjusted their pace, re-hydrated, changed their view of the stressful situation, and then when they negatively assessed the situation, they withdrew from the activity. Notwithstanding having to withdraw from an event, athletes do not typically quickly abandon their goals when they did not meet them (Williams, Donovan, & Dodge, 2000). Participants in the current study did withdraw from events due to injuries, exhaustion, and dehydration. They maintained their original goal, however, re-evaluated their time frame for achieving the goal, often returning the following year to participate in the same event. The literature cites social reasons as the second most dominant reason to withdraw from an activity (Menheere et al., 2020). Findings from the current study indirectly demonstrate this point as well, as some participants were ready to withdraw from an event, but social support enabled their perseverance.

Sub-Theme 9C: Setting Future Goals. Once participants attained their original goals, they made decisions to either change their serious leisure activity or they set new future goals. The decision to change their activity was based on Lazarus (1999) primary appraisal process where the participants determined if continuing did not represent a benefit to them. Only one participant in the current study changed his serious leisure activity from participating in ironman triathlons to golf, citing his view that he could benefit more from the lifestyle associated with playing golf than the ironman lifestyle. If the participants decided to carry on with their activities, they set

future goals. They cycled back to the pre-action phase and established future goals based on effective goal setting theory (Locke & Latham, 2002). Participants continued to strive for specific distance, event, and performance goals. Some of the participants, having been involved in endurance sports for ten to fifteen years, were satisfied with their accomplishments and they adopted more general, realistic, and moderately difficult goals (Weinberg, 2013) of staying active to maintain their health, fitness, and being able to enjoy activities with their grandchildren, for example. Findings in the current study demonstrated that when older athletes are in the goal attainment and post-actional phase of the goal pursuit process, their perseverance strategies were to cycle back to the pre-actional phase and set new specific effective goals. Findings also demonstrated that when participants were satisfied with their specific accomplishments, they continued with their activities to stay healthy and enjoy future activities with their family members.

Limitations

The present study has some limitations that should be taken into consideration when interpreting the findings. First, the participants in the study represented a limited range of demographic characteristics in terms of ethnicity and socio-economic status. All participants were White and had the financial resources to enable them to participate in serious leisure. It should be noted that the recruitment strategy for this study began with convenience sampling in a community that was limited in its diversity. This strategy was supplemented with snowball sampling, which resulted in homophily. It also should be noted that the types of endurance activities studied, in general, have limited diversity in terms of social-economic status and ethnicity throughout the general participation base. As a result, the perseverance strategies discussed may not represent strategies that are transferrable to other ethno-racialized or socio-

economic groups, which is an important area of future research. Second, due to the retrospective nature of the data collected on life experiences of the participants, this likely has resulted in recall bias. Third, the findings were limited by the eligibility criteria. Fourth, the research was limited as it was an initial step in studying perseverance strategies. The study was focused on exploring what perseverance strategies older adults used while they participated in endurance sports and when they used them for more descriptive purposes. The study did not explore why or how effective these strategies were. Fifth, the focus on endurance sports could also be considered a limiting factor as the nature and difficulty of endurance sports may not represent or include older athletes who desire a lower level of difficulty in their activities. Sixth, the study only looked at effective strategies used by the participants and did not explore ineffective strategies.

Conclusions and Suggestions for Future Research

The aim of this study was to explore if older adults used perseverance strategies while they participated in endurance sports as a type of serious leisure. Research questions asked what strategies participants used and when they used these strategies. Findings were discussed within the four-phase framework of the goal pursuit process. The findings demonstrated what perseverance strategies the participants used to overcome each obstacle during the goal pursuit process. Further, each phase represented when they used a strategy, which was more specifically defined when the participants encountered an obstacle during each phase.

In recognition of the limitations in this study, resulting from the limited participant characteristics, future studies should replicate the current study with participants from a more diverse ages, ethnicities, social-economic statuses, as well as different types of endurance sports. To overcome the limitations related to the research design, future studies should look to conducting interviews immediately after events or more longitudinally to mitigate recall bias.

Participant bias could also be reduced by incorporating probing questions that uncovered, not only the effective strategies used to overcome obstacles, but also the ineffective strategies. Limitations that resulted from the eligibility criteria could be mitigated by future research focusing on strategies used by participants in one type of endurance sport, or one specific strategy used across all endurance sports. Future studies should also look to expand the eligibility criteria which would result in increasing the overall universe from which the participants could be selected. One area to consider would be to look at other sports within the definition of serious leisure that take less effort to participate in but still require perseverance. Future studies could also look at the individuals that participate within the other areas of amateur serious leisure such as arts, science, and entertainment or individuals that participate in the hobby or volunteer segments of serious leisure.

The findings in the current research reflect common perseverance strategies that were used by participants in certain situations. Participants also discussed other strategies that were more related to their own approach to overcoming obstacles or were related to unique situations not encountered by others, that were not part of this study. Future research could focus on these perseverance strategies or unique situations within a larger sample universe to determine if they should be considered within the study's two research questions. The findings from the current research also demonstrated when older adults used perseverance strategies in addition to what strategies they used. However, the study did not address why they used these strategies or how effective these strategies were. As such, future studies should address these two questions as the answers could have a significant impact with older adults who get frustrated when first attempts at trying something new or at attempting something at their upper limit of acceptable difficulty.

In the current study, participants successfully negotiated constraints in the pre-decisional and pre-actional phase of the goal pursuit process by employing strategies around motivation, self-efficacy beliefs, and effective goal setting and goal planning. Most of the participants in this study did not take up their endurance sports activities until their mid-fifties. Future studies should explore if the non-involvement in endurance sports during the early to mid-adulthood years was a result of lack of perseverance strategies around motivation, self-efficacy beliefs and effective goal setting and planning, or due to other reasons (e.g., non-negotiable work and family constraints). The participants in this study also demonstrated many different perseverance strategies during their action and post action phases of their goal pursuit. Future studies should explore how and when these perseverance strategies were developed during athletes' early and mid-adult years.

The research findings of this study represent a novel and significant contribution to the current literature on older adults' participation in serious leisure, what constraints they encounter and what strategies they used to overcome these obstacles. These findings may be helpful in the successful promotion of serious leisure participation among older adults at least in endurance sports, but perhaps in other serious leisure activities outside the realm of endurance sports. This study also highlights the value of collecting rich qualitative description data for the study of first-person accounts of older adults who have a lifetime of lived experiences that represent to all sorts of activities as well as the internal and external circumstances in which activities occur, or can occur, to support a self-determined and personally meaningful active aging process.

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Appendix A

Email Invitation to Participate in Study

Email Subject:

Research Opportunity

Email Text:

You are invited to take part in a research study being conducted by Chris Pocock and Brad Meisner in the School of Kinesiology and Health Science at York University. We are conducting virtual interviews as part of this research that will explore the existence and use of perseverance strategies during participation in serious leisure. Serious leisure is defined as a systematic pursuit of an amateur, a hobbyist, or a volunteer activity that participants find so substantial and interesting that, in a typical case, they launch themselves on a career centered on acquiring and expressing its special skills, knowledge, and experiences. *We are looking for people who are at least 55 years of age, have actively participated in serious leisure in the past five years, and are willing to participate in an interview on the topics of serious leisure and perseverance strategies.*

The interview would take place over Zoom and would last approximately 45 to 60 minutes. It will be guided by a set of questions to capture your experience using perseverance strategies to participate in serious leisure activities. Your responses to the questions will be anonymized and your information will be kept strictly private and confidential. If you are interested in knowing more about the project, or are willing to participate, please contact Chris Pocock by replying to this email (chrisp50@my.yorku.ca). Also, if you know anyone else who is eligible to participate in this study, please forward this email onto them. If you have any questions, please do not hesitate to ask.

Thank you,

Chris Pocock, MBA and Brad Meisner, PhD

School of Kinesiology and Health Science

York University

Contact: chrisp50@my.yorku.ca

Appendix B

Consent Form for Zoom or Phone Interview

Study Title: Older adults, perseverance strategies, and serious leisure activities: A qualitative study

Researchers: Brad Meisner, PhD (meisnerb@yorku.ca) and Chris Pocock, MBA (chrisp50@my.yorku.ca)

Purpose of the Research: To explore if and how older adults use perseverance strategies in their pursuit of serious leisure activities.

What You Will Be Asked to Do for this Research: This study will require approximately 60 minutes of your time to complete a short survey and a semi-structured interview either using Zoom audio/video-conferencing software or the telephone. The first part of the study will consist of a few demographic close-ended questions about your age, gender, education, serious leisure involvement, etc., followed by open-ended questions to explore your engagement in serious leisure activities. Zoom or telephone interviews will take place at a quiet and private location of your choice.

Use of Audio/Video-Conferencing Software: This study will use Zoom, an externally-hosted cloud-based service, to collect data. Recordings (audio/video) will be saved in a password-protected file to research team members' local computer, not the cloud-based service. However, when information is transmitted over the internet, privacy cannot be guaranteed. There is always a risk that your responses may be intercepted by a third party (e.g., government agencies, hackers). Further, while York University researchers will not collect or use IP address or other information which could link you to your computer or electronic devices without informing you, there is a small risk with any platform, such as Zoom, that information collected on external servers fall outside the control of the research team. The researchers acknowledge that the host of the online products (Zoom communication technology) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researchers, it will not be used or saved without participants' consent on the researchers' system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus the confidentiality and privacy of data cannot be guaranteed during web-based transmission. If you are concerned about these issues, we would be happy to make alternative arrangements (where possible) for you to participate, perhaps via telephone. Please contact Chris Pocock (chrisp50@my.yorku.ca) or Brad Meisner (meisnerb@yorku.ca) for further information.

Please note that it is the expectation that participants agree not to make any unauthorized recordings of the content of the meeting/data collection session.

Risks and Discomforts: There are no foreseen risks or discomforts for your participation in this research study other than those stated above pertaining to the use of Zoom audio/video-conferencing software. To decrease the likelihood of a third-party interception, the Zoom meeting will require a password to enter.

Benefits of the Research and Benefits to You: You may benefit from participating in this research study by gaining experience with research and reflecting on your lived experiences that may help others participate in serious leisure activities in the future. This research will also contribute to the literature that examines serious leisure involvement.

Voluntary Participation: Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision to not participate will not influence the nature of your relationship with York University or any of the researchers, either now or in the future.

Withdrawal From the Study: You can stop participating in the study at any time, for any reason. If you do decide to stop participating, you may withdraw without penalty. Your decision to stop participating or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. If you withdraw from the study, any data collected prior to withdrawing from the survey may still be used for analysis.

Confidentiality: All information you supply during the research will be held in strict confidence and will be kept private. Only the research team will have access to the information you provide. No third parties will be informed of your choice to participate. When collecting the data, we will ensure that the rooms are private where others will not see or hear you. Your real name will not appear in any report or publication of the research. We will use a pseudonym (not your name) in our records so that the information we have about you does not contain your name. All electronic records will be kept secure in a password-protected file on the researcher's personal password-protected computer or on a York University secure firewalled server. Any hardcopies of your data will be safely stored in a locked facility and only research staff will have access to this information. Data will be stored for seven years after data collection is complete. After this period has ended, the data will be destroyed using a paper shredder and deletion of electronic data via overwriting and reformatting of external drives. Confidentiality will be provided to the fullest extent possible by law.

Future Research Use: The data collected in this research project may be used, in an anonymized form, by members of the research team in subsequent research investigations exploring similar lines of study. Any secondary use of anonymized data

by the research team will be treated with the same degree of confidentiality and anonymity as in the original research project.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact Chris Pocock (Email: chrisp50@my.yorku.ca) or Brad Meisner (Email: meisnerb@yorku.ca). This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Senior Manager and Policy Advisor for the Office of Research Ethics, 5th Floor, York Research Tower, York University (Telephone: 416-736-5914 or E-mail: ore@yorku.ca).

Consent Form for Interview Participants**Signature Page****Legal Rights and Signatures:**

By signing below, I consent to participate in this research study. I understand the nature of this project and wish to participate. I consent to the recording of my interview and give permission to use direct but anonymized and unattributed quotations in the publications arising from this research. I am not waiving any of my legal rights by signing this form.

Signature _____

Participant

Date _____**Signature** _____

Interviewer

Date _____*Please see other attachment.*

Appendix C
Demographic Questionnaire

Please answer the following questions honestly.

All information provided will be private and confidential.

1. What is your age? _____

2. What is your race/ethnicity (e.g., Black, White, etc.)? _____

3. What is your gender?

Female Male Transgender Gender Neutral

4. What is your employment status?

Full time Part time Unemployed Retired

5. What is approximately your average annual household income over the past five years, in which of the following group does your income fall?

\$0 to \$19,999 \$20,000 to \$39,999 \$40,000 to \$59,999
 \$60,000 to \$79,999 \$80,000 +

6. What is the highest level of education that you have completed?

No high school diploma High school Trades training
 Community college University undergraduate University graduate

Appendix D

Serious Leisure Questionnaire

Leisure has been defined as something you choose to do in your free time. Serious leisure is defined as a systematic pursuit of an amateur, a hobbyist, or a volunteer activity that participants find so substantial and interesting that, in a typical case, they launch themselves on a career centered on acquiring and expressing its special skills, knowledge, and experiences.

Over the past five years, please indicate up to three activities you participated in that you would consider serious leisure.

1. _____
2. _____
3. _____

For each of your activities, please indicate if the following characteristics apply:

1. **Perseverance:** An ability or trait to continue to pursue an activity despite occasional hardship, setbacks or even failure.
 Activity 1 Activity 2 Activity 3
2. **Career pursuits of endeavors:** An individual goes through various development stages over a period of time, acquiring skills related to a serious leisure activity.
 Activity 1 Activity 2 Activity 3
3. **Significant personal efforts:** The application of acquired knowledge, training, and skill development.
 Activity 1 Activity 2 Activity 3
4. **Durable individual benefits:** Gaining of personal and social benefits through participating, such as self-actualization, self-enrichment, feelings of accomplishment, social interaction, and belongingness.
 Activity 1 Activity 2 Activity 3
5. **A unique ethos:** Developing a strong identification with a chosen activity.
 Activity 1 Activity 2 Activity 3

6. **Develop a strong identity with their activity:** Developing a strong identity represented an individual's emersion in a unique ethos with other participants sharing attitudes, practices, and goals.

Activity 1 Activity 2 Activity 3

Appendix E

Semi-Structured Interview Questions

Thank you for agreeing to participate in this research study. As you know, we are interested in hearing about your involvement in serious leisure, and if applicable strategies that you used to enable you to participate or maintain your participation. I have questions prepared, but this is more of a friendly conversation than a formal interview. To help with this conversation, I have provided the following definitions:

Constraints – Anything that inhibits or reduces your leisure participation or satisfaction.

Perseverance – An ability to continue to pursue an activity despite occasional hardships, setbacks, or even failure.

Self-Regulation – The ability to control one's thoughts, emotions, and actions.

Do you have any questions before we begin?

Open-Ended Questions

1. To better understand your current physical activity level, can you provide a brief summary of activities you participated in during your youth and early to mid-adulthood, including any accomplishments that you were especially proud of.
 - a. What sports did you play?
 - b. What was the highest level of competition reached?
 - c. Did you win any championships?

2. Describe a situation where a constraint altered your level of participation. What did you do about it?
 - a. Did you increase your effort?
 - b. Did you develop alternative ways to reach your activity goals?
 - c. Did you ask for help from others who had similar experiences?
 - d. Did you refrain from taking any action, hoping the situation would change?

3. Describe a situation where your understanding of the actions you need to take to reach your goal, changed your perception of your ability to reach the goal. What did you do about it?
 - a. Did you consider taking a longer time to reach the goal?
 - b. Did you view your efforts as a learning experience or strictly from a performance perspective?
 - c. Did you seek comparative performance information from others who have succeeded?

4. Describe situations where you felt you should change your goal. What did you do about it?
 - a. Did you break larger goals down into sub-goals and create a sub-goal hierarchy?
 - b. Did you convert performance goals into learning goals?
 - c. Did you scale back your goals?

5. Describe a situation where meeting a constraint, you adopted coping strategies to increase self-regulation. What did you do?
 - a. Did you seek temporary distractions?
 - b. Did you seek social support and inspiration?

6. How has COVID-19 affected your participation in your serious leisure activities?
 - a. What adjustments have you made to your type of activities?
 - b. How have you adjusted your seasonal goals?
 - c. As a consequence of self-isolation and physical distancing, how have you been able to maintain your identity with your activity?

Appendix F

TCPS 2: CORE Certificate of Completion

