# EXPLORING WOMEN ATHLETES' SELF-COMPASSION, SPORT PERFORMANCE PERCEPTIONS, AND WELL-BEING ACROSS THE COMPETITIVE SEASON: A MIXED METHODS APPROACH

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## Abstract

Self-compassion is an adaptive self-attitude that can directly help people during difficult and challenging times (Neff, 2003a, 2003b, 2011). Within sport, self-compassion has been noted as a resource for women athletes when facing challenges and emotionally difficult experiences, while promoting psychological well-being (e.g., Ferguson, Kowalski, Mack, & Sabiston, 2014, 2015; Mosewich, Ferguson, McHugh, & Kowalski, 2019). Challenges women face in sport related to performance perceptions, body-related well-being, and eudaimonic well-being are often associated with self-criticism, evaluation, focus on competition outcomes, and social comparison (e.g., Gordon & LeBeouf, 2015), which have the potential to detract from athletes' experiences. However, the role of self-compassion in women athletes' sport performance perceptions and well-being over a competitive season has not been explored. To address these gaps in the literature, the purpose of this sequential explanatory mixed methods (Creswell & Plano Clark, 2018) program was to explore and describe the role of self-compassion in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being over a competitive sport season.

The first study in this research program was a quantitative pre-post competition design. The purpose of Study 1 was to explore if self-compassion is related to, and explains unique variance beyond self-criticism on, young women athletes' sport performance perceptions before and after a regular season competition. Study 1 included 82 women athletes who completed two survey packages within 5 days of a regular season competition (one pre- and one post-competition). The results highlighted that self-compassion was positively related to sport performance perceptions ($r$s = .21, $p < .05$ and .29, $p < .01$) and contributed between 3.4% and 8.1% unique variance in performance perceptions beyond self-criticism. Further, self-criticism was negatively related to one sport performance perception measure ($r = -.24, p < .05$).

Expanding on Study 1, Study 2 was a quantitative longitudinal multilevel measurement burst design, and the purpose was to examine women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being at multiple time points across a regular competitive sport season. Study 2 included 120 women athletes who completed a series of questionnaire packages distributed across their regular competitive season. Study hypotheses were examined through correlation, regression, latent growth curve model, and multilevel model analyses. Self-compassion was positively correlated with measures of sport

ii

performance perceptions ($r$s = .17 to .87, $p$s = .07 to < .001) and measures of well-being ($r$s = .16 to .82, $p$s = .05 to < .001). Self-compassion contributed unique variance beyond self-criticism in measures of sport performance perceptions ($\Delta R^2$s = .04 to .68, $p$s = .09 to < .001) and measures of well-being ($\Delta R^2$s = .03 to .67, $p$s = .09 to < .001). Further, self-compassion and some well-being measures, including meaning, vitality, and body appreciation were stable over time (not significant slope), while global sport performance perceptions, and well-being measures, including autonomy and relatedness, mastery, intuitive eating, and self-criticism varied over time (significant slope; slopes ranged from -.19 to .04, $p$s = .07 to < .001).

Study 3 was a qualitative pre-post competition design and the purpose was to explore and describe the role of self-compassion in women athletes' sport performance perceptions and well-being within the context of an athlete-identified important competitive event. This collective case study included nine women athletes who completed pre- and post-competition interviews (up to 5 days before/after). The data was represented through a holistic case description and themes. The holistic case description highlights the temporal and contextual processes through the Preparing, Competing, and Reflecting stages of the athlete-identified important competitive events. The overarching theme Continuing to Excel in Sport and the two sub-themes (a) Re-framing Criticism and (b) A Determined Approach together describe how the athletes benefited from self-compassionate perspectives in their important competitive events. The results highlight that women athletes utilize self-compassion to promote their sport performance perceptions and well-being in a variety of contexts and ways to excel in sport.

Together the studies highlight that (a) self-compassion is related to sport performance perceptions, eudaimonic well-being, and body-related well-being, (b) self-compassion contributes unique variance beyond self-criticism in athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being, (c) self-compassion plays a facilitating and protective role in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being, (d) that self-compassion is stable across the regular competitive season, and (e) that women athletes describe self-compassion as both protective and facilitative in competitive contexts.

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## Dedication

To my husband Madison.

You stand by me each and every day, making the impossible possible.

I love you.

# Table of Contents

**List of Tables**

# List of Figures

# List of Appendices

# List of Abbreviations

BAS: Body Appreciation Scale

BNSSS: Basic Needs Satisfaction in Sport Scale (A&R = autonomy and relatedness subscales)

BRWB: Body-Related Well-Being (Single Item)

CET-AV: Compulsive Exercise Test – Athlete Version

Evaluation: Retrospective sport performance evaluations (Single Item)

EWB: Eudaimonic Well-Being (Single Item)

Expectation: Prospective sport performance expectations (Single Item)

GPAI: Game Performance Assessment Instrument

IES-2: Intuitive Eating Scale – 2

Outcome: Retrospective sport performance outcome perception (Single Item)

Preparedness: Prospective sport performance preparedness perception (Single Item)

PSPP-R: Physical Self-Perception Profile – Revised (Mastery)

RSES: Rosenberg Self-Esteem Scale

SC-AV: Self-Criticism – Athlete Version

SC-AV (SI): Self-Criticism – Athlete Version (Single Item)

SCS: Self-Compassion Scale

SCS-AV: Self-Compassion Scale – Athlete Version

SCS-AV (SF): Self-Compassion Scale – Athlete Version (Short Form)

SCS-AV (SI): Self-Compassion Scale – Athlete Version (Single Item)

SoMS: Sense of Meaning Scale (Meaning)

SPPS: Sport Performance Perceptions Scale

SVS: Subjective Vitality Scale (Vitality)

# CHAPTER 1:

## General Introduction and Literature Review

**General Introduction and Literature Review**

**1.1 Women in Sport**

In sport there are many physiological (e.g., cardiovascular health), psychological (e.g., psychological need satisfaction), and social (e.g., interpersonal development) benefits that women athletes can experience (e.g., Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Crocker, 2016; Forcier et al., 2006; McArdle, Katch, & Katch, 2010; Weinberg & Gould, 2011). Despite the possible benefits of sport participation there are also challenging experiences that women athletes may face, either directly or indirectly related to their psychological well-being, in sport contexts (e.g., Bartholomew et al., 2011; De Souza et al., 2014; Reardon, et al., 2019). Further, due to the evaluative and outcome-orientated nature of sport contexts, many challenging experiences that women athletes face in sport are often related to self-critical thoughts, performance expectations, and evaluation by oneself and by others (e.g. Bartholomew et al., 2011; Crocker, 2016; Kowalski & Duckham, 2014; Weinberg & Gould, 2011). Just as the benefits of sport participation can translate to well-being outside of sport, the challenges that women face in sport also have the potential to have a negative impact on women beyond sport.

One particular challenge that women athletes face in sport that can impact their sport and general life experiences is self-criticism (Dunkley & Grilo, 2007; Mosewich, Crocker, Kowalski, & DeLongis, 2013; Powers, Zuroff, & Topciu, 2004). Harsh and continuous self-scrutiny and evaluation of the self are the cornerstones of self-criticism (Dunkley & Grilo, 2007), which is a destructive way to relate to the self and can infringe on overall and specific aspects of a person's well-being (Powers et al., 2004). Specifically, self-criticism research in general population samples has shown empirical relationships with depressive symptoms, over-evaluation of weight and body size (perception of being heavier or larger than actual body weight or size), self-silencing, general perfectionism, self-oriented perfectionism, socially prescribed perfectionism, concern over mistakes, and doubting of actions (Dunkley & Grilo, 2007; Powers et al., 2004). However, self-criticism has also been related to psychopathology within sport (e.g., Gordon & LeBoff, 2015; Reardon et al., 2019). Specifically, within sport contexts, self-critical athletes are at an increased risk of inflated self-expectations and under evaluation of performance, which can in turn lead to becoming dissatisfied with sport experiences (e.g., Bartholomew et al., 2011; Reardon, et al., 2019; Weinberg & Gould, 2011). Self-criticism and harsh self-evaluation can lead women athletes to become dissatisfied with their bodies either for performance-related (e.g.,

wanting to be faster, stronger) or appearance-related reasons (e.g., wanting to be the thin and toned ideal). While body dissatisfaction as a result of self-criticism is not unique to women athletes, researchers have highlighted that sport context factors can intensify existing body and eating psychopathologies (e.g., de Bruin, Oudejans, Bakker, & Woertman, 2011; Swami, Steadman, & Tovee, 2009). Women athletes who are highly dissatisfied with their bodies at times turn to eating psychopathologies and compulsive exercise as a means to control or change their bodies as they strive toward achieving performance or aesthetic goals (Gordon & LeBoff, 2015). When women athletes engage in eating psychopathologies and compulsive exercise their risk for challenges associated with the female athlete triad, such as low energy availability, relative energy deficiency, menstrual dysfunction, and low bone density, increases (Gordon & LeBoff, 2015; Mountjoy, et al., 2014; Nattiv, Loucks, Manore, Sanborn, Sundgot-Borgen, & Warren, 2007).

Due to the risks of self-criticism, body dissatisfaction, and eating psychopathologies that women athletes face in sport, research on self-attitudes, well-being, eating behaviour, and body image have generally been pathologically and diagnostically focused (e.g., De Souza et al., 2014; Mountjoy, et al., 2014; Nattiv et al., 2007). Because of this emphasis on women athletes' pathologies in sport research, and the focus on awareness of physical risk related to body and eating psychopathologies there is a resulting imbalance in the literature. Therefore, there is great need to research, explore, and seek to understand the many *positive*s, in addition to the challenges, related to sport participation for women athletes.

Although research tends to focus on challenging and difficult aspects of sport participation for women, there is a strong push for research to adopt a positive psychology perspective (Cash & Smolak, 2011; Hefferon & Boniwell, 2011). Positive psychology is multidimensional; focuses on the past, present, and future; and is oriented towards well-being, happiness, flow, personal strengths, and wisdom (e.g., Hefferon & Boniwell, 2011; Lazarus, 2003). Further, positive psychology acknowledges negative, neutral, and positive states; whereas pathology-driven research focuses only on negative states (Hefferon & Boniwell, 2011). A positive psychological perspective is therefore valuable to gain a more complete understanding of athletes' sport experiences. Recently sport psychology research with women athletes has started embracing a positive psychological approach, focused on understanding why athletes flourish in sport (e.g., Ferguson, Kowalski, Mack, & Sabiston, 2014; Ferguson, Kowalski, Mack,

& Sabiston, 2015; Gilchrist, Fong, Herbison, & Sabiston, 2018; Ingstrup, Mosewich, & Holt, 2017; Killham, 2014; Mosewich, Ferguson, McHugh, & Kowalski, 2019).

**1.2 Literature Review**

  **1.2.1 Self-compassion.** Informed by positive psychology and the pursuit of self-development, self-compassion has its roots in Buddhism and Eastern philosophy, and is often described as an alternative construct to self-esteem when examining and relating to the self within Western psychology (Neff, 2003a; 2003b; 2011). Similar to having compassion for others, self-compassion is a state of awareness that promotes kindness and social connectivity, which leads to helping behaviours; except with self-compassion the helping behaviours and kindness are extended toward oneself instead of being directed at others (Neff, 2003b). Neff (2003b) described self-compassion as "being touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness" (p.87). Self-compassion, as proposed by Neff (2003a; 2003b), is structured around three subcomponents and three corresponding opposing subcomponents: self-kindness and self-judgment, common humanity and isolation, and mindfulness and over-identification. Neff (2003b) discussed self-kindness as a state of "being kind and understanding toward oneself in instances of pain or failure rather than being harshly self-critical" (p.85). Further, self-kindness is experienced through a gentle understanding of the self, versus self-judgement that is based on overly critical or harsh thoughts and beliefs. The second component of self-compassion is common humanity, which is based on people seeing their experiences as connecting rather than isolating (Neff, 2003b). When people see their personal struggles as part of the "larger human experience" they have been self-compassionate (Neff, 2003b, p.85). Further, common humanity is experienced through interpersonal connection based on common struggles, versus isolation that is experienced through feeling separated from others based on personal struggles or challenges. The third component of self-compassion, mindfulness, is described as "holding painful thoughts and feelings in balanced awareness rather than over-identifying with them" (Neff, 2003b, p.85). It is this mindful perspective that helps people to move forward with their lives while still being aware of what they have come through. While mindfulness is experienced through a state of balanced awareness, over-identification is experienced through a lack of balance and a consuming focus on negative events, thoughts, and beliefs. Beyond these three components, self-compassion requires "enlightened self-interest"

(Lazarus, 2011, p.288), which has the potential to foster individual self-awareness and is aligned with a positive psychological perspective.

Self-compassion is distinct from other Western psychological constructs of the self, such as self-esteem, through one key difference: self-compassion does not rely on social comparison to establish feelings of self-worth or personal satisfaction (Neff, 2003a, 2003b). Reliance on self-esteem alone can lead to 'the better than average effect' that Neff and Vonk (2009) describe as "the need to feel superior to others just to feel okay about oneself" (p.211). In contrast, Neff (2003b) has explained that self-compassion "is *not* based on the performance evaluations of self and others, or on congruence with ideal standards" (p.92). Sole reliance on self-esteem may be flawed as high levels of self-esteem are related to maladaptive attitudes and behaviours such as narcissism (Neff & Vonk, 2009). Self-compassion may be an ideal complement to self-esteem because self-compassion is associated with similar benefits to self-esteem without being related to the challenges of self-esteem.

In general and clinical populations of men and women, self-compassion is negatively correlated with dysfunctional cognitions such as depression, anxiety, rumination, worry, stress, self-evaluation, shame, ego-defensiveness, self-enhancement, self-criticism, fear of failure, thought suppression, perfectionism, performance goals, body dissatisfaction, drive for thinness, and disordered eating behaviours (Ferreira, Pinto-Gouveia, & Duarte, 2013; Neff, 2011; Raes, 2010). Researchers have also identified positive relationships between self-compassion and positive psychological states such as life satisfaction, emotional intelligence, social connectedness, learning goals, wisdom, personal initiative, curiosity, happiness, optimism, and positive affect (Neff, 2011; Raes, 2010). Hence, not only is self-compassion protective, but self-compassion might also promote many positive psychological states.

More recently researchers have started to study women's self-compassion in sport and exercise contexts. Across studies with women athletes and exercisers the general conclusions that can be made are: that self-compassion is a valuable tool that helps women during challenging experiences such as responding to failure or injury, that self-compassion is negatively associated with social physique anxiety and self-criticism, and that self-compassion fosters an appreciation for one's physical body and promotes positive self-attitudes and perspectives in sport (Berry, Kowalski, Ferguson, & McHugh, 2010; Eke, Adam, Kowalski, & Ferguson, 2019; Epli Koc & Ermis, 2016; Ferguson et al., 2015; Huysmans & Clement, 2017;

Killham, 2014; Magnus, Kowalski, & McHugh, 2010; Mosewich et al., 2013; Schellenberg, Bailis, & Mosewich, 2016; Wilson, Bennett, Mosewich, Faulkner, & Crocker, 2019). Self-compassion may be particularly relevant to women in sport contexts where observations by others, evaluations, performance demands, high expectations, and self-criticism are commonplace. As discussed above, self-criticism can lead to destructive thoughts, emotions, and behaviours (Dunkley & Grilo, 2007; Gordon & LeBoff, 2015; Powers et al., 2004). It is possible that self-compassion may help athletes manage challenges in sport, such as social physique anxiety and self-criticism because self-compassion helps to foster an accepting self-attitude. The defining features of self-compassion may help to foster kind and accepting self-attitudes and promote lower levels of self-criticism through self-kindness, common humanity (social connectivity), and mindfulness. Research with women athletes has found that self-compassion is negatively associated with feelings of shame, social physique anxiety, objectified body consciousness, fear of failure, fear of negative evaluation, self-criticism, state rumination, and concern over mistakes (Epli Koc & Ermis, 2016; Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy, 2011; Mosewich et al., 2013). These findings suggest that self-compassion may be a tool for women athletes in that self-compassion can act as a buffer against, or tool to manage, difficult experience in sport. There is also initial support that self-compassion might play a role in women athletes *positive* sport experiences and *positive* aspects of well-being (Ferguson et al., 2014, 2015; Killham, 2014). For instance, research has shown that self-compassion is related to positive psychological well-being, body appreciation, and intuitive eating for women athletes (Ferguson et al., 2014, 2015; Killham, 2014). For example, when discussing self-compassion in their sport experiences, competitive women athletes between 16 and 35 years of age involved in team and individual sports have explained that their body appreciation and intuitive eating experiences in sport primarily stem from the self-kindness and mindfulness components of self-compassion (Killham, 2014).

Self-compassion research with women athletes is gaining momentum with qualitative and intervention studies highlighting the value of a self-compassionate mindset for women in sport (Eke et al., 2019; Ferguson et al., 2015; Frentz, McHugh, & Mosewich, 2019; Mosewich et al., 2013; Sutherland, Kowalski, Ferguson, Sabiston, Sedgwick, & Crocker, 2014; Wilson et al., 2019). Descriptions of how women athletes' transition from self-criticism and self-critical perspectives to self-compassion has also been initiated (Frentz et al., 2019). Mosewich et al.

(2013) considered the implications of a brief self-compassion intervention with self-critical women athletes. The brief self-compassion intervention consisted of a psychoeducational component and individual reflective writing exercises that were completed over a one-week period. The results of this randomized control intervention study showed that a self-compassion intervention increased self-compassion scores while also reducing self-criticism, rumination, and concern over mistakes for the women athletes when compared to the control group. Among other things, these findings suggest that self-compassion might be a tool to help manage self-criticism and negative events in sport for women athletes (Mosewich et al., 2013). However, in qualitative research conducted by Ferguson et al. (2015) and Sutherland et al. (2014) the women athletes expressed that self-criticism was instrumental in their athletic performance and were hesitant with fully embracing self-compassion, citing concerns that self-compassion may lead to complacency in sport while self-criticism would propel them toward their goals.

Despite previous research that suggests the usefulness of self-compassion for women athletes during challenging sport experiences, as well as emerging findings for the role of self-compassion in women athletes' well-being, there is still much that is unknown about women athletes' self-compassion in sport. It is important to continue this line of inquiry and expand upon recent findings suggesting self-compassion has the potential to foster positive experiences for women in sport while also helping manage the challenges that women athletes often face. As research progresses it will be valuable to implement advanced study designs to deepen our understanding of women athletes' self-compassion in sport. For example, longitudinally tracking self-compassion in sport will provide insight into the stability of self-compassion in sport over time. It is also important to examine long-term relationships between self-compassion and well-being in order to identify if the relationships between self-compassion and well-being change over time. Further, research is needed to begin to explore self-compassion and sport performance for women athletes, as the impact of self-compassion on performance has been expressed as a concern for athletes (Ferguson et al., 2015; Sutherland et al., 2014).

**1.2.2 Sport Performance.** The term 'performance' is often used in sport and can mean a variety of different things. Sport performance may pertain to an athlete placing or "winning" a competition, executed a skill well, applied a strategy, managed pressure during competition, and even biomechanical and physiological observations. For example, in a recent study that focused on a mindfulness intervention to improve athletes' psychological skills with the intention of

7

increasing sport performance, sport performance was described as functional athletic behaviour (Rothlin, Birrer, Horvath, & Holtforth, 2016).  Functional athletic behaviour in competition or games that consisted of focusing on the task and high-quality movement patterns was measured and frequently described globally as performance without further description (Rothlin et al., 2016).  In other research studies and review articles, sport performance has not been explicitly defined or discussed beyond superficial keywords such as: performance, sport performance, and athletic behaviour (e.g., Ghoch, Soave, Calugi, & Dalle Grave, 2013; Woodman & Hardy, 2003).  Further, sport performance language has been used in research to mean a variety of things including: functional movement, sport specific skill execution, performance self-evaluations, and sport skill beliefs (e.g., Ghoch et al., 2013; Rothlin et al., 2016; Woodman & Hardy, 2003).  Given the varying usage, unclear description, and generalized usage of 'sport performance' in research, it is important to have a conceptual definition of relevant terms in the current research.  The overarching aspect of sport performance that I explored and examined was sport *performance perceptions*, which refers to self-relevant thoughts about one's overall ability in their sport (training and competition).  Specifically, sport performance perceptions was defined for my research as *a multidimensional construct that includes objective, subjective, physiological, and psychological elements.  Further, sport performance includes general and specific, as well retrospective and prospective perceptions about an athlete's skill and skill execution (sport-specific and psychological skills) in both training and competition contexts.*

Another challenge with working to understand and explore sport performance, beyond rhetoric, is the lack of consistency when measuring athlete performance.  Just as there are many usages of the word performance in sport there are also a variety of measures that attempt to assess performance.  For example, there are measures that come from physical education settings such as the Game Performance Assessment Inventory, which considers different aspects of game play such as strategy and positioning (Oslin, Mitchell, & Griffin, 1998), or single item measures from a variety of contexts that have not undergone psychometric assessment that simply ask athletes to report win/loss outcomes or to rate their enjoyment or beliefs about their performance (e.g., Robazza, Pellizzari, Bertollo, & Hanin, 2008), or valanced scales that dichotomize performance as good or bad (e.g., Barczak & Eklund, 2018).  Despite glaring inconsistencies, measurement of sport performance is incredibly important as performance is a benchmark of

how athletes, coaches, and many others assess athlete progress and development, as well as if athletes are reaching their potential in sport (Sport for Life Society, 2016).

Women athletes have suggested that self-criticism is a valuable tool for them to develop and reach their potential as athletes (Ferguson et al., 2015).  Specifically, they expressed the view that self-criticism would help to reach their goals and expectations, while preventing them from becoming complacent in their sport (Ferguson et al., 2015; Sutherland et al., 2014).  Yet, self-criticism is associated with a variety of problematic beliefs and behaviours such as body dissatisfaction, compulsive exercise, and eating psychopathologies that have the potential to negatively impact women athletes' experiences and goal achievement (Gordon & LeBoff, 2015). As such, adopting self-criticism in sport may be more detrimental to athletes' performance than they might anticipate.  Leary, Tate, Adams, Allen, and Hancock (2007), found that self-compassion allows individuals to make accurate self-observations of performance, which suggests that self-compassionate athletes could perceive their sport performance more accurately than athletes with lower self-compassion.  This is important because rather than only seeing the flaws (overly self-critical) or only seeing the strengths (inflated self-esteem), self-compassionate athletes who accurately perceive their performances may be able to identify areas of strength and areas of improvement that in turn could influence performance and foster reaching one's athletic potential.

In contrast with previous qualitative findings, a pair of recent studies identified that subjective sport performance was related to self-compassion in a recent study (Barczak & Eklund, 2018) and was described as relevant at times in sport (Wilson et al., 2018).  Specifically, in the article by Barczak and Eklund (2018), swimmers subjective sport performance was measured by rating their performance between good and bad on a 5-point scale "0 very bad; 4 very good" (Barczak & Eklund, 2018, p. 4).  In this study self-compassion, was found to moderate the relationship between subjective performance and motivational and coping outcomes regarding the athletes' subjective performance evaluations (Barczak & Eklund, 2018). Whereas in the study by Wilson and colleagues (2018), athletes' perspectives of the interrelationship between self-compassion and mental toughness was explored.  The researchers in this study interviewed women athletes about their competitive experiences.  Results presented by Wilson et al. (2019) emphasize that both self-compassion and mental toughness play a role in coping with adversity and that it is situationally determined, which is applicable when facing

sport-related adversity and to maintain focus on their sport goals (Wilson et al., 2018). Together the supportive and resistant perspectives and experiences of athletes' self-compassion in sport highlight that the relationship is likely individual and complex.

      **1.2.3 Eudaimonic Well-being.** Individual psychological well-being is related to many positive experiences in a variety of settings, including sport (Crocker, 2016). Generally speaking, athlete happiness and satisfaction is given primary attention in sport literature, which is only part of individual psychological well-being. Constructs such as happiness and satisfaction are considered to be reflective of *hedonic* well-being, which is often referred to as subjective well-being and is comprised of the presence of life satisfaction and high positive affect and low negative affect (Hefferon & Boniwell, 2011). Another type of well-being associated with positive individual functioning (psychological well-being) is *eudaimonic* well-being, which is discussed, among others, in Aristotle's Nicomachian Ethics (Hefferon & Boniwell, 2011). Eudaimonic well-being, also often referred to as flourishing and psychological well-being, focuses on self-actualization, reaching one's potential, and optimal psychological functioning and development (Hefferon & Boniwell, 2011; Ryan & Deci, 2001; Ryff, 1989; 1995).

      Eudaimonic well-being has been conceptualized as consisting of six dimensions: autonomy, environmental mastery, personal growth, positive relationships, life purpose, and self-acceptance (Hefferon & Boniwell, 2011; Ryff, 1989; Ryff, 1995; Ryff & Singer, 2006). Each component is described by Ryff (1995):

- *Autonomy* reflects independence, the ability to set self-relevant expectations, an internal locus of control, and the ability to resist unwanted external pressures or demands.
- *Environmental mastery* is a person's sense of control and competence in managing their environment, with the ability to manage external factors, effectively approach opportunities, and choose or create situations that are personally valuable or satisfy their needs.
- *Personal growth* leads an individual to feel continuous growth and development and improvement in a variety of areas, which is based on openness to new experiences, self-reflections, and application of self-knowledge.
- *Positive relationships* with others is experienced by warm, trusting relationships that are satisfying and promote the welfare of the self and others and the ability to be empathetic, affectionate, and intimate in relationships.

- *Life purpose* suggests that individuals have direction and meaning in their current and past life experiences, individuals will also have beliefs that provide them purpose and objectives to work towards in life.
- *Self-acceptance* includes having positive self-attitudes that acknowledge many different aspects of the self (both good and bad) and is positive when reflecting on past experiences.

Each component of eudaimonic well-being propels an individual toward psychological well-being and flourishing (Hefferon & Boniwell, 2011). From a positive psychological perspective, eudaimonic well-being can foster authentic happiness and personal fulfillment that persists over time (Hefferon & Boniwell, 2011).

Specific to sport contexts, all elements of eudaimonic well-being are likely important for athletes to be successful and reach their potential. To flourish, athletes must be able to: (a) independently motivated to work toward their goals and feel as though they are able to make their own decisions (autonomy); (b) manage a variety of situations in everyday training and competitive contexts (environmental mastery); (c) strive for improvement (personal growth); (d) interact with others effectively and develop meaningful relationships with other athletes and coaches (positive relationships); (e) believe that there is purpose and meaning in their sport participation (purpose in life); and, (f) able to see both the good and the bad in their sport abilities in order to identify areas of strength and areas for development (self-acceptance).

The relevance of eudaimonic well-being in women athletes' sport experiences is gaining attention in sport research (Eke et al., 2019; Ferguson et al., 2014; 2015; Lundqvist & Sandin, 2014; Mack et al., 2011). Two studies in particular explicitly explored the relationship between self-compassion and women athletes' eudaimonic well-being from a variety of perspectives and study designs. In a quantitative study, Ferguson et al. (2015) examined if extending compassion toward the self either helps or hinders women athletes' well-being during difficult hypothetical sport situations. The results of this cross-sectional study highlight that self-compassion is directly related to the components of eudaimonic well-being, as evidenced through positive relationships between self-compassion and indicators of eudaimonic well-being in sport including autonomy, meaning, vitality, and body appreciation. Self-compassion was also indirectly related to eudaimonic well-being through higher positivity and perseverance and lower passivity when reacting to difficult hypothetical sport situations (Ferguson et al., 2015). These

findings suggest that athletes with greater self-compassion may react to difficult sport situations in a constructive manner (i.e., perseverance) that may foster reaching their potential in sport (i.e., eudaimonic well-being).

In another study conducted by Ferguson et al. (2014), a mixed methods approach was taken to explore young women athletes' self-compassion and eudaimonic well-being. The first phase of this study was survey-based and was focused on exploring mechanisms of self-compassion that could promote eudaimonic well-being, finding that self-compassion, passivity, responsibility, initiative, and self-determination accounted for 83% of the variance in eudaimonic well-being. Following the quantitative phase of this mixed methods study a two-part qualitative phase was conducted where athletes participated in a one-on-one interview followed by a focus group to contextualize self-compassion and eudaimonic well-being to the sport domain for women athletes (Ferguson et al., 2014). The qualitative results emphasized that a self-compassionate perspective was advantageous in difficult sport situations through the promotion of positivity, perseverance, and responsibility and through helping to manage rumination (Ferguson et al., 2014). Across the quantitative and qualitative data in both key studies the results highlight that self-compassion is linked with women athletes' eudaimonic well-being and with successfully managing challenges in sport (Ferguson et al., 2014; 2015).

**1.2.4 Body-related Well-being.** The interconnection between the mind and body (embodiment) highlights the importance of exploring not only psychological well-being but also well-being that is directly related to the physical self (Hefferon & Boniwell, 2011). Moreover, the body, specifically body image, for women is intertwined with self-attitudes and assessments of self-worth (Harter, 2015). Therefore, the body and body-related well-being are important to consider especially in sport contexts because women athletes' bodies are often on display, evaluated, and monitored (e.g., Crocker, 2016; Gordon & LeBoff, 2015). Further, in sport there is heightened emphasis on performance evaluation and sport outcomes which can lead women athletes to become dissatisfied with their bodies, potentially leading to problematic beliefs and behaviours such as body dissatisfaction, compulsive exercise, and eating psychopathologies (e.g., Gordon & LeBoff, 2015). Three relevant constructs were considered for body-related well-being including body appreciation, intuitive eating, and compulsive exercise.

Body appreciation is a multidimensional construct of positive body image (Avalos, Tylka, & Wood-Barcalow, 2005). There are four characteristics of body appreciation based on

12

women's ability to "(a) hold favorable opinions of their bodies, (b) accept their bodies in spite of their weight, body shape, and imperfections, (c) respect their bodies by attending to their body's needs and engaging in healthy behaviours, and (d) protect their body image by rejecting unrealistic images of the thin-ideal prototype" (Avalos et al., 2005, p.287). Body appreciation is a robust indicator of body-related well-being because body appreciation approaches body image holistically. Body appreciation incorporates aspects of other positive body image constructs such as: feeling good about the body regardless of shape or size (body pride), protecting one's body image by rejecting "ideals" (body-esteem), and having positive opinions about the body and what it can do (body competence) (Avalos et al., 2005; Krcmar, Giles, & Helme, 2008; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Further, body appreciation has strong applied and theoretical foundations, and measurement of the construct has undergone psychometric analysis and evaluation.

Research in physical activity settings highlights that women exercisers who score high on body appreciation measures typically have higher levels of well-being. For instance, body appreciation is negatively correlated with social physique anxiety (Koyuncu, Tok, Canpolat, & Catikkas, 2010) and eating pathology (Stice & Shaw, 2002). Further, body appreciation is positively correlated with psychological well-being, specifically appearance satisfaction, self-esteem, optimism, proactive coping, and impression management (Avalos et al., 2005). There is also initial support that self-compassion is related to women athletes' body appreciation (Ferguson et al., 2015; Killham, 2014). As discussed in both studies self-compassion might be related to women athletes' body appreciation through the promotion of self-kind self-attitudes that are both accepting and mindfully aware of cultural beauty ideals, and are therefore able to embrace and appreciate their bodies. However, due to the reliance on cross-sectional research designs, our understanding of the relationship between self-compassion and women athletes' positive body image is limited (Ferguson et al., 2015; Killham, 2014).

In addition to considering how athletes relate to their bodies, eating attitudes and exercise behaviours are also important components of body-related well-being. The literature related to eating psychopathology suggests that women are at higher risk for disordered eating when they are exposed to stressful situations, are self-critical, are dissatisfied with their body, and when they strive toward cultural ideals of thinness (e.g., Gordon & LeBoff, 2015; Sassaroli & Ruggiero, 2005; Tietjen-Smith & Mercer, 2008). Eating psychopathology rates are consistently

13

reported as higher for athletes than the general population (Gordon & LeBoff, 2015; Sundgot-Borgen & Torstviet, 2004); specifically, between 6% and 45% of women athletes meet the criteria for a formal diagnosis of an eating disorder, which is notably higher than in the general population (Mountjoy et al., 2014; Plateau et al., 2014; Reardon et al., 2019; Sundgot-Borgen & Torstviet, 2004).  It has been reported that up to 62% of women athletes have engaged in pathological eating behaviours (without diagnosis) at some point (Duckham, Peirce, Meyer, Summers, Cameron, & Brooke-Wavell, 2012; Nattiv et al., 2007; Reardon et al., 2019).  A recent study reported that 61% percent of a sample of women athletes attempted to control their weight (Killham, 2014).  Further, across several studies it was described that between 3.2% and 30.5% of women athletes showed symptomology of exercise addictions (Reardon et al., 2019).

Unlike constructs that focus on eating psychopathology, intuitive eating is an adaptive attitude towards eating that results in healthy intake behaviours (Tylka, 2006; Tylka & Kroon Van Diest, 2013).  Tylka (2006) described intuitive eating as eating attitudes and behaviours that are based on physiological hunger and satiation cues – rather than eating for emotional reasons.  There are four dimensions of intuitive eating: (a) eating for physical reasons rather than emotional reasons, (b) unconditional permission to eat rather than having forbidden foods or extended periods of hunger, (c) reliance of hunger and satiation cues – eating when hungry and stopping when full, and (d) body-food choice congruence – eating what the body needs (Tylka, 2006; Tylka & Kroon Van Diest, 2013).

Research on intuitive eating is limited; across three studies intuitive eating was found to be negatively related with eating disorder symptomology, body dissatisfaction, poor interoceptive awareness (i.e., perception of bodily sensations and signals), pressure for thinness, and internalization of the thin ideal in general undergraduate populations (Avalos & Tylka, 2006; Tylka, 2006; Tylka & Kroon Van Diest, 2013).  Further, positive relations were also found between intuitive eating and several indices of positive psychological well-being, such as self-esteem, life satisfaction, proactive coping, and optimism.  In a general college population, women's intuitive eating was found to be correlated with emotional awareness and negatively correlated with self-silencing and disordered eating (Shouse & Nilsson, 2011).  Finally, initial sport-related research suggests that intuitive eating is related to women athletes' self-compassion and body appreciation, while being negatively related with self-criticism, eating psychopathologies, and compulsive exercise (Killham, 2014).  These findings suggest that self-

compassionate women athletes may be more likely to hold adaptive attitudes toward eating and are more likely to engage in healthy physiologically driven eating.  Continuing to explore adaptive eating attitudes and behaviours such as intuitive eating with women athletes is important because adaptive eating and adequate physical nourishment is associated with reduced risk of eating psychopathologies and injury related to low energy availability, thus contributing to positive sport experiences (e.g., Gordon & LeBoff, 2015).

In addition to body appreciation and intuitive eating, compulsive exercise is important to consider as part of body-related well-being as it might indicate psychopathological motivations toward exercise that may negatively impact sport experiences.  Compulsive exercise is relevant to sport contexts given instances of over training, injury, low energy availability, and reliance on exercise to manage emotional and cognitive states (Gordon & LeBoff, 2015; Plateau et al., 2014).  Specifically, compulsive exercise is described as rigid exercise behaviours that are driven by guilt, anxiety, or the desire to change one's body (Plateau et al., 2014).  There are three components of compulsive exercise: avoidance of negative affect, mood improvement, and weight control exercise (Plateau et al., 2014).  Compulsive exercisers' motivation toward exercise to control or change the physical body is related to an increased risk of challenges associated with the female athlete triad, such as eating psychopathologies, menstrual irregularities, and chronic injuries (Gordon & LeBoff, 2015; Plateau et al., 2014).  Compulsive exercise is an interesting construct to assess within athletic populations as much of athletes' exercise behaviours are required and often are completed in high volume, which can hide athletes' motivation toward exercise and potentially mistake compulsive exercise for following a prescribed training program (Plateau et al., 2014; Thompson & Sherman, 2010).  Compulsive exercise was found to be positively related to eating psychopathologies and self-criticism among a women athlete sample, while being negatively related with self-compassion, self-esteem, body appreciation, and intuitive eating (Killham, 2014).

Together body appreciation, intuitive eating, and compulsive exercise represent a foundation of body-related well-being that is relevant for women athletes.  In combination the three constructs can provide insight about women athletes' perspectives of the body and attitudes toward food and exercise that will help to highlight and describe how athletes are thriving in sport from a positive psychological lens, instead of continuing to focus on body dissatisfaction,

15

eating psychopathologies, and issues related to the female athlete triad that have been explored in great depth (e.g., De Souza et al., 2014; Gordon & LeBoff, 2015; Nattiv et al., 2007).

## 1.3 Statement of the Problem

Despite previous research that supports the usefulness of self-compassion in women athletes' sport experiences, and emerging findings for the role of self-compassion in women athletes' well-being, there is still much that is unknown about women athletes' self-compassion in sport. For example, there is currently no research that has worked to connect self-compassion and sport performance perceptions. Further, to my knowledge no published research has studied women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being over time (i.e., over a competitive sport season or in athlete-identified important competitive events). Reliance on cross-sectional research designs only allows us to understand static relationships between variables, resulting in a limited view of the role of self-compassion in women athletes' sport experiences. Across the three studies conducted and presented below, within my research program I have worked toward gaining a deeper understanding women athletes' self-compassion, sport performance, and eudaimonic well-being, and body-related well-being over a competitive season. These three studies represent novel and significant contributions to the sport, self-compassion, and well-being literature. With this deeper understanding, self-compassion can be further promoted in a variety of sport contexts as an important resource for women athletes because it provides both a protective element during challenges and fosters sport performance perceptions and well-being.

# CHAPTER 2:

Overall Dissertation Program Design and Purpose

**Overall Dissertation Program Design and Purpose**

**2.1 Introduction to Mixed Methods in Sport Research**

It has been suggested that mixed methods study designs are a valuable approach to research because our "... social experience and lived realities are multi-dimensional and our understandings are impoverished and may be inadequate if we view these phenomena only along a single dimension" (Mason, 2006, p.10). Mason (2006) discusses the importance of creativity at all stages of research, suggesting that creativity is essential in applying mixed methods effectively within different research contexts and to answer different research questions. There are many design derivatives within mixed methods research, each with its own strengths. In general, the greatest strengths of mixed methods designs are: (1) the opportunity to approach a research topic or question from varying perspectives, (2) collecting data that adds both breadth and depth of understanding, (3) balance between quantitative generalizability and qualitative voice for participants, and (4) study progression that both builds upon earlier studies in a series and recursively informs and develops the methods and measures for upcoming studies in the series (Creswell, 2014; Creswell & Plano Clark, 2011, 2018). Specific to sport and physical activity research, mixed methods designs have been promoted because "the respective weaknesses of quantitative and qualitative methods can be overcome and neutralized by drawing on the complementary strengths of each other to provide stronger and more accurate inferences" (Sparkes, 2015, p.49). However, mixed methods research continues to be an underrepresented research approach within sport psychology.

**2.2 Overall Dissertation Program Design**

Given the value in conducting mixed methods studies in sport psychology research (Sparkes, 2015), my dissertation research program followed an overarching multiphase explanatory sequential mixed methods design (Creswell & Plano Clark, 2011, 2018). This mixed methods approach allowed the opportunity to gain both breadth of information and depth of understanding regarding women athletes' self-compassion, performance, eudaimonic well-being, and body-related well-being in sport. More specifically, two quantitative studies sequentially built upon each other and were used to inform the third qualitative study (see Figure 2.1. for overview). While the three studies were designed to be congruent and aligned, each study was fully independent, and each was granted ethical approval independently by the University of

Saskatchewan Behavioural Research Ethics Board (see Appendix A for ethics documents for all three studies).

Figure 2.1. *Overview of Multiphase Explanatory Sequential Mixed Methods Dissertation Research Program*

**Overview of Mixed Methods Dissertation Research Program**

| **Study 1:** Quantitative | **Study 2:** QUANTITATIVE | **Study 3:** Qualitative |
|---|---|---|
| **Pre-Post Survey Design** | **Longitudinal Multilevel Design** | **Pre-Post Collective Case Study Design** |
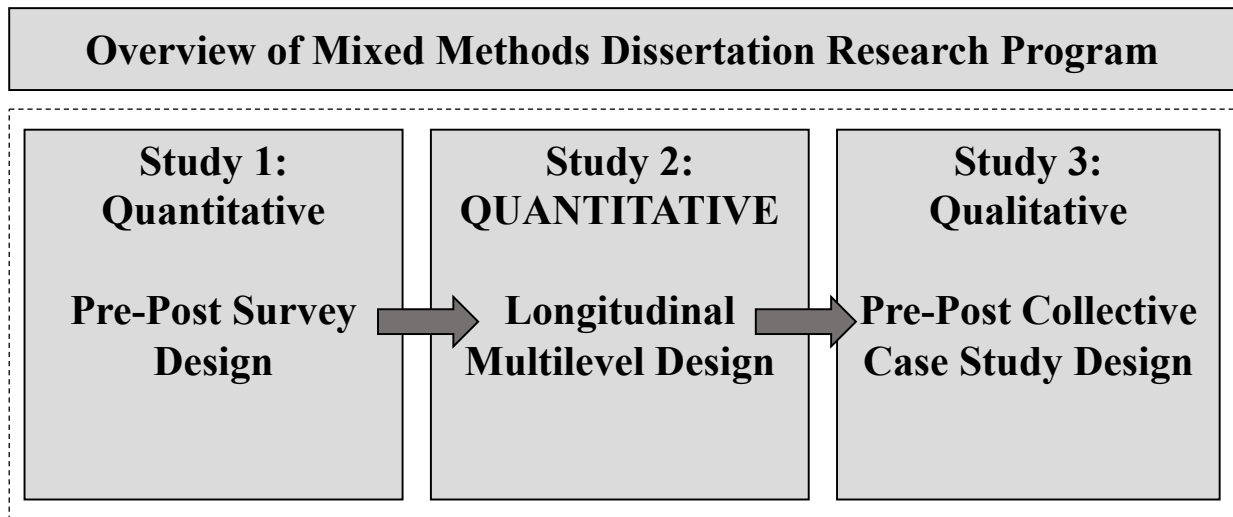
The three studies in this program sequentially built and developed from one another, and each study informed the next study in the series emphasizing iterative processes within my dissertation program. This overall mixed methods research design culminated with multiple perspectives and types of data that individually and collectively helped to inform the overall and study-specific research purposes and questions, which are discussed in detail below.

Study 1 was an initial two time-point prospective study of women athletes' sport performance perceptions around one specific competitive event. This study explored fundamental concepts within the overall research program (i.e., self-compassion, self-criticism, and sport performance perceptions). Study 1 was intended to be a brief and initial, yet necessary, study in my research program, and it has acted as a springboard for the remainder of my program by providing necessary information regarding the interconnection between women athletes' self-compassion and self-criticism and sport performance perceptions. This study was the first to directly examine self-compassion, self-criticism, and sport performance perceptions and therefore was a critical first step in progressing the literature.

Building on Study 1, Study 2 worked to replicate and expand on the findings from Study 1 and included the addition of complimentary measures of self-attitude, refined measures of sport

performance perceptions, and measures relevant to sport contexts for women athletes' eudaimonic well-being and body-related well-being.  Further, Study 2 moved to consider the full regular competitive season (excluding pre- and post-season competitive contexts such as tryouts or playoffs), as opposed to one single competitive event at varying points of the competitive season, as in Study 1.  The majority of research includes athletes at varying timepoints across the off, pre, regular, and post season without accounting for season timing.  This longitudinal design allowed for consideration of variables over time, over different competitive experiences (e.g., win/loss), between and within individuals, and the stability of variables in competitive contexts over time.  Study 2 is the focal study of my research program, highlighting many novel findings that provide a deeper understanding of the relationships between self-compassion, sport performance perceptions, and a variety of eudaimonic well-being and body-related well-being indices for women in sport over time (i.e., the regular competitive season).  Specifically, Study 2 moved beyond cross-sectional data, study designs, and analyses.  Upon publication, the manuscripts that are generated from Study 2 will make strong contributions to the self-compassion literature (e.g., examining self-compassion in sport, over time, and in relation to performance and well-being), sport performance literature (e.g., tracking performance perceptions over a season, examining descriptive sport data such as injury, training volume, and competition outcomes), and well-being literature (e.g., exploring multiple facets of well-being fundamental to sport contexts, sport experiences, and representative of flourishing in sport).

Finally, building on Study 1 and Study 2 – which examined *if* self-compassion was related to sport performance perceptions and well-being in sport, and *how* self-compassion and sport performance perceptions and well-being change over the regular competitive season – Study 3 adopted a qualitative approach to inquiry.  Study 3 has provided an alternative yet complimentary perspective to my research program, which highlights the women athlete's voices through the opportunity to discuss their experiences of self-compassion, sport performance perceptions, and well-being around an athlete-identified important competitive event.  This final study was important to my overall research program because it addressed unique sport experiences – regarding the perceived importance of competition – that had not been captured in Study 1 or Study 2, which added depth to the overall understanding of women athletes' sport experiences and added detail and insight into the overall research questions and purposes.

Together the three studies form a rich and multifaceted image of women athletes' self-compassion, sport performance, and well-being throughout an entire competitive season.

**2.3 Dissertation and Individual Study Purposes and Research Questions**

The overall purpose of my dissertation research program was to *explore and describe the role of self-compassion in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being over a competitive sport season*. The guiding research question that all three studies attempt to answer is: *what is the role of self-compassion in women athletes' sport performance perceptions and well-being throughout a competitive sport season?* This guiding research question will be supplemented through the exploration of several sub-questions within each study.

**2.3.1 Study 1 Design Overview.** The purpose of Study 1 was to *explore if self-compassion was related to, and explained unique variance beyond self-criticism on, young women athletes' sport performance perceptions before and after a regular season competition*. Study 1 helped to formally identify the connection between self-compassion, sport performance perceptions, and self-criticism and developed a foundation for moving forward to further explore connections between self-compassion, sport performance perceptions, and well-being in greater depth. Study 1 began to inform the guiding research question through the examination of three study specific research questions:

1. Is self-compassion related to women athletes' sport performance perceptions?
2. Is self-criticism related to women athletes' sport performance perceptions?
3. Does self-compassion contribute unique variance beyond self-criticism in women athletes' sport performance perceptions?

**2.3.2 Study 2 Design Overview.** In Study 2 the purpose was to *examine women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being at multiple time-points across a regular competitive sport season*. Study 2 worked toward answering the overall guiding research question by re-examining the relationship between Study 1 variables (i.e., self-compassion, self-criticism, and sport performance perceptions), examining the relationships between self-compassion and measures of eudaimonic well-being and body related well-being, assessing the unique contributions of self-compassion beyond self-criticism, and through examining how the study variables change and interact over time. Together the examinations provide a deeper understanding of self-compassion, sport performance perceptions,

eudaimonic well-being, and body-related well-being over a competitive sport season. Study 2 addressed the overall purpose and research question by posing five study specific research questions:

1. Is self-compassion related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints?

2. Is self-criticism related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints?

3. Does self-compassion contribute beyond self-criticism in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints?

4. Are there changes in women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being across timepoints?

5. Are there relationships between women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, body-related well-being across timepoints?

**2.3.3 Study 3 Design Overview.** Finally, in Study 3 a collective case study was conducted, and the purpose was to *explore and describe the role of self-compassion in women athletes' sport performance perceptions and well-being within the context of an athlete-identified important competitive event.* Study 3 added to the overall purpose and research question through the exploration of two study specific research questions from an individual experiential level, focusing on the role of self-compassion from the athletes' perspectives:

1. What are women athletes' recalled lived experiences of self-compassion from an athlete-identified important competitive event?

2. How does self-compassion play a role in women athletes' recalled lived experiences of sport performance perceptions and well-being from an athlete-identified important competitive event?

**2.4 Research Program Design Summary**

In combination, the three studies of my manuscript style dissertation provide breadth and depth of information about the role of self-compassion in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being from multiple perspectives, in

a variety of competitive contexts, and over time. The following chapters contain the three individual research studies representing my research program (note that due to the volume of data collected in Study 2 and Study 3 only select elements of the studies are presented to inform my dissertation purpose and research questions). Chapter 3 consists of Study 1, which in part has already been published in *Sport, Exercise, and Performance Psychology* (APA Division 47). Importantly, Study 1 provided initial connections between self-compassion, self-criticism, and sport performance perceptions that fueled the continuation and expansion of this line of inquiry in Study 2. Chapter 4 is an extended manuscript encompassing Study 2 that examined self-compassion sport performance perceptions and well-being over time. Chapter 5 is a manuscript of Study 3, which was a qualitative project pertaining to self-compassion, sport performance perceptions, and well-being related to an athlete-identified important competitive event. Finally, Chapter 6 and 7 respectively consist of a general discussion that integrates findings from all three studies, quantitative and qualitative, to address the overall research purpose and research question, as well as a general conclusion.

## 2.5 Situating the Researcher

Methodological congruence is often discussed in qualitative research or by qualitative researchers (Creswell & Poth, 2018). Specifically, methodological congruence is described as the interconnectedness and interrelatedness of research purposes, questions, and methods that are cohesive and connecting rather than fragmented parts (Creswell & Poth, 2018; Richards & Morse, 2012), further this alignment is described in great detail as an indication of rigor in qualitative research (Creswell & Poth, 2018). However, rarely is methodological congruence described and discussed in quantitative or mixed methods research approaches. The following section works toward highlighting my philosophical assumptions, primary interpretive frameworks that I applied across my research program, and a detailed description of how methodological congruence was sought and applied to the overall mixed methods research program as well as within each of the three individual studies within the research program.

### 2.5.1 Pragmatism.

This research program was approached from a pragmatic interpretive framework that emphasizes specific philosophical assumptions. Pragmatism is a worldview that is often aligned with mixed methods research as pragmatism focuses on the outcomes of research, the question posed, and the application of multiple methods of data collection (Creswell & Plano Clark,

2018).  This pluralistic worldview is concerned with how to best address research questions and is oriented to real-world applications (Creswell & Plano Clark, 2018).  A pragmatic perspective assumes that reality (ontology) is both singular and plural but that reality is useful; that knowledge (epistemology) is generated through many tools applying both inductive and deductive reasoning and evidence; that values (axiology) play an important role in research processes and should be openly discussed or described as knowledge often reflects the views of participants and researchers; that the research process and methods (methodology) are flexible and often include a range of qualitative and quantitative approaches when appropriate, and that language (rhetoric) can range from formal or informal and often employs specific language and diction from a range of approaches to inquiry that best fit and represent the research questions, areas, and processes (Creswell & Plano Clark, 2018; Creswell & Poth, 2018).  A pragmatic approach has been identified as a valuable method and questions driven interpretive framework within sport and exercise psychology (Moran, Matthews, & Kirby, 2011; Sparkes, 2015).  Therefore, through my pragmatic lens I have approached my research program in a way that highlights the central role of my research questions within each study and highlights the role of the overarching research question and connectedness between my studies through the intentional and direct application of methodological congruence.

### 2.5.2 Applied pragmatism and methodological congruence.

Pragmatic methodological congruence was sought and applied across my entire mixed methods dissertation.  Further, within each of the three individual studies of my program pragmatic methodological congruence was applied to align the constructs of interest (i.e., self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being), measures, data collection and analysis, and interpretation strategies.  Striving for congruence within and across my research program was intended to facilitate comparisons between studies and generalizations to be made across all three studies.  Four primary strategies to promote methodological congruence were implemented across this research program.  First, measures and descriptions of self-compassion that are intended for the general population (Neff, 2003a, 2003b; Raes, Pomier, Neff, & Van Gucht, 2011) were modified to be sport and athlete specific.  This strategy helped to situate Study 1 within the larger body of self-compassion in sport research and to set the foundation for all three dissertation studies to have consistent measurement and description of self-compassion so that comparisons and generalizations could

be made across the three studies.  Further, this strategy helped to focus all research findings on sport/domain specific self-compassion rather than on general or a mixture of domains.  Second, following Study 1 it became apparent that the selected measure of sport performance perceptions was not well aligned with the described construct conceptualization, which prompted the development and application of a new measure of sport performance perceptions that is better aligned with the conceptualization and description of sport performance as described by the Canadian Sport for Life Long Term Athlete Development Model (described in depth in Study 2).  Third, pragmatic methodological congruence was applied in an attempt to explore the role of self-compassion over time.  Specifically, each of the three studies were conducted in a range of ways to capture breadth of competitive experiences and contexts.  This approach facilitated addressing the overall research purpose and question and was an intentional way to compare the role of self-compassion between studies and to highlight differences between competitive contexts.  Fourth, athletes were intentionally recruited to participate based on common inclusion and exclusion criteria across the studies.  While Study 1 had a narrower age range than Study 2 and 3, all three study samples were comprised of women athletes with at least one-year sport specific experience, competing at the local level or higher, and were not currently pregnant or lactating.  In addition to congruence within each study, these four intentional strategies resulted in alignment between the measurements and descriptions, contexts, and participants across the full program of research, which in turn facilitated making comparisons and general conclusions regarding the overall research purpose and question.

# CHAPTER 3:

## Study 1: Women Athletes' Self-compassion, Self-criticism, and Perceived Sport Performance [1]

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# Study 1: Women Athletes' Self-compassion, Self-criticism, and Perceived Sport Performance

## 3.1 Abstract

Many difficult and painful sport experiences for young women athletes are at least partially due to their harsh self-criticism and negative performance evaluations.  One potential resource for young women athletes to manage these experiences is self-compassion, a healthy self-attitude premised on being kind and understanding toward oneself during times of pain and failure.  The purpose of this study was to explore if self-compassion was related to, and explained unique variance beyond self-criticism on, young women athletes' sport performance perceptions before and after a regular season competition.  Women athletes ($N = 82$, $M_{age} = 18.77$ years) from a variety of sports and competition levels completed measures of performance perceptions, self-compassion, and self-criticism in sport around a scheduled competition.  Pre-competition self-compassion was negatively correlated with self-criticism ($r = -.61$, $p < .001$) and positively correlated with performance perceptions measures ($r$s = .21, $p < .05$ [Time 1 Game Performance Assessment Instrument: GPAI] and .29, $p < .01$ [Time 2 GPAI]).  Further, self-criticism was negatively related to one performance measure ($r = -.24$, $p < 0.05$).  Hierarchical regression analysis revealed that self-compassion contributed between 3.4% (Time 1 expected performance rating) and 5.4% (Time 2 GPAI) unique variance beyond self-criticism in women athletes' sport performance.  The results of this research suggest that extending compassion toward the self may be important for women athletes' sport performance perceptions, while self-criticism is at best unrelated to performance.

Keywords: female athletes; sport participation; competition; sport psychology; self-attitudes

## 3.2 Introduction

Sport participation has the potential to promote positive experiences for young women through the satisfaction of psychological needs (e.g., competence and autonomy), promotion of positive physiological adaptations to the cardiovascular system and musculoskeletal health, and development of interpersonal and leadership skills (Crocker, 2016; Forcier et al., 2006; Lox, Martin Ginis, & Petruzzello, 2006; McArdel et al., 2010; Weinberg & Gould, 2011). Although there are many possible advantages related to sport participation, there are also several challenges in sport contexts that could detract from women athletes' experiences. For instance, a common challenge in sport contexts is that athletes and coaches focus on excessive performance expectations and evaluations that can be challenging to manage (Bartholomew et al., 2011; Weinberg & Gould, 2011). Further, difficulties in sport that women athletes might face are often met with constant and sometimes harsh self-scrutiny related to self-criticism (e.g., Kowalski & Duckham, 2014). Women athletes may face further challenges related to self-criticism such as: fear of failure, perfectionism, body-related concerns, compulsive exercise, chronic injury, and anxiety (e.g., Bartholomew et al., 2011; Gordon & Lebouf, 2015; Mosewich et al., 2014).

Self-compassion has been proposed as a tool or resource for women athletes during challenging times in sport (e.g., Mosewich et al., 2011; Reis, Kowalski, Ferguson, Sabiston, Sedgwick, & Crocker, 2015). Informed by positive psychology and Eastern philosophy, self-compassion is a kind, connected, and clear-sighted self-attitude that is based on self-kindness (i.e., being kind and understanding, rather than being overly self-critical or harsh), common humanity (i.e., feeling connected to others based on common or shared experiences, rather than feeling isolated), and mindfulness (i.e., being able to hold experiences in a balanced perspective without becoming overwhelmed or consumed by a specific event or experience; Neff, 2003a, 2003b, 2011). Self-compassion shares similarities with other self-attitudes such as self-esteem aside from one key point: self-compassion does not rely on social comparison to establish feelings of worth (Neff, 2003a, 2009; Neff & Vonk, 2009). This distinction between self-compassion and self-esteem is important because it allows us to understand how self-compassionate individuals can work toward self-actualization and authentic emotional experiences while being less concerned with self-presentation and 'measuring up'. Further, self-compassion does not have the corresponding challenges associated with self-esteem, such as ego inflation, ego defensiveness, aggression, and even narcissism (Neff &Vonk, 2009).

Using cross-sectional research designs, researchers have highlighted that self-compassion can be a valuable tool or resource for women athletes during difficult or challenging sport experiences (Ferguson et al., 2014, 2015; Mosewich et al., 2013; Mosewich et al., 2011; Reis et al., 2015; Sutherland et al., 2014). Specifically, in research with athletes, self-compassion has been negatively associated with feelings of shame, social physique anxiety, objectified body consciousness, fear of failure, fear of negative evaluation, self-criticism, state rumination, and concern over mistakes (Epli Koc & Ermis, 2016; Mosewich et al., 2011; Mosewich et al., 2013). Extending these findings, Mosewich et al. (2013) examined the implications of a brief self-compassion intervention with self-critical women athletes using a randomized controlled design. Athletes in the self-compassion intervention group increased self-compassion scores while also reducing self-criticism, rumination, and concern over mistakes compared to athletes in the attention control group. Therefore, self-compassion shows promise as a tool to help manage self-criticism and negative events in sport for women athletes (Mosewich et al., 2013). Recent researchers have also proposed that self-compassion might promote positive experiences such as eudaimonic well-being, body appreciation, and intuitive eating in sport for women athletes (Ferguson et al., 2014, 2015; Killham, 2014).

Despite the apparent advantages of self-compassion for women athletes, it is important to note that through qualitative methods, researchers have highlighted that some women athletes are hesitant to embrace self-compassion in sport, stating that self-compassion might lead to complacency or settling for mediocrity in sport (Ferguson et al., 2015; Sutherland et al., 2014). Moreover, women athletes in these studies were apprehensive about being self-compassionate in sport because they believe that self-criticism helps them achieve their performance goals and reach their athletic potential (Ferguson et al., 2015; Sutherland et al., 2014). However, to our knowledge, researchers have not yet specifically examined if self-compassion and self-criticism are linked to women athletes' sport performance.

Within sport contexts performance is a key indicator of athlete progress and success and is often a source for evaluation. Outside of sport contexts, researchers have previously found that higher self-compassion is related to more accurate estimations of performance (Leary et al., 2007) and that self-compassion has an indirect effect on performance (Neff, Hsieh, & Dejitterat, 2005). Further, self-compassion has been linked with increased self-improvement motivation, achievement goals, and coping with failure (Breines & Chen, 2012; Neff et al., 2005). As such,

it is possible that self-compassion may be a valuable resource for women athletes to help them recognize growth and improvement opportunities through improved self-awareness and to overcome performance related setbacks in sport. Despite its potential, little is known about *if* self-compassion might play a role in sport performance perceptions, or even if self-compassion is related to sport performance perceptions. Given the link between self-compassion and accuracy in self-estimations (Leary et al., 2007) and potential advantages for women athletes (Ferguson et al., 2014, 2015; Killham, 2014), it is important to contextualize and explore the self-compassion-performance perceptions relationship within sport.

Competition experiences and competitive environments have the potential to illicit self-evaluative and self-critical thoughts for women athletes, which can negatively impact well-being due to social comparison, anxiety, maladaptive coping, performance expectations (i.e., prospective) and evaluations (i.e., retrospective; e.g., Crocker, 2016; Mosewich et al., 2014; Nicholls, Levy, Carson, Thompson, & Perry, 2016; Tarasoff, Ferguson, & Kowalski, 2017; Weinberg & Gould, 2011). Researchers skeptical of self-compassion have suggested that self-compassion may curtail self-criticism and reductions in reparative behaviors following a mistake (Baker & McNulty, 2011; Exline, Root, Yadavalli, Martin & Fisher, 2011). This sentiment has been similarly expressed within the context of sport, as some women athletes believe that self-criticism helps them to achieve their performance goals (Ferguson et al., 2015). The potential impact of self-criticism on athletes' well-being, emphasis placed on self-criticism for sport performance, and potential role of self-compassion in athletes' sport experiences necessitates further examination; especially because it is unknown if self-compassion or self-criticism are related to athletes' performance perceptions.

The purpose of this study was to explore if self-compassion was related to, and explained unique variance beyond self-criticism on, young women athletes' sport performance perceptions. Guided by Leary et al. (2007), who identified that self-compassion was related to more accurate performance evaluations, it was hypothesized that a positive relationship would exist between self-compassion and sport performance. Second, it was hypothesized that self-criticism would be negatively related with both self-compassion and sport performance perceptions (Crocker, 2016; Weinberg & Gould, 2011). Finally, it was hypothesized that self-compassion would predict unique variance beyond self-criticism in women athletes' sport performance perceptions.

Further, the test re-test reliability of self-compassion in sport was explored between measurement timepoints.

<h3 style="text-align: center">3.3 Methods</h3>

### 3.3.1 Design

This study was a self-report survey-based, pre-post competition design (see Figure 3.1.). Following institutional ethical approval (see Appendix A.1.), coaches of women athletes associated with Saskatchewan Sport Inc. were contacted and provided with information about the study. Coaches that expressed interest in inviting their athletes to participate in the study scheduled two data collection timepoints around the timing of an upcoming competition. Participants completed surveys before and after a regular season competition; all data collection timepoints were scheduled within five days of the scheduled competition.

### 3.3.2 Procedure

Data was collected in person at team meetings, practices, or competitions for both timepoints. At Time 1 (i.e., pre-competition), the study was introduced to the athletes and informed consent was obtained. Questionnaire packages were distributed at both timepoints. At Time 1 athletes completed the demographic survey and measures of self-compassion, sport performance perceptions, and self-criticism (see Appendix B.1. for pre-competition survey including informed consent form), whereas at Time 2 (i.e., post-competition) athletes completed measures of self-compassion and sport performance perceptions (see Appendix B.2. for post-competition survey including thank-you letter). To thank athletes for their participation in the study, each athlete selected a local sport and/or women's charity where a $5.00 anonymous donation was made on their behalf. On behalf of the athletes a total of $405 was donated, specifically, $225 was donated to KidSport, $120 was donated to Because I Am A Girl, and $60 was donated to the Canadian Association for the Advancement of Women and Sport and Physical Activity.

Figure 3.1. *Study 1: Design and Data Collection Timing*
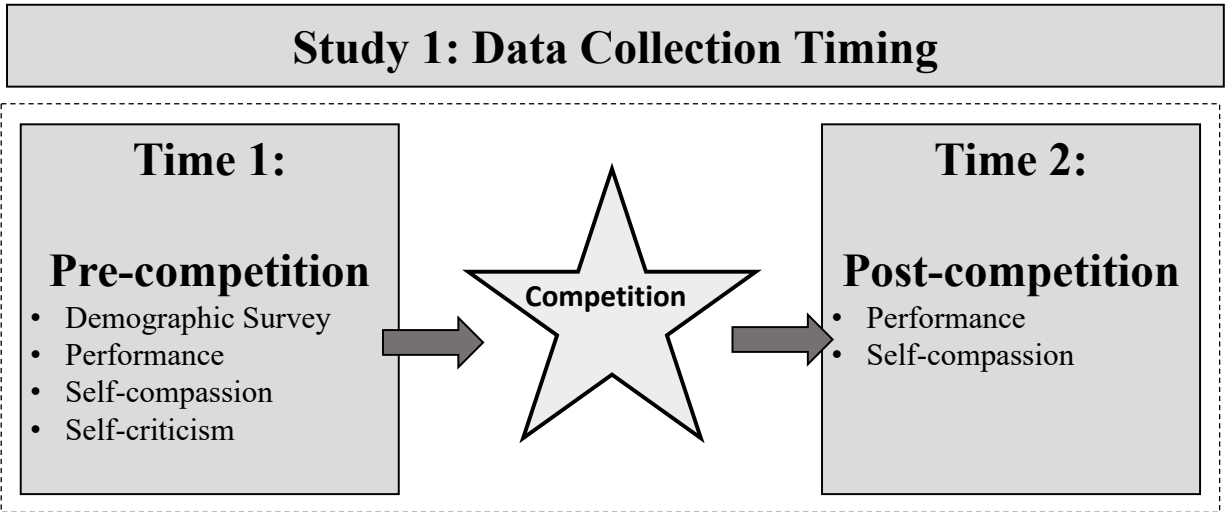


### 3.3.3 Measures

**3.3.3.1 Demographics.** Information regarding participants' age, height, weight, ethnicity, and sport participation was collected.

**3.3.3.2 Self-compassion.** An athlete version of the Self-Compassion Scale (SCS-AV) was created and used to measure participants' self-compassion in sport. The original 26-item Self-Compassion Scale (SCS) was developed by Neff (2003b) and consists of six subscales, which together represent the components of self-compassion: self-kindness (5 items), self-judgment (5 items), mindfulness (4 items), over-identification (4 items), common humanity (4 items), and isolation (4 items). Response options to each item range from 1 (*almost never*) to 5 (*almost always*). A mean score is calculated by first reverse coding negative items, with higher scores indicative of greater self-compassion (Neff, 2003b). Internal consistency values for the composite score range from α = .73 to α = .94 in university undergraduate samples (Leary et al., 2007; Neff, 2003b; Neff et al., 2005), and from α = .82 to α = .93 in samples of women athletes (Ferguson et al., 2014, 2015; Killham, 2014; Mosewich et al., 2011; Reis et al., 2015).

The SCS-AV is a slightly modified version of the Self-Compassion Scale to include language that is specific to the sport context. Modifications included specifying *athletes* instead of *people,* and *sport* instead of *in general.* The modification process was iterative and included feedback from other researchers and members of the Sport Health and Exercise Psychology Lab. The number of items per subscale, number of total scale items, general content of each item, and scoring procedure remained unchanged between the original SCS and the SCS-AV. The intent

of these minor changes was to orient athletes to think about and respond to each item based on how they treat themselves specifically in sport rather than in general. Like the original measure, the SCS-AV has six subscales: self-kindness (e.g., "I'm tolerant of my own athletic flaws and inadequacies"), self-judgment (e.g., "when times are really difficult in my sport, I tend to be tough on myself"), mindfulness (e.g., "when something upsets me in my sport I try to keep my emotions in balance"), over-identification (e.g., "when something upsets me in my sport I get carried away with my feelings"), common humanity (e.g., "I try to see my failings as part of the sport experience"), and isolation (e.g., "when I fail in my sport, I tend to feel alone in my failure"; all SCS-AV items available upon request).

        **3.3.3.3 Sport Performance.** Sport performance perceptions were evaluated with a variety of measures. The 7-item Game Performance Assessment Instrument (GPAI) measures game performance behaviors, tactical understanding, and the athlete's ability to apply tactical skills (Oslin et al., 1998). Responses to each item range from 1 (*very weak performance*) to 5 (*very effective performance*). The GPAI has been used to measure physical activity performance in a variety of contexts including physical education (Memmert & Harvey, 2008) and rugby (Pope & Wilson, 2015). Evidence for the validity (Oslin et al., 1998: Pope & Wilson, 2015) and test-re-test reliability (Oslin et al., 1998) of GPAI scores has been reported. The GPAI was used in the current study to assess athletes' sport performance perceptions before competition (Time 1 GPAI) and after competition (Time 2 GPAI). At Time 1, athletes were instructed to respond to the GPAI items based on their anticipated performance (e.g., "I will make appropriate choices about what to do during competition"); at Time 2, athletes were instructed to evaluate their performance in their most recent competition (e.g., "I made appropriate choices about what to do during competition"). Mean GPAI scores were calculated for each timepoint.

        In addition to the GPAI, single-item measures were used to evaluate expected performance ratings at pre-competition and recalled performance ratings at post-competition. The performance rating items were developed based on similar single items used by Robazza et al. (2008). Specifically, athletes were asked to evaluate their expected performance rating (Time 1; "overall, how do you anticipate your performance will be in your upcoming competition?") and recalled performance rating (Time 2; "overall, how did you perform in your most recent competition?"). Response options ranged from 1 (*less than my normal performance*) to 7 (*better than my normal performance*).

For the final performance perception measure, athletes were asked to report the outcome of their competition at Time 2.  Specifically, athletes responded to the following question: "how did you/your team do in your most recent competition? For example, I won, we finished in third place, I made the team, etc." and then were provided open space to respond in their own words. The athletes were categorized into two groups based on their competition outcome responses: positive outcomes (e.g., when athletes reported a win, or personal best) and negative outcomes (e.g., when athletes reported a loss, or reported disappointment or frustration).

**3.3.3.4 Self-criticism.**  Athletes' self-criticism was assessed by an athlete-version of a state self-criticism measure (SC-AV; Mosewich et al., 2013).  The SC-AV is a 7-item measure adapted from the self-monitoring log developed by Gilbert and Procter (2006), which was originally designed to record individuals' self-critical thoughts and emotions.  In the SC-AV, participants were asked to reflect on a salient negative event from the past week in their sport and then respond to each item (e.g., "How intrusive were your self-critical thoughts about a recent negative sport event?") on a scale from 1 (e.g., *not at all*) to 10 (e.g., *very intrusive*). After reverse coding the negatively phrased items, a mean SC-AV value for the seven items was calculated with higher mean scores representing higher levels of self-criticism (Mosewich et al., 2013).  Scores from the SC-AV demonstrate internal consistency reliability with values reported between $\alpha = .86$ and $\alpha = .90$ for women athletes (Killham, 2014; Mosewich et al., 2013).

**3.3.4 Data Analysis**

**3.3.4.1 Missing Data and Assumption Testing.**

The *a priori* cutoff for missing data was either two missing points within a subscale or missing 20% of total items on a measure (Tabachnick & Fidell, 2013).  No athletes exceeded the missing data cutoffs (for subscale or total scale items) and therefore no participants were removed before analysis.  Missing data points (7 points across 6 participants) were managed through within-person mean replacement by scale or subscale (Tabachnick & Fidell, 2013).  No outliers were identified on study variables (i.e., +/- 3 or more standard deviations from the mean; Field, 2009; Tabachnick & Fidell, 2013).  Further, the assumptions for linearity, homoscedasticity of residuals, and multicollinearity were assessed and no violations were observed on variable scatterplots and variance inflation factors (Field, 2009; Tabachnick & Fidell, 2013).  Additionally, normality of the data was assessed through the evaluation of skewness, kurtosis, and measures of central tendency for all measures (see Table 3.1.).  There

were violations for skewness (ranging from -2.30 to -5.61) and kurtosis (ranging from 5.46 to 8.43) on the GPAI and single-item performance rating measures (expected and recalled performance ratings); however, there were no normality violations for the SCS-AV or SC-AV (Vincent & Weir, 2012). Negative skewness values for the GPAI and expected and recalled performance ratings are not surprising, as the athletes' reported levels of competition would suggest that they would score well on the GPAI, which is an assessment of game performance behaviors, tactical understanding, ability to apply tactical skills, and to be continually improving sport specific skills. Transformations (logarithmic; Field, 2009) were made for the GPAI and expected and recalled performance measures, and the analysis conclusions remained consistent with the original data. Therefore, for practical and theoretical reasons the original data was interpreted and is presented here. The significance level for analyses was set at $p < .05$. However, because this research was exploratory, $p < .10$ was considered as marginally significant, and marginally significant results are reported to manage potential Type 2 error.

**3.3.4.2 Hypothesis Testing.** Pearson bivariate correlations were calculated to examine patterns of association to test Hypothesis 1 and 2. Additionally, four separate hierarchical regression analyses were conducted with performance as the criterion variable (i.e., one analysis for each measure of performance), self-criticism entered into the model at Step 1, and self-compassion entered at Step 2 to test Hypothesis 3. Exploratory analyses were also conducted regarding perceived competition outcomes and self-compassion stability. Specifically, self-compassion, performance perception ratings, and self-criticism means were compared between the positive outcome and negative outcome groups through independent *t*-tests. Further, a test-retest correlation of the SCS-AV was conducted between Time 1 and Time 2, to evaluate the stability of the modified measure.

<div align="center">

**3.4 Results**

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**3.4.1 Participants**

The participants in this study were 82 young women athletes between 16 and 24 years (*M* = 18.77 years, *SD* = 2.02 years). The women primarily self-identified as white (98%). Athletes' self-reported height (*M* = 170.15 cm, *SD* = 8.16 cm) and weight (*M* = 63.66 kg, *SD* = 8.99 kg) was used to calculate body mass index (BMI) and ranged from 14.29 to 25.07 kg/m$^2$ (*M* = 18.66 kg/m$^2$, *SD* = 2.05 kg/m$^2$). The women athletes were currently competing in a variety of sports (i.e., basketball [12], cross-country [3], fencing [4], figure skating [1], hockey [35], ringette [5],

volleyball [16], and wrestling [6]) and were currently competing at a variety of competition levels (i.e., local [3], provincial [18], regional [14], national [45], and international [2]).

**3.4.2 Descriptive Statistics.**

Descriptive statistics and internal consistency scale reliabilities are reported in Table 3.1. Of note, the SCS-AV had an internal consistency of $\alpha = .85$ at Time 1 (pre-competition) and $\alpha = .88$ at Time 2 (post-competition).  Further, test re-test correlation for the SCS-AV scores between Time 1 and Time 2 was $r = .81, p < .001$.

Table 3.1. *Study 1: Descriptive Statistics and Scale Reliabilities*

| Measure | Number of Items | Observed Range | Mean (*SD*) | α |
|---|---|---|---|---|
| Time 1 SCS-AV | 26 | 1.96-4.12 | 3.11 (0.44) | .85 |
| Time 2 SCS-AV | 26 | 1.62-4.00 | 3.01 (0.46) | .88 |
| Time 1 GPAI | 7 | 1.00-5.00 | 4.07 (0.77) | .94 |
| Time 2 GPAI | 7 | 1.00-5.00 | 3.63 (0.69) | .90 |
| Time 1 expected performance rating [a] | 1 | 1.00-7.00 | 4.96 (1.28) | |
| Time 2 recalled performance rating [a] | 1 | 1.00-7.00 | 4.26 (1.20) | |
| SC-AV | 7 | 1.00-8.29 | 4.96 (1.69) | .86 |

*Note*. SCS-AV = Self-Compassion Scale-Athlete Version.  GPAI = Game Performance Assessment Instrument.  SC-AV = Self-Criticism Athlete Version.  [a] = single item measure; *SD* = standard deviation; α = Cronbach's alpha.

**3.4.3 Main Analyses.**

There was partial support for Hypothesis 1 as self-compassion was positively related to three of the four sport performance perception measures (see Table 3.2.).  Time 1 self-compassion (SCS-AV) was positively correlated with Time 1 expected performance rating ($r = .26, p = .008$), Time 1 GPAI ($r = .21, p = .028$), and Time 2 GPAI ($r = .29, p = .005$).  However, Time 1 self-compassion was not significantly correlated with recalled performance ratings ($r = .006, p = .955$).

There was full support for the first part of Hypothesis 2 as self-criticism (SC-AV) was negatively correlated with both Time 1 SCS-AV and Time 2 SCS-AV ($r = -.61, p < .001$, and $r = -.52, p < .001$, respectively).  There was partial support for the second part of Hypothesis 2 as self-criticism was negatively correlated with Time 1 GPAI ($r = -.24, p = .032$) and Time 1

expected performance rating ($r = -.19$, $p = .040$), while not being significantly related with the other two sport performance perception measures (see Table 3.2.).

Table 3.2. *Study 1: Self-compassion, Performance Perceptions, and Self-criticism Correlations*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Time 1 SCS-AV | - | | | | | |
| 2. Time 2 SCS-AV | .81** | - | | | | |
| 3. Time 1 GPAI | .21* | .12 | - | | | |
| 4. Time 2 GPAI | .29** | .33** | .53** | - | | |
| 5. Time 1 expected performance rating | .26** | .17 | .66** | .37** | - | |
| 6. Time 2 recalled performance rating | .01 | .17 | -.05 | .35** | .13 | - |
| 7. SC-AV | -.61** | -.52** | -.24* | -.17 | -.19* | .08 |

*Note.* Degrees of freedom = 80. ^ $p < 0.1$, * $p < 0.05$, ** $p < 0.001$ (all one-tailed). GPAI = Game Performance Assessment Instrument. SCS-AV = Self-Compassion Scale – Athlete Version. SC-AV = Self-Criticism Athlete – Version.

There was partial support for Hypothesis 3 as self-compassion contributed unique variance beyond self-criticism in two of the possible four sport performance perception measures for the women athletes (see Table 3.3.). Time 1 self-compassion contributed unique variance beyond self-criticism in the women athletes' Time 2 GPAI (5.4%, $p < .05$), and also contributed marginally significant unique variance in the athletes' Time 1 expected performance ratings (3.4%, $p < .10$). All effect sizes are classified as small (Cohen's $R^2$ effect size conventions: small effect = 1% - 5.9% variance) for the unique variance accounted for by self-compassion in the regression analyses (Tabachnick & Fidell, 2013). The total variance accounted for ranged from 7.1% (Time 1 expected performance rating, $p < .10$) to 8.2% (Time 2 GPAI, $p < .05$) in the significant models.

Table 3.3. *Study 1: Hierarchical Regression Analyses*

| Criterion | Predictor | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Time 1 GPAI | Step 1: | | | | .056* | .056* |
| | SC-AV | -.11 | .05 | -.24* | | |
| | Step 2: | | | | .063^ | .007 |
| | SC-AV | -.08 | .06 | -.17 | | |
| | Time 1 SCS-AV | .18 | .24 | .11 | | |
| Time 2 GPAI | Step 1: | | | | .028 | .028 |
| | SC-AV | -.07 | .05 | -.17 | | |
| | Step 2: | | | | .082* | .054* |
| | SC-AV | .00 | .06 | .01 | | |
| | Time 1 SCS-AV | .45 | .21 | .29* | | |
| Time 1 expected performance rating | Step 1: | | | | .038^ | .038^ |
| | SC-AV | -.15 | .08 | -.19^ | | |
| | Step 2: | | | | .071^ | .034^ |
| | SC-AV | -.04 | .10 | -.05 | | |
| | Time 1 SCS-AV | .67 | .39 | .23^ | | |
| Time 2 recalled performance rating | Step 1: | | | | .006 | .006 |
| | SC-AV | .06 | .08 | .08 | | |
| | Step 2: | | | | .010 | .004 |
| | SC-AV | .09 | .10 | .13 | | |
| | Time 1 SCS-AV | .22 | .38 | .08 | | |

*Note.* ^ $p < 0.1$.  *$p < 0.05$.  **$p < 0.01$.
GPAI = Game Performance Assessment Instrument.  SCS-AV = Self-Compassion Scale – Athlete Version.  SC-AV = Self-Criticism Athlete – Version.

### 3.4.4 Exploratory Results.

Beyond the study hypotheses, exploratory analyses were conducted to assess if self-compassion (SCS-AV) and self-criticism (SC-AV) scores were different for athletes when grouped by perceived competition outcome (i.e., positive or negative competition outcomes). These exploratory analyses revealed that self-compassion (Time 1 and Time 2) and self-criticism scores were not statistically different between athletes who reported positive or negative performance outcomes at Time 2, however yielded small effects based on Cohen's *d* for Time 1 SCS-AV and Time 2 SCS-AV (see Table 3.4.).

Table 3.4. *Study 1: Group Comparisons*

| Variable | Mean (*SD*) Positive Outcome | Mean (*SD*) Negative Outcome | Mean Difference | *t* (sig) | Cohen's *d* |
|---|---|---|---|---|---|
| Time 1 SCS-AV | 3.18 (0.41) | 3.08 (0.46) | 0.10 | -.90 (.37) | .23* |
| Time 2 SCS-AV | 3.16 (0.38) | 2.95 (0.52) | 0.21 | -1.85 (.07) | .46* |
| SC-AV | 4.89 (1.85) | 5.03 (1.69) | 0.14 | .327 (.75) | .08 |

*Note.* * = small effect size, *SD* = standard deviation.  SCS-AV = Self-Compassion Scale – Athlete Version.  SC-AV = Self-Criticism Athlete – Version.

### 3.5 Discussion

The intent of this study was to explore women athletes' self-compassion, self-criticism, and sport performance perceptions.  The original SCS (Neff, 2003a) was modified for a sport context and the intent of measuring self-compassion at both timepoints was to evaluate initial psychometric properties of the SCS-AV.  The test re-test correlation was strong ($r = .81$, $p <$ .001) and internal consistency values of the SCS-AV were Time 1 $\alpha = .85$ and Time 2 $\alpha = .88$, which are similar to internal consistencies of the original SCS that have been reported between $\alpha$ = .82 to $\alpha$ = .93 with women athletes (Ferguson et al., 2014, 2015; Killham, 2014; Mosewich et al., 2011; Reis et al., 2015).  Therefore, there is initial evidence that the SCS-AV may be an appropriate tool when conducting self-compassion research with women athletes.  Utilizing a sport-specific measure will help lead to a more accurate understanding of women athletes' self-compassion in sport and help to build a foundation for understanding and applying self-compassion in sport contexts.

Researchers using qualitative designs have found that young women athletes competing in a variety of sports expressed reliance on self-criticism in sport contexts (Ferguson et al., 2014; Sutherland et al., 2014).  More specifically, women athletes have expressed concerns that being self-compassionate may take away from their performance, and that adopting a kind and caring self-attitude would be letting themselves off the hook in sport (Ferguson et al., 2014).  Further, women athletes have indicated that self-criticism is not only helpful but is necessary for athletic success (Ferguson et al., 2014; Sutherland et al., 2014).  Contrary to these beliefs, self-criticism was negatively related to pre-competition measures of sport performance perceptions and was not significantly related to the other two measures of performance perceptions in the current

study.  These findings suggest self-criticism is, at best, unrelated to perceived performance ratings, and depending on the indicator of sport performance, associated with lower performance ratings.  In other words, being critical towards oneself in sport was linked with negative performance evaluations, or not related to performance perceptions at all.

Self-compassion is theorized to encourage individuals to continually strive toward personal improvement and therefore should not create issues with stagnation or complacency (Neff, 2003b).  Specifically, individuals with high self-compassion tend to take more responsibility for mistakes (Ferguson et al., 2014; Leary et al., 2007) and show personal initiative (Ferguson et al., 2014).  Findings from the current study support this contention and suggest that women athletes can have higher performance perceptions and self-ratings while also being self-compassionate, as evidenced by positive relationships between levels of self-compassion in sport and measures of performance perceptions.  Further, recognizing that self-criticism can be a destructive way of relating to the self and that self-compassion should not lead to complacency bolsters the value of applying self-compassion in sport contexts to help manage the challenges that women face in sport related to self-criticism and performance evaluation.  Although many athletes perceive self-criticism as a positive force in reaching their goals in sport (Ferguson et al., 2014; Sutherland et al., 2014), findings from the current study show that at best self-criticism is neutral and possibly a hindrance when considering women athletes' performance evaluations.

Self-compassion was related to higher sport performance perceptions for the women athletes in this study, with higher levels of self-compassion being related to more favorable or positive perceptions of performance.  Specifically, athletes with higher self-compassion reported higher pre-competition performance perceptions (Time 1 GPAI and Time 1 expected performance rating), while also reporting higher performance perceptions post competition (Time 2 GPAI).  Leary et al. (2007) proposed that self-compassion might help individuals perceive themselves more clearly and accurately, which suggests that self-compassion might assist athletes to hold more balanced and realistic perspectives of their performance when setting performance expectations before competition and evaluating their performance after a competition.  Moreover, it is also possible that the balanced perspective associated with self-compassion could help athletes to persevere during challenging experiences related to sport performance, in turn providing them the opportunity to learn from their mistakes and hurdles as they work toward achieving their goals in sport.  Self-compassion appears to be a viable

psychological construct to predict sport performance perceptions and contributes to existing sport performance literature that focuses on self-concept (Marsh & Perry, 2005), adaptive coping (Hoar, Kowalski, Gaureau, & Crocker, 2006), and emotion regulation (Wagstaff, 2014).

Overall, the three study hypotheses were at least partially supported. The results of this study suggest that self-compassion is related to higher sport performance ratings (Hypothesis 1: three of the four performance perceptions measures in this study); whereas self-criticism was unrelated or negatively related to sport performance perceptions measures (Hypothesis 2: two of four performance perceptions measures in this study). Further, there is partial support that self-compassion plays a role in women athletes' performance ratings beyond self-criticism, highlighting that self-compassion is a valuable resource for women athletes when evaluating their performance that can also buffer against self-criticism in sport (Hypothesis 3: unique contribution of self-compassion in two of four performance perceptions measures in this study).

### 3.5.1 Limitations

Although this study contributes novel information to the understanding of how self-compassion is related to and plays a role in women athletes' performance perceptions, limitations in this study are worthy of attention and suggest a need for further examination of women athletes' self-compassion, sport performance perceptions, and self-criticism. One study limitation was the challenge related to measuring performance perceptions in sport. Performance is a complex multidimensional construct that is operationalized in a variety of ways in the sport psychology literature and is typically assessed through single item measures that have been developed for specific studies but have yet to go through a validation process (e.g., Robazza et al., 2008). Recognizing the challenges with performance measures, sport performance perceptions were purposefully assessed using multiple indicators in an attempt to enhance construct representation. Nevertheless, caution is warranted when interpreting the results, as it is possible that the indicators used herein did not capture the full conceptual spectrum of sport performance perceptions held within the regular competitive season.

Additional limitations pertain to variation among athletes' competitions and timing of data collection. For instance, depending on the meaning of the specific competition that data was collected around (e.g., a qualifying match vs. a round robin competition), the athlete's perception of the competition may have influenced their responses to questionnaire items. Further, the specific competitions that data were collected around occurred at varied points of the

competitive season, which is important to acknowledge as not all competitions within the regular season are equally meaningful to athletes. The variability in both perceived importance of competition (and subsequent performance in that competition) and timing of competition has the potential to introduce possible confounding variables. Finally, due to self-report measures of performance ratings this study was unable to determine if self-compassion is related to more objective measures of sport performance (e.g., time or distance).

**3.5.2 Future Directions**

Critical next steps in this line of research include: implementing a study design beyond a pre-post design, determining effective ways to measure sport performance perceptions, continued examination of measuring self-compassion in the sport context, and beginning to assess if self-compassion is related to performance perceptions or increased objective performance markers such as time and distance. Moving beyond cross-sectional study designs in sport contexts is advantageous due to the dynamic nature of sport and the potential for this context to continuously change over time. Longitudinal study designs will therefore help to identify the trajectories of and relationships between self-compassion, sport performance perceptions, and self-criticism for women athletes over time. As discussed above, because the measurement of performance is so diverse, identifying additional or alternative measures of performance that best capture this construct is an important area for future research. Moving forward it will be important to assess performance from a multidimensional approach to work toward understanding as much about sport performance as possible and how it is related to women athletes' sport experiences, such as their well-being and self-compassion in sport. Although initial reliability values for the modified self-compassion measure are similar to internal consistency values for the original measure in research with women athletes, scores from the SCS-AV measure have not been examined for structural validity or invariance. Psychometric assessment of construct and content validity for the SCS-AV, as well as further examination of the score reliability, should be conducted with athlete populations in order to make accurate inferences about a sample based on data collected with the SCS-AV (Furr & Bacharach, 2014). Further, providing validity and reliability evidence for the SCS-AV may encourage researchers in the area to confidently consider its inclusion in sport-related research through ease of access and domain specificity.

### 3.5.3 Conclusions

Given emerging findings from this study that women athletes' self-compassion is related to their sport performance perceptions and that self-criticism is unrelated to or negatively associated with sport performance perceptions, it is important to continue this line of inquiry to better understand self-compassion and women athletes' sport performance perceptions. The present study contributes to the existing sport and performance psychology and self-compassion literature through the application of multiple measures of performance perceptions and a pre-post competition design. However, the continued exploration of self-compassion and athletes' sport experiences, through a variety of quantitative and qualitative approaches, will be beneficial to determine if self-compassion can be applied in sport to promote athletes' sport performance and sport experiences in a constructive and healthy manner.

## 3.6 Bridging Summary

Given findings from Study 1, primarily that self-compassion is related to women athletes' sport performance perceptions and that self-criticism is negatively related to or unrelated to their sport performance perceptions, there was considerable need to continue to explore the role of self-compassion and self-criticism in sport performance perceptions. The critical next steps were to replicate and expand on Study 1, as sport contexts are dynamic due to influences such as skill development, facing success and failure, managing pressure, and interpersonal support and stressors, which could potentially influence relevant study variables over time. Further, refinement of the conceptualization of sport performance perceptions and measurement should be explored. Therefore, Study 2 applied a longitudinal study design to directly expand on Study 1 to help identify and describe the trajectories of and relationships between variables of interest such as self-compassion, self-criticism, and sport performance perceptions for women athletes over time. Additionally, Study 2 expanded on Study 1 through (a) the additional focus on the role of self-compassion in women athletes' eudaimonic and body-related well-being and (b) the design and implementation of new measures of sport performance perceptions that represent a multidimensional performance construct. These additions assist in examining women athletes' self-compassion, sport performance perceptions and well-being.

**CHAPTER 4:**

**Study 2: A Longitudinal Examination of Women Athletes' Self-compassion, Sport Performance Perceptions, Eudaimonic Well-being, and Body-related Well-being Over a Regular Competitive Sport Season**

# Study 2: A Longitudinal Examination of Women Athletes' Self-compassion, Sport Performance Perceptions, Eudaimonic Well-being, and Body-related Well-being Over a Regular Competitive Sport Season

## 4.1 Abstract

Self-compassion has been identified as a valuable resource for women athletes to buffer against emotional challenges and promote well-being.  Further, self-compassion has also been related to sport performance perceptions.  However, self-compassion, sport performance perceptions, and well-being have not previously been considered while accounting for the duration of the regular competitive season.  The purpose of this prospective longitudinal study was to examine women athletes' self-compassion, performance perceptions, and well-being at multiple timepoints across a regular competitive sport season.  Women athletes ($N = 120$) between 16 and 35 years ($M = 22.47$, $SD = 5.14$), were recruited to complete a series of online surveys over the course of their regular competitive season.  The women were participating in a range of team and individual sports, currently competing between the local and international levels, and had between 1 and 28 years of sport specific experience ($M = 10.17$, $SD = 6.65$).  The data was analyzed through correlation, hierarchical regressions, and latent growth modelling.  Self-compassion was positively correlated sport performance perceptions (26 of 44; $r$s = .17 [Time 2 preparedness] to .87 [Time 7 competition], $p$s = .07 to < .001) and well-being (42 of 44; $r$s = .16 [Time 2 mastery] to .82 [Time 9 body-related well-being single item], $p$s = .05 to < .001).  Self-compassion also contributed unique variance beyond self-criticism in sport performance perceptions (16 of 44; $\Delta R^2$s = .04 [Time 1 expectation] to .68 [Time 9 competition], $p$s = .09 to < .001) and well-being (35 of 44; $\Delta R^2$s = .03 [Time 1 vitality] to .67 [Time 9 body-related well-being single item], $p$s = .09 to < .001).  Further, self-compassion and some well-being measures were stable over time (not significant slope), while global sport performance perceptions, and some measures of well-being, including autonomy and relatedness, mastery, intuitive eating, and self-criticism varied over time (significant slope; slopes ranged from -.19 [mastery] to .04 [intuitive eating], $p$s = .07 to < .001).  Highlight that self-compassion plays a facilitating and protective role in women athletes sport performance perceptions, well-being across the regular competitive season.

Keywords: self-attitudes; self-criticism; sport performance; women in sport; latent growth modelling; longitudinal multilevel modelling

## 4.2 Introduction

Some women athletes have expressed concern that their sport performance could be hindered by self-compassion, while their performance could benefit from self-criticism (Ferguson et al., 2014; Sutherland et al., 2014). An initial examination of the relationships between sport performance, self-compassion, and self-criticism found that self-compassion was positively related to women athletes' sport performance perceptions while self-criticism was unrelated or negatively related to their performance perceptions (Killham, Mosewich, Mack, Gunnell, & Ferguson, 2018; Study 1). Women athletes in two recent qualitative studies have also specified that self-compassionate perspectives are at times helpful to reach their potential as athletes (Eke, et al., 2019; Wilson et al., 2019). However, Wilson and colleagues (2019) described that elite women athletes see *both* self-criticism and self-compassion as relevant in managing challenging competitive situations. Further a recent study also identified self-compassion as a moderator between subjective performance appraisals and motivation and coping (Barczak & Eklund, 2018). The role of self-compassion and self-criticism in sport performance perceptions is therefore likely multifaceted (Barczak & Eklund, 2018; Eke et al., 2019; Ferguson et al., 2014; Killham et al., 2018; Sutherland et al., 2014; Wilson et al., 2019) and requires further investigation. Further, self-compassion has been negatively related to a variety of psychopathological constructs (e.g., social physique anxiety, self-criticism) in past cross-sectional research and in qualitative studies with women athletes (Berry et al., 2010; Epli Koc & Ermis, 2016; Ferguson et al., 2015; Killham, 2014; Killham et al., 2018; Mosewich et al., 2013). Self-compassion has also been related to positive aspects of women athletes' sport experiences such as eudaimonic well-being, body appreciation, and intuitive eating (Ferguson et al., 2014; Ferguson et al., 2015; Killham, 2014). These findings highlight that self-compassion has the potential to help women athletes manage challenging sport experiences, that self-compassion might promote positive sport experiences, and that self-compassion is related to sport performance perceptions at a cross-sectional level. However, self-compassion has not yet been longitudinally examined in a sport context. Tracking self-compassion over a competitive season will add to our understanding of self-compassion in sport and how it naturally fluctuates or remains stable over time. Tracking athletes' self-compassion, sport performance perceptions, and well-being over time is an important addition to the literature as season timing factors such

as increased pressure have the potential to negatively impact athletes' well-being and sport performance perceptions.

Assessing sport performance is highly important to athletes, coaches, and sport associations and enhancing performance is noted as a primary area in sport research (e.g., Crocker, 2016; Weinberg & Gould, 2011). In Study 1 sport performance perceptions were measured based on athletes' performance perceptions (expected and recalled performance ratings), the Game Performance Assessment Instrument (GPAI), and reporting the outcome of their competitive events (Killham et al., 2018; Study 1). Although the number and types of performance perception measures included were intended to measure sport performance perceptions from a variety of pre-existing measures, the measurement of sport performance perceptions was an identified limiting factor of the study because the measures might not have fully represented the multidimensional conceptualization of sport performance perceptions.

Stemming from the results of Study 1, specifically, the experiences and knowledge gained from conducting the study, the conceptualization of sport performance perceptions in the current study was further developed and is better represented by the following guiding definition of sport performance as *a multidimensional construct that includes objective, subjective, physiological, and psychological elements. Further, sport performance includes general and specific, as well retrospective and prospective perceptions about an athlete's skill and skill execution (sport-specific and psychological skills) in both training and competition contexts*. The current study attempted to better articulate this conceptualization of sport performance by also including differentiations between the following terms to facilitate clear and precise conceptualizations of sport performance and its corresponding measurement: performance perceptions, performance ratings, performance expectations, and performance evaluations.[2]

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[2] The overarching aspect of sport performance that was explored and examined in the current study was *sport performance perceptions*, which refers to self-relevant thoughts about one's overall ability in their sport (training and competition). An athlete can also have performance ratings, performance expectations, and performance evaluations. *Performance ratings* refer to athletes' rating of specific aspects of their sport performance and may be assessed through a variety of measures such as the results of a sporting event and impressions of their strategic ability and preparedness. *Performance expectations* are prospective self-relevant thoughts about an athlete's upcoming competition or training. Finally, *performance evaluations* are retrospective self-relevant thoughts about an athlete's past competition or training (recent to distant past competition or training). These additional detailed definitions were applied in the current study and are critical moving forward investigating sport performance perceptions, as sport performance perceptions are a foundational way that athletes, coaches, and support staff evaluate an athlete's contributions, ability, potential, and sometimes their worth in sport.

Common challenges that women face in sport are related to self-criticism, self-judgement, and harsh evaluation (Cash & Smolak, 2011; Crocker, 2016; Fitsimmons-Craft, Harney, Brownstone, Higgins, & Bardone-Cone, 2012; Kowalski & Duckham, 2014; Mosewich et al., 2013; Mosewich et al., 2011).  It is possible that self-compassion can help manage negative sport experiences related to self-criticism while promoting positive sport experiences because self-compassion should protect against harsh self-evaluation (Neff, 2003a, 2003b). However, protecting against challenges or managing negative aspects of the sport experience cannot be equated to positive or meaningful sport experiences for women athletes.  Therefore, it is also important to consider how self-compassion is related to women athletes' well-being in sport.

As discussed in chapter one, well-being has been conceptualized in a variety of ways (subjective, hedonic, emotional, physical, etc.; e.g., Hefferon & Boniwell, 2011), and for the purpose of this study, well-being has been separated into two categories.  First, eudaimonic well-being is a construct informed by positive psychology that represents authentic progress toward self-actualization and reaching one's potential (Hefferon & Boniwell, 2011).  Eudaimonic well-being consists of: autonomy, mastery, personal growth, relatedness, life purpose, and self-acceptance (Ryff, 1989; Ryff, 1995).  Within sport contexts eudaimonic well-being is relevant to consider athletes reaching their potential through: personal autonomy and decision making (autonomy), managing different sport situations and contexts (mastery), striving for improvement (personal growth), effective and meaningful interpersonal relationships (relatedness), experiencing feelings of purpose from sport (life purpose), and being able to identify areas of strength and areas for development to assist athletic development (self-acceptance).  Further, cross-sectional research highlights that eudaimonic well-being is related to self-compassion for young women athletes (Ferguson et al., 2014, 2015).

Body-related well-being (e.g., body image, eating, and exercise attitudes and behaviours) is another aspect of well-being that is relevant within sport contexts, as women athletes are at risk for challenges directly related to their physical selves in sport.  For instance, women athletes are exposed to a heightened focus on the body in sport and experience psychological tension as a result of the dualism between striving toward performance goals that facilitate sport demands (e.g., strength and muscularity) and cultural aesthetic ideals such as thinness (e.g., Cash & Smolak, 2011; Fitsimmons-Craft et al., 2012).  Body dissatisfaction is a common occurrence

among women athletes, which can lead to eating psychopathologies and/or compulsive exercise as women athletes attempt to change or manage their body dissatisfaction or to work toward achieving athletic goals and performance standards (Cash & Smolak, 2011; Deimel, & Dunlap, 2012; DeSouza et al., 2014; Gordon & LeBouff, 2015; Plateau et al., 2014; Sundgot-Borgen & Torstveit, 2010). There is a large body of research focused on body dissatisfaction and eating psychopathologies for women athletes (e.g., Gordon & LeBoff, 2015). Due to the imbalance in the literature, where an emphasis has been placed on pathology-based research, and subsequently an underrepresentation of well-being knowledge, it is essential to explore positive body and eating attitudes and behaviours to improve our understanding of positive sport experiences related to body-related well-being. Because the absence of dissatisfaction or pathology is not the same as the presence of appreciation and adaptive body, eating, and exercise attitudes and behaviours, positive psychological well-being research is underrepresented in the sport literature, warranting focus and further examination.

Building on initial findings that suggest that self-compassion plays a role in women athletes' well-being (e.g., eudaimonic and body-related) and sport performance beyond self-criticism (Killham, 2014; Killham et al., 2018; Mosewich et al., 2013; Reis et al., 2015), this study considered the role of self-compassion in women athletes' sport performance and well-being over time (i.e., a regular competitive sport season). The current research sought to fill gaps in the literature by addressing three key areas: (a) the relationships among self-compassion, self-criticism, sport performance perceptions, eudaimonic well-being, and body-related well-being for women athletes, (b) the longitudinal trajectory of self-compassion, self-criticism, sport performance perceptions, eudaimonic well-being, and body-related well-being for women athletes over a competitive season, and (c) the role of self-compassion, beyond self-esteem and self-criticism, in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being over a competitive season.

### 4.2.1 Purpose and Research Questions

The purpose of this prospective longitudinal study was to *examine women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being at multiple timepoints across a regular competitive sport season*, addressed through five sub-questions and hypotheses.

Research Questions:

1. Is self-compassion related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints during a regular competitive season?

2. Is self-criticism related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints?

3. Does self-compassion contribute beyond self-criticism in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints?

4. Are there changes in women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being across timepoints?

5. Are there relationships between women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being across timepoints?

Research Hypotheses:

1. Self-compassion would be positively correlated with women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints.

2. Self-criticism would be negatively correlated with women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints.

3. Self-compassion would contribute unique variance beyond self-criticism in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints.

4. There would be changes in women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being over time.

5. There would be positive relationships between women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, body-related well-being over time.

**4.2.2 Design**

      Study 2 was a quantitative prospective multilevel longitudinal design, with an embedded measurement burst[3]. This design focuses on within-person and between-person processes over time (Sliwinski, 2008). Specifically, in this study there were two measurement levels and one measurement burst at mid-season, with a total of 17 data collection timepoints distributed across each athlete's regular competitive season (see Figure 4.1.). The two measurement levels were: (1) the primary level (a longer in-depth questionnaire package completed four times across the competitive season, including the demographic survey at the first primary measurement point), and (2) the secondary level (a shorter questionnaire package completed six times across the competitive season). The measurement burst consisted of a mid-season daily burst of measures (a brief questionnaire package completed on seven consecutive days at mid-season).

Figure 4.1. *Study 2: Design and Data Collection Timing*
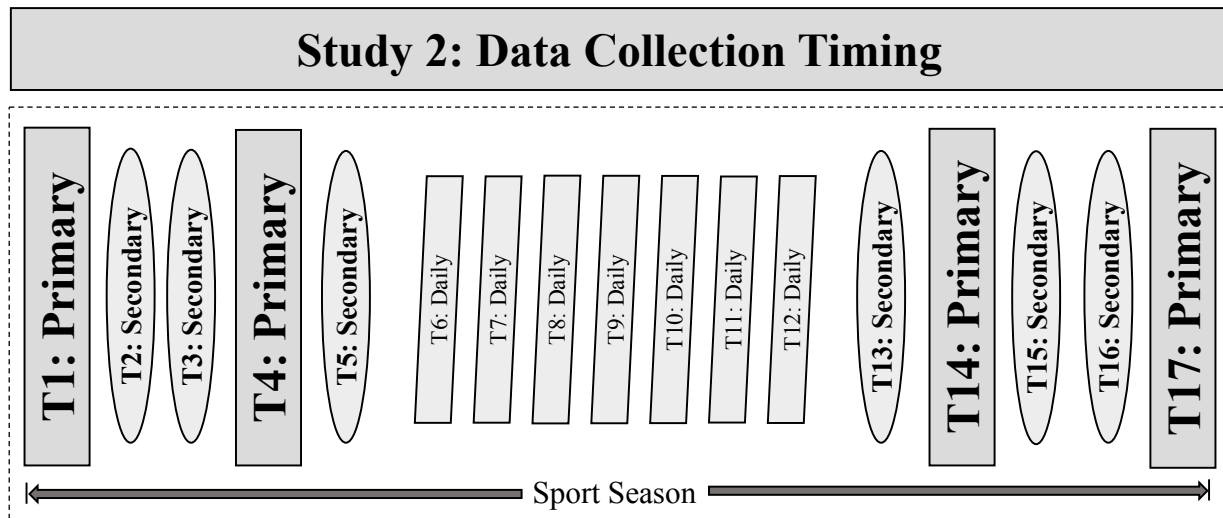


*Note*. The questionnaire packages were distributed over each athlete's competitive season. The length of the athletes' competitive seasons ranged from 7 weeks to 33 weeks and all athletes had a minimum of 2 regular season competitions.

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[3] Measurement burst designs are intended to be brief measures that capture individual fluctuations in study variables, which is achieved through close measurement points of the same variables (Sliwinski, 2008). Typically, the burst would be repeated over a long period of time as well. However, within this study the daily burst assessed daily variation of study variables at the mid-season. Further, in a multi-season study the same burst could be implemented again at the mid-season to reinforce the measurement burst design (Sliwinski, 2008).

## 4.3 Methods

### 4.3.1 Participant Recruitment and Data Collection

Following ethical approval from the University of Saskatchewan Behavioural Research Ethics Board (see Appendix A.2.), women athletes were recruited through Saskatchewan Sport Inc., Huskie Athletics, and PAWS announcements. The inclusion criteria for the current study were that the women athletes needed to be between 16 and 35 years of age, have a minimum of twelve months sport-specific experience, be competing between the local and international level, have a minimum of two competitions in their regular season, and not be currently pregnant or lactating. Athletes were excluded if they were pregnant or lactating because either or both could be a potential confounder through impacting athletes' self-perceptions related to sport, their bodies, exercise, and eating (Downs, DiNallo, & Kirner, 2008). Recruitment and data collection commenced in May 2016 and continued through the end of October 2017 (18 months or 72 weeks total). All participants were recruited prior to the start of their regular competitive season. Athletes interested in participating provided the dates of their first and last regular season competitions, which were cross-referenced with online schedules whenever possible. Athletes consented to participate in the study before gaining access to the first online questionnaire (see Appendix C.1. for informed consent form and thank-you letter). In collaboration with the University of Saskatchewan Social Science Research Lab, the athletes received the 17 study surveys through the online survey platform Qualtrics.[4] The athletes received personalized links for each survey via e-mail that expired after 5 days. The surveys were linked by e-mail addresses to ensure that all data between timepoints were linked appropriately (see Table C.5-1. in Appendix C.5. for detailed distribution). To protect athlete identities all identifying information such as initials and e-mail addresses were removed from the dataset prior to data analysis. Athletes were compensated for their participation in two ways. First, each time they completed a survey they were entered into a draw for 1 of 17 $25 Amazon gift cards (1 entry per timepoint, totaling $425.00 in gift cards was awarded to participants). Second, a donation was made on behalf of each athlete to a sport or women's foundation. Within the first survey the athletes selected which foundation they wanted to donate to, for the athletes who did not select a

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[4] The surveys and all collected data were password protected so that only the student researcher had access to the identified data once data collection began. Prior to data collection the surveys were accessible to one member of the SSRL who assisted with formatting and troubleshooting the surveys before going live.

foundation 1/3 of their portion was donated to each foundation. On behalf of the athletes a total of $2385.00 was donated, specifically, $1078.33 was donated to KidSport, $738.33 was donated to Because I Am A Girl, and $568.33 was donated to the Canadian Association for the Advancement of Women and Sport and Physical Activity.

**4.3.2 Measures**

Below is an outline of the two measurement levels and the measurement burst that were implemented in this study (see Table 4.1.), followed by a detailed description of all measures organized by measurement level/burst. Randomization of measures is often adopted as a way to manage potential carry over effects (Field, 2009; Furr & Bacharach, 2014; Tabachnick & Fidell, 2013); however, due to financial and administrative constraints of the current study, randomizing measures within and across timepoints was not feasible. Recognizing the challenges of carry over effects, measures were strategically ordered within each questionnaire package, attempting to manage potential carry over effects. Specifically, the descriptive measures (i.e., demographic survey) was presented first as they included critical descriptive details that are most informative when unbiased by positive or negative carry over effects. The most important measures to protect from carry over effects in this study were the sport performance measures. Therefore, the sport performance measures preceded all well-being measures and all other measures that could potentially influence how athletes perceive their sport performance in a positive or negative direction. The well-being measures followed the sport performance perception measures and were before all self-attitude (e.g., self-compassion) and pathology-based measures (e.g., compulsive exercise). The self-attitude and pathology-based measures were presented last as they had the most potential to contribute or lead to carryover effects.

**4.3.2.1 Primary Measurement Level.** The *primary level* of measures (see Figure 4.2. for primary distribution timing), in the order administered, included: descriptive measures (the demographic survey at Time 1 only), sport performance perception measures (performance expectations and evaluations and performance perceptions), measures of eudaimonic well-being (autonomy and relatedness, mastery, meaning, vitality, body appreciation), a body-related well-being measure (intuitive eating), and self-attitude measures (self-compassion, self-esteem, and self-criticism; see Appendix C.5. for primary level questionnaires including the demographic survey).

Figure 4.2. *Study 2: Primary Level Data Collection Timing*
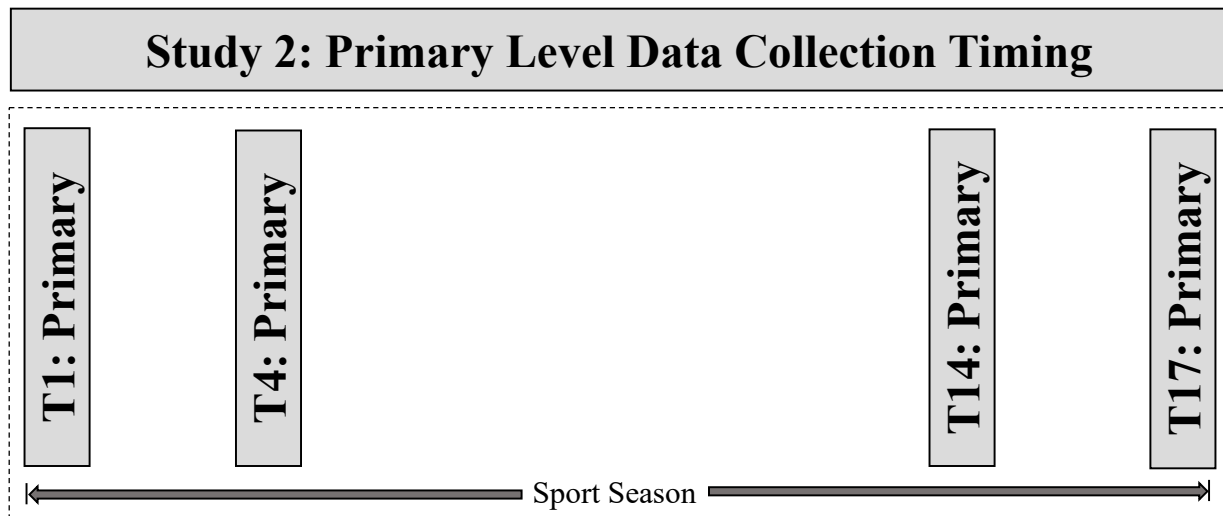


*Note*. The questionnaire packages were distributed over each athlete's competitive season. The length of the athletes' competitive seasons ranged from 7 weeks to 33 weeks and all athletes had a minimum of 2 regular season competitions.

Table 4.1. *Study 2: Overview of Measurement Levels/Bursts and Study Constructs and Measures*

| Primary Measurement Level | Secondary Measurement Level | Daily Measurement Burst |
|---|---|---|
| Descriptive:<br>• Demographic survey (Time 1 only) | Descriptive: | Descriptive: |
| Sport Performance:<br>• Prospective performance expectations (Expectation) and preparedness perceptions (Preparedness)<br>• Retrospective performance evaluations (Evaluation) and outcome perceptions (Outcome)<br>• Sport Performance Perceptions (SPPS) | Sport Performance:<br>• Prospective performance expectations (Expectation) and preparedness perceptions (Preparedness)<br>• Retrospective performance evaluations (Evaluation) and outcome perceptions (Outcome) | Sport Performance:<br>• Performance evaluations for rest and recovery (Rest & Recovery), training (Training), and competition (Competition) |
| Eudaimonic Well-being:<br>• Autonomy and relatedness (A&R subscale of BNSSS)<br>• Mastery (three subscales of PSPP-R)<br>• Meaning (personal growth subscale of SoMS)<br>• Vitality (SVS)<br>• Body appreciation (BAS) | Eudaimonic Well-being: | Eudaimonic Well-being:<br>• Eudaimonic well-being single item (EWB [SI]) |
| Body-related Well-being:<br>• Intuitive eating (IES-2) | Body-related Well-being:<br>• Compulsive exercise (CET-AV) | Body-related Well-being:<br>• Body-related well-being single item (BRWB [SI]) |
| Self-attitude:<br>• Self-compassion (SCS-AV)<br>• Self-esteem (RSES)<br>• Self-criticism (SC-AV) | Self-attitude:<br>• Self-compassion (SCS-AV[SF])<br>• Self-criticism (SC-AV) | Self-attitude:<br>• Self-compassion single item (SCS-AV [SI])<br>• Self-criticism single item (SC-AV) |

*Note.* SPPS = Sport Performance Perceptions Scale; BNSSS = Basic Needs Satisfaction in Sport Scale; PSPP-R = Physical Self-Perception Profile - Revised; SoMS = Sense of Meaning Scale; SVS = Subjective Vitality Scale; BAS = Body Appreciation Scale; IES-2 = Intuitive Eating Scale -2; CET-AV = Compulsive Exercise Test – Athlete Version; SCS-AV = Self-Compassion Scale – Athlete Version; RSES = Rosenberg Self-Esteem Scale; SC-AV = Self-Criticism – Athlete Version; SCS-AV (SF) = Self-Compassion Scale – Athlete Version (Short Form); SCS-AV (SI) = Self-Compassion Scale – Athlete Version (Single Item).

56

#### 4.3.2.1.1 Descriptive Measures.

***Demographic Survey.*** Demographic information was collected from participants at the first primary measurement timepoint only (Time 1). Information collected included: age, height, weight, sport, position or role in sport, length of involvement, level of competition (highest and current), and components related to the female athlete triad (i.e., self-reported current and past menstrual history, deficient or low energy intake, and low bone density). A similar demographic survey has been used in previous graduate research at the University of Saskatchewan (i.e., Killham, 2014) with the addition of items regarding injury. Published research has also used a similar survey to collect demographic information from women athletes (e.g., Killham et al., 2018; Ferguson et al., 2015). This information was used to account for potential factors that may impact the outcome variables of the research, such as sport type and competition level.

#### 4.3.2.1.2 Sport Performance Measures.

***Performance Evaluations and Expectations.*** At all primary and secondary level timepoints (i.e., 10 of the 17 timepoints), athletes responded to a set of questions in reference to their upcoming (within the next 7 days) and recent competitions (within the past 7 days). Athletes were asked "have you competed in the past 7 days?" and "do you have a scheduled competition in the next 7 days?". If the athlete responded "yes" to either or both of these questions, follow-up questions appeared in the survey for athletes to evaluate their past performance (e.g., "overall, how was your performance in your most recent competition?"), and to provide details about their expectations for their upcoming performance (e.g., "overall, how do you expect to perform in your upcoming competition?"). Possible responses ranged from 1 (*less than*) to 7 (*better than*) compared to their normal performance over the past 12 months.

***Performance Perceptions.*** To measure sport performance perceptions a multidimensional model was developed in an attempt to represent the Long-term Athlete Development model, specifically the train to compete and train to win stages (Sport for Life Society, 2016), while also representing content from the Game Performance Assessment Inventory (Oslin, et al., 1998), a variety of single item measures of sport performance (e.g., Robazza et al., 2008), and athlete monitoring questions used by elite athlete trainers at Craven Sport (with permission). Further, the process of development was iterative and included ongoing consultation with faculty in sport and performance research areas (i.e., Dr. Ferguson, University of Saskatchewan; Dr. Kowalski, University of Saskatchewan; Dr. Mosewich, University of

Alberta; and Dr. Duckham, Deakin University).  The newly developed measure, the Sport

Performance Perceptions Scale (SPPS) is a 32 item measure (see Figure 4.3.) including general,

training-specific, and competition-specific situations, and is premised on five dimensions of

sport performance perceptions: athlete development (6 items, e.g., "I complete training that is

event or position specific"), mastery and improvement (7 items, e.g., "when I am training I am

focused on improving my sport specific skills"), preparedness and strategy (7 items, e.g., "I am

confident making strategic decisions during competition"), recovery and injury prevention (8

items, e.g., "I take rest after a big competition to improve my recovery"), and psychological

skills (4 items, e.g., "I feel like I can manage my emotions in my training").  Responses range

from 1 (*almost never*) to 7 (*almost always*), with higher mean scores for each subscale and

overall global scores representing higher sport performance perceptions.

Figure 4.3. *Conceptual model for the Sport Performance Perception Scale (SPPS)*
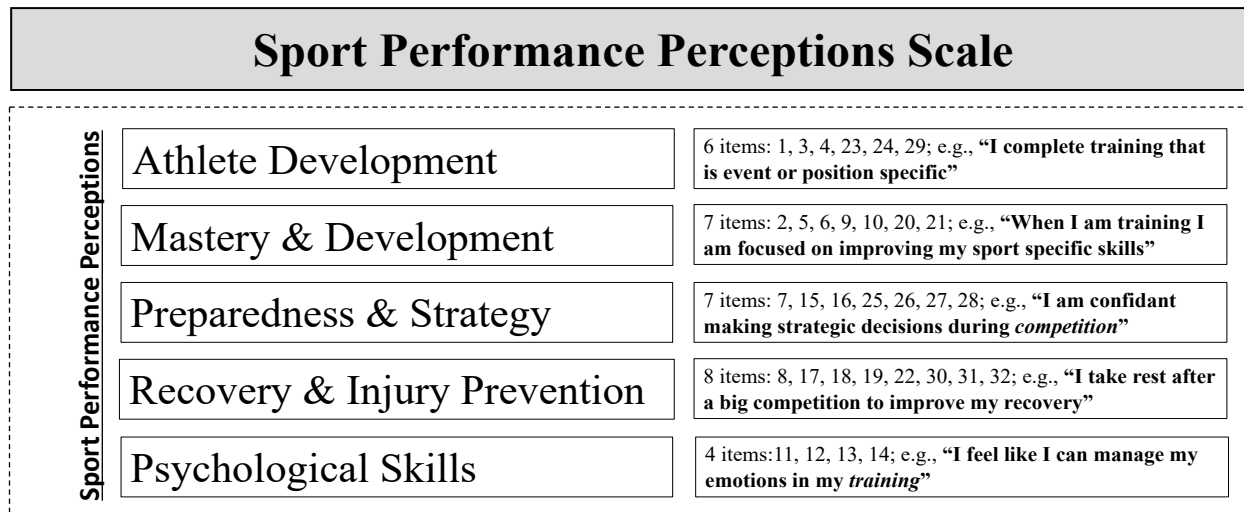


*Note.*  Measure includes items that are general (overall), training specific, and competition specific.
The measure is based on the GPAI, the train to compete and train to win stages of development in the Canadian
Sport for Life model, and athlete monitoring checklists used by Craven Sports with competitive athletes.

### 4.3.2.1.3 Eudaimonic Well-being Measures.

***Autonomy and Relatedness.***  To assess the autonomy and relatedness components of

eudaimonic well-being, the respective subscales of the Basic Needs Satisfaction in Sports Scale

(BNSSS; Ng, Lonsdale, & Hodge, 2011) were used, as done in previous research with women

athletes (Ferguson et al., 2015).  There are 15 items across the two subscales (e.g., autonomy [10

items]: "I feel I participate in my sport willingly", and relatedness [5 items]: "in my sport, I feel

close to other people"). Responses range from 1 (*not at all true*) to 7 (*very true*). The two subscales have demonstrated internal consistency and construct validity (Ng et al., 2011). Further, in a recent study with women athletes, autonomy scores were reported with internal consistency values of α = .86 and relatedness was reported as α = .83 (Ferguson et al., 2015).

*Mastery.* Three subscales of the Revised Physical Self-Perception Profile (PSPP-R) were administered to assess mastery: sport competence (6 items, e.g., "I do very well at all kinds of sports"), physical conditioning (6 items, e.g., "I am very confident about my level of physical conditioning and fitness compared to other people"), and physical strength (6 items, "I am physically stronger than most other people of my sex"; Lindwall, Asci, & Hagger, 2011). These subscales were used as a proxy measure of the environmental mastery component of eudaimonic well-being in previous research with women athletes (Ferguson et al., 2015). Response options range from: 1 (*not true at all for me*) to 4 (*really true for me*). The revised version of this scale applies a likert scale instead of an individualized response, improving the psychometric qualities (Lindwall et al., 2011). As done in previous research with women athletes, a mean score is calculated across the three subscales to represent mastery in sport settings. Internal consistency of scores have been reported for women athletes as α = .83 (Ferguson et al., 2015).

*Meaning.* The personal growth dimension of eudaimonic well-being was assessed with the Sense of Meaning Scale (SoMS; Huta & Ryan, 2010), which has been used in previous research with women athletes (Ferguson et al., 2015). The SoMS is a 12-item questionnaire that was modified to sport contexts to examine the extent that athletes find purpose or meaning in their sport activities and involvement. The athletes in the current study responded to a series of questions following the stem "to what degree do you typically feel that your sport activities and experiences…". An example item is "are meaningful". Responses range from 1 (*not at all*) to 7 (*very much*), and a mean score is calculated from all scale items. Internal consistency for the SoMS has been reported as α = .94 for women athletes (Ferguson et al., 2015).

*Vitality.* Vitality was used as a proxy measure for the purpose component of eudaimonic well-being, which has been done in past research with women athletes (Ferguson et al., 2015). The modified version of the Subjective Vitality Scale (SVS; Bostic, McGarland Rubio, & Hood, 2000) was used to assess vitality. The SVS is a 6-item measure of vitality that begins with the question stem "overall, during my sport experiences…". An example item following this stem is "I feel energized". Responses to the SVS items range from 1 (not at all) to 7 (very much). Mean

scores are calculated, and higher scores represent higher individual vitality. In the general population this measure holds strong psychometric properties (Bostic et al., 2000), and a study with women athletes reported an internal consistency of α = .88 (Ferguson et al., 2015).

***Body Appreciation.*** The self-acceptance component of eudaimonic well-being was assessed through the use of the Body Appreciation Scale (BAS; Avalos et al., 2005), which has been done in past research with women athletes (Ferguson et al., 2015). The BAS is a 13-item scale that addresses the four components of body appreciation: (a) that women hold favorable opinions of their bodies (e.g., "on the whole, I am satisfied with my body"), (b) that women accept their bodies despite their weight/shape/imperfections (e.g., "despite its imperfections, I still like my body"), (c) that women respect their bodies (e.g., "I am attentive to my body's needs"), and (d) that women protect their body image against unrealistic expectations or ideals (e.g., "I do not allow unrealistically thin images of women presented in the media to affect my attitudes towards my body"). Responses range from 1 (*never*) to 5 (*always*). Negatively worded items are reverse coded and then a mean score is calculated (Avalos et al., 2005). Psychometric assessment was conducted with women from the general population and there is evidence of strong internal consistency, reliability (i.e., test-retest assessment), and validity (Avalos et al., 2005). Further, studies with women athletes have reported internal consistency between α = .91 and α = .92 (Ferguson et al., 2015; Killham 2014).

#### 4.3.2.1.4 Body-related Well-being Measures.

***Intuitive Eating.*** The Intuitive Eating Scale-2 (IES-2) was used to measure an aspect of athletes' body-related well-being (Tylka & Kroon Van Diest, 2013). The IES-2 is a 23-item scale that addresses the four components of intuitive eating: (a) unconditional permission to eat (6 items; e.g., "if I'm craving a certain food, I allow myself to have it"), (b) eating for physical reasons (8 items; e.g., "I mostly eat foods that make my body perform efficiently [well]"), (c) reliance on hunger and satiety cues (6 items; e.g., "I rely on my hunger signals to tell me when to eat"), and (d) body-food choice congruence (3 items; e.g., "I mostly eat foods that give my body energy and stamina"; Tylka & Kroon Van Diest, 2013). Responses range from 1 (*strongly disagree*) to 5 (*strongly agree*) and subscale and overall mean scores are calculated with higher scores representing higher levels of intuitive eating. The IES-2 demonstrates reliability and construct validity in the general population (Tylka & Kroon Van Diest, 2013). Internal consistency for the IES-2 with women athletes has been reported as α = .88 (Killham, 2014).

### 4.3.2.1.5 Self-attitude Measures.

*Self-compassion.* At the primary level, self-compassion was measured with the athlete version of the Self-Compassion Scale (SCS-AV; Killham et al., 2018), which is a 26-item measure modified from the original 26-item Self-Compassion Scale (Neff, 2003a). The SCS-AV includes specific language for athletes and is comprised of six subscales, which together represent the components of self-compassion: self-kindness (5 items; e.g., "I'm tolerant of my own flaws and inadequacies in sport"), self-judgment (5 items; e.g., "when times are really difficult in sport, I tend to be tough on myself"), mindfulness (4 items; e.g., "when something upsets me in sport I try to keep my emotions in balance"), over-identification (4 items; e.g., "when something upsets me in sport I get carried away with my feelings"), common humanity (4 items; e.g., "I try to see my failings in sport as part of the athlete condition"), and isolation (4 items; e.g., "when I fail at something that's important to me in sport I tend to feel alone in my failure"; Neff, 2003a). Responses to each item range from 1 (*almost never*) to 5 (*almost always*). Mean scores are calculated after negatively worded subscales are reverse coded, where higher scores are representative of higher self-compassion (Neff, 2003a). The original SCS demonstrates content and discriminant validity, and reliability in the general population (Neff, 2003a). In a sample of women athletes, the internal consistency of the SCS-AV has been reported between $\alpha = .85$ and $\alpha = .88$ (Study 1), and the SCS-AV held a strong test re-test correlation of $r = .81$, $p < .001$ over 5 to 10 days (Killham et al., 2018; Study 1).

*Self-esteem.* Self-esteem was measured with the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), which is a 10-item measure (e.g., "I feel that I'm a person of worth, at least on an equal plane with others") with responses ranging from 3 (*strongly agree*) to 0 (*strongly disagree*). There are five positively worded items and five negatively worded items in the RSES. The scoring procedure for the RSES are to first reverse code the five negatively worded items and then add the scores together, which provides a RSES composite score for each participant. The RSES demonstrates strong psychometric properties including but not limited to test re-test reliability in university samples (Choi, Meininger, & Roberts, 2006). The RSES has been used in research with women athletes and has reported similar internal consistency values to those found in general populations (e.g., Killham, 2014; Mosewich et al., 2011; Reis et al., 2015).

*Self-criticism.* At the primary level an athlete version of state self-criticism (SC-AV) assessed athletes' self-criticism (Mosewich et al., 2013). The SC-AV is a 7-item scale that was

re-designed from a self-monitoring log measure developed by Gilbert and Procter (2006). The instructions of this measure ask participants to reflect on a salient negative event from the past week in their sport and then respond to seven questions (e.g., *"how intrusive were your self-critical thoughts about a recent negative sport event?"*). Responses for all questions range from 1 to 10 with different wording appearing for the scale anchors, depending on the phrasing of the question *(e.g.,* 1 = "*not at all intrusive*" to 10 = "*very intrusive*"). The SC-AV score is calculated by first reverse coding negatively worded items and then calculating the mean value for all items. Higher mean values indicate that the athlete has a higher state self-criticism. Internal consistency of this measure has been reported between $\alpha = .86$ and $\alpha = .90$ for women athletes (Killham, 2014; Killham et al., 2018; Mosewich et al., 2013; Study 1).

**4.3.2.2 Secondary Measurement Level.** The *secondary level* questionnaire (see Figure 4.4. for secondary distribution timing), in the order administered, included: sport performance measures (performance expectations and evaluations), self-attitude measures (self-compassion [short form] and self-criticism), and a body-related well-being measure (compulsive exercise; see Appendix C.6. for all secondary level measures).

Figure 4.4. *Study 2: Secondary Level Data Collection Timing*
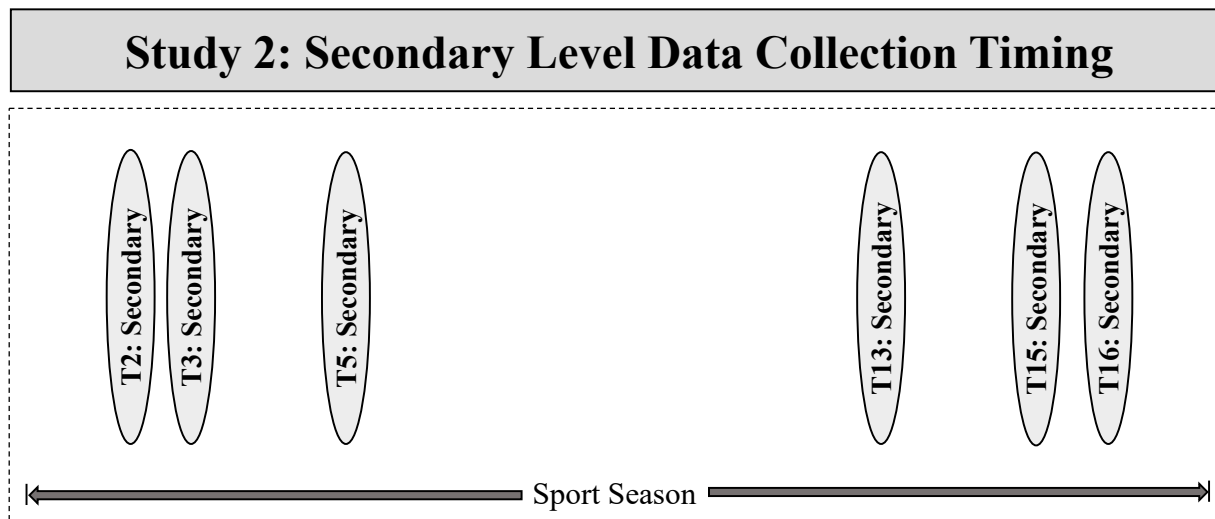


*Note.* The questionnaire packages were distributed over each athlete's competitive season. The length of the athletes' competitive seasons ranged from 7 weeks to 33 weeks and all athletes had a minimum of 2 regular season competitions.

**4.3.2.2.1 Sport Performance Measures.**

***Performance Evaluations and Expectations.***  At all secondary level questionnaire timepoints athletes responded to the same performance evaluations and expectations questions in reference to their upcoming and recent competitions as they did at the primary measurement level (as outlined above).

**4.3.2.2.2 Self-attitude Measures.**

***Self-compassion.***  A short form of the adapted athlete version of the Self-Compassion Scale (SCS-AV [SF)]) was used to measure self-compassion.  The SCS-AV (SF) is a 12-item measure that was adapted from the original Self-Compassion Scale – Short Form (Raes et al., 2011).  Adaptations made are the same that were made to the items in the 26-item SCS-AV (Killham et al., 2018; Study 1).  The SCS-AV (SF) includes specific language for athletes (e.g., "other athletes") instead of the non-contextualized or general population language of the original scale (e.g., "other people").  The scale items assess the six components of self-compassion, with two items per subscale (e.g., mindfulness "when something upsets me in sport I try to keep my emotions in balance").  Responses to each item range from 1 (*almost never*) to 5 (*almost always*).  Negatively worded items were reverse coded and individual mean scores were calculated, with higher scores representing higher self-compassion.  Test-retest and factorial analyses have been conducted for the SCS (SF) and the scale has been evaluated as a reliable and valid alternative to the original 26-item scale (Raes et al., 2011).  The SCS-AV (SF) has not yet been examined with women athletes.

***Self-criticism.***  At all secondary level timepoints athletes responded to the same state self-criticism (SC-AV) measure that assessed athletes' self-criticism at the primary measurement level (as outlined above; Mosewich et al., 2013).

**4.3.2.2.3 Body-related Well-being Measures.**

***Compulsive Exercise.***  The Compulsive Exercise Test – Athlete Version (CET-AV; Plateau et al., 2014) is a 15-item measure with three subscales: avoidance of negative affect (6 items; e.g., "if I cannot exercise I feel low or depressed"), mood improvement (5 items; e.g., "exercise improves my mood"), and weight control exercise (4 items; e.g., "if I feel I have eaten too much, I will do more exercise").  Responses to the CET-AV items range from 0 (*never true*) to 5 (*always true*) and higher scores indicate greater compulsivity related to athletes' exercise behaviours and attitudes.  The CET-AV produces both subscale scores and a global score

(Plateau et al., 2014). The subscale mean scores are calculated and then the three subscale scores are summed to produce the global CET-AV score (Plateau et al., 2014). The CET-AV items and scale were analyzed to determine the structure that would be the best fit for the data and also be representative of athletes' compulsive exercise through a rigorous psychometric evaluation (Plateau et al., 2014). The internal consistency has been reported between $\alpha = .62$ and $\alpha = .89$ for women athletes (Killham, 2014; Plateau et al., 2014).

**4.3.2.3 Daily Measurement Burst.** The *daily burst* measures (see Figure 4.5. for daily burst distribution timing), in the order administered, include: sport performance perceptions (daily evaluation of sport performance [for rest and recovery, training, and competition], and single items for eudaimonic well-being, body-related well-being, and self-attitudes (self-compassion and self-criticism; see Appendix C.7. for all Daily Burst measures).

Figure 4.5. *Study 2: Daily Burst Data Collection Timing*
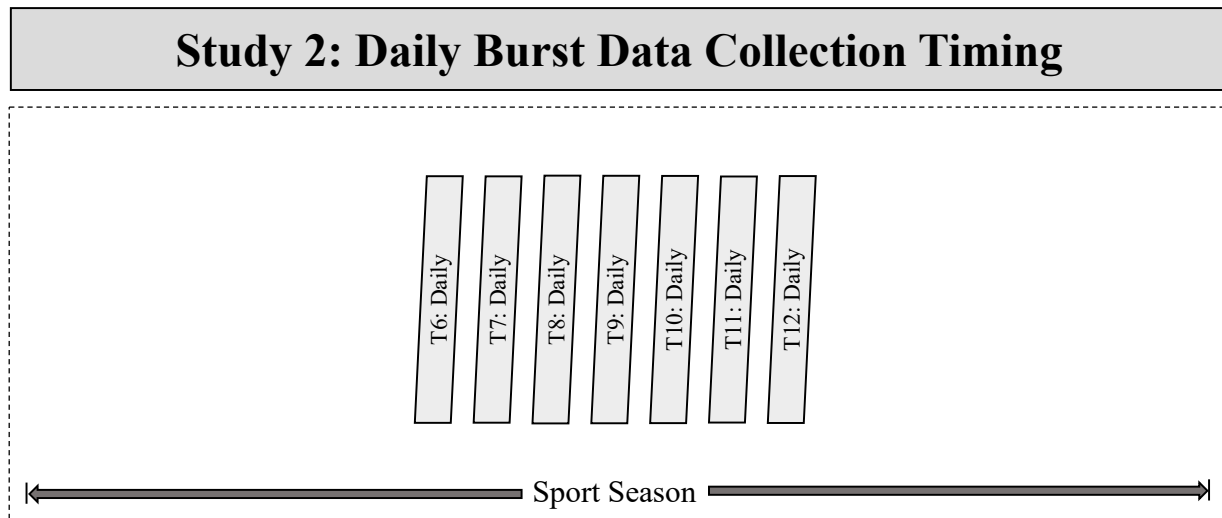


*Note.* The questionnaire packages were distributed over each athlete's competitive season. The daily measurement burst was completed across the middle week of the competitive season from Monday to Sunday.

***Daily Measurement Burst Items.*** The focal constructs were measured through the use of single items. Athletes were asked to respond to questions about the following study areas:

- Sport performance – Athletes were asked to evaluate their performance for that specific day regarding their rest and recovery activities, their training activities, and their competitions that were completed on the specific day (e.g., "using the following scale

rate your performance in training today"). Responses range from 1 (*less than*) to 7 (*better than*) compared to their normal performance over the past 12 months.

- Eudaimonic well-being – Eudaimonic well-being was measured with a single item that focused on reaching one's potential in sport, "I worked toward my potential as an athlete." Responses range from 1 (*not at all*) to 6 (*extremely*), with higher responses representing higher eudaimonic well-being.

- Body-related well-being – Body-related well-being was measured with a single item reflective of body appreciation "I appreciated my body in my sport." Responses range from 1 (*not at all*) to 6 (*extremely*), with higher responses representing higher body-related well-being.

- Self-attitude – Self-compassion was assessed with a single item "I tried to be kind to myself". Responses range from 1 (*not at all*) to 6 (*extremely*), with higher responses representing higher self-compassion.

- Self-attitude – Self-criticism was measured with the single item "I was really hard on myself". Responses range from 1 (*not at all*) to 6 (*extremely*), with higher responses representing higher self-criticism.

### 4.3.3 Data Analysis

Data analysis followed a series of steps, including data cleaning and assumption testing, cross-sectional analyses, longitudinal analyses, and multilevel modelling analyses (see Table 4.1. for illustration of study analysis and hypothesis alignment).

**4.3.3.1 Step One: Data management and cleaning.** Data analysis for the current study began with data cleaning, assumption testing (i.e., normality, skewness, kurtosis, linearity, homoscedasticity of residuals, and multicollinearity). Further, univariate and multivariate outliers were identified. The primary goal of step one was to manage all data and assess what data would be included in hypothesis testing. This was an important step within the data analysis procedures, which helped to make sure that measure scoring procedures were followed closely, and that all data was imported into the statistical programs without errors.

**4.3.3.2 Step Two: Pre-analysis protocols.** The primary goal of step two was to examine the variables within each timepoint. Missing data was evaluated and managed through the application of expectation maximization algorithms, which were conducted in SPSS (version 24). Further, psychometric assessment and evaluation of descriptive statistics were conducted

for all scales as part of the pre-analysis protocols.  Specifically, means and standard deviations were calculated, internal consistency values were examined using Cronbach's (1951) alpha, and fit indices were computed for the SPPS.  Reliability and validity were examined to ensure suitability of the modified measures for assessing change over time and for ensuring the results were not confounded by measurement error or additive response biases (e.g., aging over time could result in participants responding differently over time; e.g., Tabachnick & Fidell, 2013).  Specifically, estimates of score reliability (e.g., test-retest, composite reliability) and score validity (e.g., factor structure) were calculated.

   **4.3.3.3 Step Three: Hypothesis testing.**  There were several stages of hypothesis testing to address each hypothesis (see Table 4.2. for hypothesis and analysis alignment).  Specifically, to assess the data within timepoints (within levels/burst), across timepoints, and across levels (across levels/ burst) a longitudinal multilevel modelling approach was adopted.  Generally speaking, hypothesis testing included bivariate correlations (Pearson) and hierarchical regression analyses to address Hypothesis 1, 2, and 3, while latent growth curve modelling and multilevel modelling were used to address Hypothesis 4 and 5, respectively.  Latent growth curve modelling and multilevel modeling are advantageous because they can account for within-person and between-person changes and comparisons, which is highly valuable given the longitudinal measurement-burst design (Singer & Willet, 2003).

   Latent growth modelling examines individual change over time.  Specifically, latent growth modelling is a form of structural equation modelling that is intended for repeated measures (without the restrictions and assumptions associated with repeated measures – ANOVAs).  In addition the latent growth models, within the multilevel modelling analyses will examine the data in three ways: (1) the within-athlete variance will estimate the variation within athletes over time on all measures of self-compassion, performance, and well-being, (2) the between-athlete variance will estimate the extent to which athletes differ from one another on all the study variables within measurement levels/bursts, and (3) the between-athlete variance will also estimate the extent to which athletes differ from one another on all study variables across levels and measurement bursts.  Multilevel models allow variance to be partitioned into levels that correspond to the dataset (e.g., Byrne, 2012); in this case the within-athlete variance and between-athlete variance.

Table 4.2. *Study 2: Alignment of Research Questions, Hypotheses, and Corresponding a priori Analysis Plan and Statistical Programs*

| Research Question: | Hypothesis: | Analyses: |
|---|---|---|
| 1. Is self-compassion related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints? | • Self-compassion would be positively correlated with women athletes' performance perceptions, eudaimonic well-being, and body-related well-being within timepoints. | • Within timepoint bivariate correlations.<br>• SPSS |
| 2. Is self-criticism related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints? | • Self-criticism would be negatively correlated with women athletes' performance perceptions, eudaimonic well-being, and body-related well-being within timepoints. | • Within timepoint bivariate correlations.<br>• SPSS |
| 3. Does self-compassion contribute beyond self-criticism in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints? | • Self-compassion would contribute significant variance beyond self-criticism in women athletes' performance perceptions, eudaimonic well-being, and body-related well-being within timepoints. | • Within timepoint hierarchical regressions.<br>• SPSS |
| 4. Are there changes in women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being across timepoints? | • There will be changes (significant slope) in women athletes' self-compassion, performance perceptions, eudaimonic well-being, and body-related well-being across timepoints. | • Latent Growth Modelling.<br>• M *plus* |
| 5. Are there relationships between women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, body-related well-being across timepoints? | • There will be relationships between women athletes' performance perceptions, eudaimonic well-being, body-related well-being across timepoints. | • Longitudinal Multilevel Modelling.<br>• M *plus* |

**4.4 Results**

**4.4.1 Data Cleaning and Assumption Testing**

Prior to data analysis all data was deidentified, cleaned, and underwent statistical assumption testing. The data was deidentified by assigning participant numbers and removing all personal information (i.e., e-mail addresses, first names, and last name initials). As part of the data cleaning process within timepoint missing data was managed. The a priori cutoff for missing data was either two missing points in a subscale or 20% of total items within each timepoint (Tabachnick & Fidell, 2013). These missing data criteria have been applied and published in previous sport psychology research (e.g., Ferguson et al., 2014; Killham et al., 2018). This a priori missing data decision was particularly relevant for correlation and regression analyses as missing data can be an issue within SPSS. However, missingness between time points was not modified in any way as M*plus* employs a Robust Maximum Likelihood (MLR) estimator to manage missing data within participants across timepoints (Byrne, 2012; Muthén & Muthén, 2017).[5] All missing data was random (within and between timepoints) and therefore was included in the LGM and MLM models as within M*plus*, all available data is included in the models. However, within longitudinal studies participant attrition over time is expected (e.g., Byrne, 2012; Little, 2013; Tabachnick & Fidell, 2013), and drop-out over time trends were observed across this study. Univariate outliers for training volume were identified (seven women with training volumes higher than 3 standard deviations of the within timepoint mean), however their outlying scores were typical for their primary sport and therefore were kept in the analysis as they are still representative of the study sample. No other univariate or multivariate outliers were identified.

Following data cleaning the normality of data was assessed across all 17 timepoints (see Table C.9-1. to Table C.9-17. in Appendix C.9. for descriptive statistics for all variables across all timepoints, including observed range, mean, standard deviation, skewness, and kurtosis). Violations for skewness were identified for the following scales: Evaluation (T13), Outcome (T13, and T17), Expectation (T14), Preparedness (T3, T4, T13, T14, and T15), Rest and

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[5] Within timepoint mean replacement values remained in the data file when conducting analyses in M*plus*. Only the between timepoint missing data was left as missing. For example, a participant could have been missing one data point for the SCS-AV at T1 and T14, but missing data for the full SCS-AV at T4 and T17. Therefore, missing data would have been managed through mean replacement at T1 and T14 but no data would have been altered for T4 and T17.

Recovery (T8 and T9), SPPS (T1, T4, T14, and T17), Autonomy and Relatedness (T1, T4, T14, and T17), Mastery (T1, T4, T14, and T17), Meaning (T1, T4, T14, and T17), Vitality (T1, T4, T14, and T17), IES-2 (T17), SCS-AV(SF) (T2), SCS-AV (SI) (T7), SC-AV (T2, T5, T6, T8, T10, and T14), SC-AV (SI) (T7, T9, T10, T11, and T12), CET-AV (T2), EWB (T8), and BRWB (T6, T7, T8, T10, and T11). Violations for kurtosis were identified for the following scales: Expectation (T3), Preparedness (T3, T4, and T14), Rest and Recovery (T6, T7, T8, T9, and T11), Training (T and, T11), SPPS (T1, T4, T14, and T17), Autonomy and Relatedness (T1, and T4), Mastery (T4, T14, and T17), Meaning (T1, T4, and T17), Vitality (T1), and SC-AV (T1). Transformations (logarithmic) were conducted on the scales that violated normality assumptions. However, the results and conclusions of the transformed data for Hypothesis 1, 2, and 3 were consistent with the results of the original data. Further, within LGM and MLM analyses the primary assumption for linearity was met (Byrne, 2012). Therefore, for practical (i.e., the same data to be analyzed across all 5 hypotheses) and theoretical reasons (i.e., no differences in conclusions for Hypothesis 1, 2, and 3) the original data was interpreted and is presented and discussed below.

### 4.4.2 Sample and Demographics

The final sample in this study consisted of 120 women athletes. All participants had at least one complete survey at each level (i.e., at the primary level, secondary level, and daily burst) and had between 3 and 17 complete surveys across the 17 timepoints (see Table 4.3. depicting the sample at each timepoint). The final sample included in the analyses for this study was determined based on several factors. First, athletes needed to complete the Time 1 questionnaire package to ensure that all relevant demographic and starting-point data was collected for all participants. Second, athletes needed to have completed at minimum one primary level questionnaire, one secondary level questionnaire, and one of the daily measurement burst questionnaires to fulfill the required data needs for the LGM and MLM analyses in M *plus* (Muthén & Muthén, 2017).[6] Within each timepoint guidelines for minimum $N$ per measure were fulfilled for the correlation and regression analyses, the specific guidelines

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[6] Comparison samples were run to consider a more liberal (Time 1 complete: $n = 179$) and a more conservative participant inclusion criteria (3 complete questionnaires at the primary, secondary, and daily level/burst: $n = 68$). All three samples had similar descriptive statistics and correlation results. However, there was an increase in nonconverging analyses in the conservative sample due to not meeting minimum coverage settings, and potentially increasing sample representation error in the liberal sample due to individual athletes not being represented at each level/burst.

state that samples should have a minimum 5:1 ratio for participants to measures or predictors (Tabachnick, & Fidell, 2013). However, it is important to recognize that the final sample is under powered for the LGM and MLM analyses, as the final sample did not reach the initial sample size goal of 200 athletes (Kline, 2011; Singer & Willett, 2003). Throughout this study marginally significant results were identified at $p < .10$ to highlight result trends that might have reached traditionally significant levels with a larger sample that satisfied guidelines for minimum $N$ for LGM and MLM specific analyses. Therefore, the results of Hypothesis 4 and Hypothesis 5 should be considered exploratory.

The women athletes in this study primarily identified as Canadian (93.31%) and white (89.20%). Further, the athletes were between 16 and 35 years of age ($M = 22.47$, $SD = 5.14$) at the first timepoint, with calculated Body Mass Index (BMI) between 13.57 and 33.53 ($M = 19.96$, $SD = 3.74$: kg/m$^2$). Four athletes did not report their weight and height and were therefore not included in the BMI calculation. The women athletes reported a variety of team and individual non-aesthetic primary sports[7] (see Table 4.4.), with between 1 and 28 years of sport specific experience ($M = 10.17$, $SD = 6.65$). Of the 120 athletes, 98 athletes (81.67%) reported being currently coached at Time 1, with between 0- and 10-years sport experience being coached by their current coach ($M = 1.98$, $SD = 2.10$). The women also reported that they typically train or compete 1 to 7 days per week ($M = 4.58$, $SD = 1.47$) with typically 1 to 3 sessions per day ($M = 1.26$, $SD = 0.43$). Further, the athletes reported their scheduled and completed hours of training and competition at each of the primary and secondary measurement points (see Table 4.5.).

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[7] Athletes from aesthetic and non-aesthetic sports were recruited, however very few aesthetic sport athletes volunteered, and no aesthetic sport athletes met the completeness expectations and were not included in the analysis.

Table 4.3. *Study 2: Total Participants Included in Analysis by Timepoint and Scale (Time 1 to Time 17)*

| Measure | T1 P | T2 S | T3 S | T4 P | T5 S | T6 D | T7 D | T8 D | T9 D | T10 D | T11 D | T12 D | T13 S | T14 P | T15 S | T16 S | T17 P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Timepoint Total *n* | 120 | 111 | 108 | 110 | 100 | 68 | 72 | 72 | 70 | 73 | 66 | 70 | 94 | 84 | 74 | 67 | 76 |
| Evaluation | 37 | 68 | 54 | 58 | 48 | | | | | | | | 40 | 41 | 38 | 38 | 45 |
| Outcome | 37 | 67 | 54 | 58 | 48 | | | | | | | | 40 | 41 | 38 | 38 | 45 |
| Expectation | 80 | 71 | 65 | 61 | 51 | | | | | | | | 41 | 53 | 39 | 36 | 29 |
| Preparedness | 80 | 72 | 65 | 60 | 51 | | | | | | | | 42 | 53 | 39 | 36 | 31 |
| Rest & Recovery | | | | | | 44 | 42 | 29 | 28 | 28 | 36 | 37 | | | | | |
| Training | | | | | | 23 | 34 | 45 | 39 | 49 | 28 | 20 | | | | | |
| Competition | | | | | | 2 | 4 | 5 | 6 | 1 | 5 | 15 | | | | | |
| SPPS | 120 | | | 110 | | | | | | | | | | 84 | | | 76 |
| A&R | 120 | | | 110 | | | | | | | | | | 82 | | | 75 |
| Mastery | 120 | | | 110 | | | | | | | | | | 81 | | | 75 |
| Meaning | 120 | | | 109 | | | | | | | | | | 81 | | | 75 |
| Vitality | 120 | | | 108 | | | | | | | | | | 79 | | | 75 |
| BAS | 120 | | | 108 | | | | | | | | | | 80 | | | 75 |
| EWB | | | | | | 68 | 72 | 72 | 70 | 73 | 66 | 70 | | | | | |
| IES-2 | 120 | | | 108 | | | | | | | | | | 80 | | | 75 |
| BRWB | | | | | | 67 | 72 | 72 | 70 | 73 | 66 | 70 | | | | | |
| CET-AV | | 108 | 107 | | 98 | | | | | | | | 94 | | 73 | 67 | |
| SCS-AV | 120 | | | 105 | | | | | | | | | | 78 | | | 71 |
| SCS-AV (SF) | | 111 | 108 | | 100 | | | | | | | | 94 | | 74 | 66 | |
| SCS-AV (SI) | | | | | | 67 | 72 | 71 | 70 | 73 | 66 | 70 | | | | | |
| RSES | 120 | | | 105 | | | | | | | | | | 78 | | | 73 |
| SC-AV | 120 | 108 | 107 | 106 | 99 | | | | | | | | 93 | 78 | 73 | 67 | 72 |
| SC-AV (SI) | | | | | | 68 | 72 | 71 | 70 | 73 | 66 | 70 | | | | | |

*Note.* Athletes were included in the sample if they had a minimum of one fully complete timepoint at each measurement level (P = primary, S = secondary, and D = daily). Evaluation = retrospective sport performance evaluations (single item); Outcome = retrospective sport performance outcome perception (single item); Expectation = prospective sport performance expectations (single item); Preparedness = prospective sport performance preparedness perception (single item); Rest & Recovery = daily rest and recovery evaluation (single item); Training = daily training evaluation (single item) ; Competition = daily competition evaluation (single item); SPPS = Sport Performance Perceptions Scale; A&R = autonomy and relatedness subscales of the Basic Needs Satisfaction in Sport Scale; Mastery = three subscales of the Physical Self-Perception Profile - Revised; Meaning = Sense of Meaning Scale; Vitality = Subjective Vitality in Sport; BAS = Body Appreciation Scale; EWB = Eudaimonic Well-Being (single item); IES-2 = Intuitive Eating Scale - 2 ; BRWB = Body-Related Well-Being (single item); CET-AV = Compulsive Exercise Test – Athlete Version; SCS-AV = Self-Compassion Scale – Athlete Version; SCS-AV (SF) = Self-Compassion Scale – Athlete Version (Short Form); SCS-AV (SI) = Self-Compassion Scale – Athlete Version (Single Item); RSES = Rosenberg Self-Esteem Scale; SC-AV = Self-Criticism – Athlete Version; SC-AV (SI) = Self-Criticism – Athlete Version (single item).

Table 4.4. *Study 2: Reported Sport Participation and Highest and Current Competition Levels*

| Primary Sport | N | % of sample | Local | | Provincial | | Regional | | National | | Elite for Age | | International | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Current | Highest | Current | Highest | Current | Highest | Current | Highest | Current | Highest | Current | Highest |
| Basketball | 9 | 7.5% | 2 | | 3 | 2 | 2 | | 2 | 4 | | 1 | | 2 |
| Biathlon | 1 | 0.8% | 1 | | | 1 | | | | | | | | |
| Curling | 3 | 2.5% | | | | | | | 1 | 1 | 2 | 2 | | |
| Fastball | 1 | 0.8% | | | 1 | 1 | | | | | | | | |
| Fencing | 1 | 0.8% | | | | | | | | | | | 1 | 1 |
| Football | 11 | 9.2% | | | 1 | 1 | 9 | 5 | | 4 | | | 1 | 1 |
| Futsal | 3 | 2.5% | | | 3 | 2 | | | | 1 | | | | |
| Ice Hockey | 7 | 5.8% | | | | | 6 | 3 | 1 | 4 | | | | |
| Judo | 2 | 1.7% | | | | | | | 2 | 1 | | 1 | | |
| Ringette | 3 | 2.5% | | | | | 3 | | | 3 | | | | |
| Rugby | 4 | 3.3% | 1 | | 3 | 2 | | | | 2 | | | | |
| Running (x-c/road/ultra) | 7 | 5.8% | 3 | 2 | 1 | | 1 | 1 | 2 | 4 | | | | |
| Soccer | 26 | 21.7% | 9 | 3 | 6 | 7 | 7 | 8 | 3 | 7 | 1 | 1 | | |
| Softball | 3 | 2.5% | | | 2 | | 1 | 2 | | 1 | | | | |
| Swimming | 5 | 4.2% | | | 2 | | | 1 | 3 | 1 | | 2 | 1 | 1 |
| Track and Field | 5 | 4.2% | 1 | | 1 | 2 | 1 | 1 | 2 | 2 | | | | |
| Triathlon | 3 | 2.5% | | | 1 | 1 | 1 | 1 | | | | | 1 | 1 |
| Ultimate Frisbee | 6 | 5.0% | 1 | | | | | 1 | 2 | 2 | 1 | | 2 | 3 |
| Volleyball | 15 | 12.5% | 1 | 1 | 4 | 1 | 4 | 1 | 6 | 11 | | 1 | | |
| Weightlifting | 1 | 0.8% | | | 1 | | | | | 1 | | | | |
| Wrestling | 4 | 3.3% | | | | | 2 | | 1 | 2 | 1 | 1 | | 1 |
| TOTAL | 120 | | 19 | 6 | 29 | 20 | 37 | 24 | 25 | 51 | 5 | 9 | 6 | 10 |

*Note.* Participation and competition information was collected at Time 1. Athletes reported both their Current = current competition level and Highest = highest competition levels.

Table 4.5. *Study 2: Primary Sport Training and Competition Volume*

| Time | Scheduled Hours | | Completed Hours | | Discrepancy Hours | |
|---|---|---|---|---|---|---|
| | Range | Mean (*SD*) | Range | Mean (*SD*) | Range | Mean (*SD*) |
| Typical | 0.00 – 27.50 | 10.34 (*5.21*) | | | | |
| Time 1 | 0.00 – 26.00 | 8.68 (*5.83*) | 0.00 – 26.00 | 8.27 (*5.44*) | -7.50 – 8.00 | -0.41 (*1.92*) |
| Time 2 | 0.00 – 46.00 | 9.82 (*6.47*) | 0.00 – 46.00 | 8.53 (*6.51*) | -12.00 – 5.00 | -1.28 (*2.54*) |
| Time 3 | 0.00 – 24.00 | 9.34 (*5.49*) | 0.00 – 24.00 | 7.94 (*5.45*) | -17.00 – 10.00 | -1.40 (*3.16*) |
| Time 4 | 0.00 – 25.00 | 9.42 (*5.56*) | 0.00 – 25.00 | 8.67 (*5.66*) | -7.00 – 9.00 | -0.67 (*1.92*) |
| Time 5 | 0.00 – 24.00 | 8.92 (*5.56*) | 0.00 – 24.00 | 8.22 (*5.61*) | -9.00 – 5.50 | -0.70 (*1.80*) |
| Time 13 | 0.00 – 26.00 | 6.86 (*5.47*) | 0.00 – 24.00 | 6.11 (*5.55*) | -12.00 – 6.00 | -0.76 (*2.48*) |
| Time 14 | 0.00 – 55.00 | 10.26 (*8.00*) | 0.00 – 55.00 | 9.91 (*8.15*) | -12.00 – 9.00 | -0.35 (*2.23*) |
| Time 15 | 0.00 – 27.00 | 8.27 (*6.34*) | 0.00 – 30.00 | 8.68 (*6.75*) | -10.00 – 23.00 | 0.41 (*4.22*) |
| Time 16 | 0.00 – 40.00 | 8.58 (*7.12*) | 0.00 – 40.00 | 8.31 (*6.87*) | -7.00 – 14.00 | -0.27 (*2.59*) |
| Time 17 | 0.00 – 40.00 | 9.28 (*7.76*) | 0.00 – 40.00 | 8.78 (*7.95*) | -10.00 – 3.00 | -0.50 (*1.56*) |

*Note*. Typical training and competition volume were reported as part of the demographic survey at Time 1. Training and competition data were not collected during the daily measurement burst (Time 6 – Time 12). The ranges presented are actual reported values. Further, at each timepoint the reported minimum scheduled and completed hours of training was 0 hours – theses athletes often reported being injured or ill or having not completed their training for other unspecified reasons.

### 4.4.3 Descriptive Statistics and Scale Reliabilities

A summary of descriptive statistics and internal consistency scale reliabilities are reported in Table 4.6. Further, the developed SPPS measure underwent an initial psychometric assessment through Structural Equation Modelling with M*plus* (version 8). While, there is a need for further examination of the SPPS,[8] the results of the initial assessment highlight that the measure is multidimensional, which is aligned with the intended conceptual model, and therefore the global scores were used for all analyses (see Table 4.6. below and Table C.10-1. and Table C.10-2. in Appendix C.10. for initial psychometric assessment of the SPPS at all primary timepoints and model fit results including RMSEA, TLI, CFI, and SRMR indices).

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[8] The SPPS measure was tested to compare the goodness of fit of a single factor model and a 5 factor model prior to data analysis. Further examination of the measure is needed due to insufficient *n* per item included in the measure models assessed and potential ceiling effects that were potentially a result of high performance athletes comprising the study sample.

Table 4.6. *Study 2: Summary of Descriptive Statistics and Scale Reliabilities (Time 1 to Time 17)*

| Measure | T1 P | T2 S | T3 S | T4 P | T5 S | T6 D | T7 D | T8 D | T9 D | T10 D | T11 D | T12 D | T13 S | T14 P | T15 S | T16 S | T17 P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Evaluation | 4.30 (1.43) - | 4.13 (1.49) - | 4.22 (1.70) - | 4.62 (1.39) - | 5.04 (1.37) - | | | | | | | | 4.73 (1.74) - | 4.76 (1.43) - | 4.82 (1.72) - | 4.53 (1.54) - | 4.64 (1.43) - |
| Outcome | 4.38 (1.30) - | 4.55 (1.83) - | 4.44 (1.87) - | 4.76 (1.50) - | 4.88 (1.55) - | | | | | | | | 5.33 (1.69) - | 4.76 (1.70) - | 4.92 (1.76) - | 5.00 (1.71) - | 4.80 (1.47) - |
| Expectation | 4.64 (1.54) - | 4.86 (1.36) - | 4.94 (1.10) - | 4.90 (1.27) - | 4.88 (1.09) - | | | | | | | | 4.56 (1.69) - | 5.00 (1.26) - | 4.97 (1.50) - | 4.81 (1.41) - | 5.00 (1.75) - |
| Preparedness | 4.76 (1.49) - | 4.97 (1.32) - | 4.95 (1.12) - | 5.07 (1.16) - | 5.16 (0.90) - | | | | | | | | 4.67 (1.56) - | 4.91 (1.32) - | 5.13 (1.49) - | 4.64 (1.48) - | 4.90 (1.72) - |
| Rest & Recovery | | | | | | 4.02 (1.17) - | 3.83 (1.10) - | 3.90 (1.01) - | 4.00 (0.72) - | 3.61 (1.13) - | 4.11 (1.14) - | 3.84 (1.21) - | | | | | |
| Training | | | | | | 3.91 (0.85) - | 4.06 (1.30) - | 4.36 (1.30) - | 4.51 (1.19) - | 3.94 (1.41) - | 4.50 (1.20) - | 4.55 (1.47) - | | | | | |
| Competition | | | | | | 5.00 (0.00) - | 5.25 (1.71) - | 5.40 (1.82) - | 4.67 (2.07) - | 5.00 (---) - | 3.00 (1.22) - | 4.53 (1.36) - | | | | | |
| SPPS | 5.89 (0.54) .89 | | | 5.82 (0.60) .91 | | | | | | | | | | 5.75 (0.63) .92 | | | 5.80 (0.73) .94 |
| A&R | 6.13 (0.66) .82 | | | 6.00 (0.74) .86 | | | | | | | | | | 5.85 (0.93) .90 | | | 5.92 (0.99) .91 |
| Mastery | 3.82 (0.69) .93 | | | 3.24 (0.58) .95 | | | | | | | | | | 3.28 (0.56) .94 | | | 3.27 (0.62) .96 |
| Meaning | 6.20 (0.76) .91 | | | 6.09 (0.85) .94 | | | | | | | | | | 6.06 (0.98) .96 | | | 6.02 (1.12) .97 |
| Vitality | 5.52 (1.07) .89 | | | 5.57 (0.95) .87 | | | | | | | | | | 5.53 (1.04) .90 | | | 5.52 (1.24) .95 |
| BAS | 3.88 (0.70) .93 | | | 3.95 (0.66) .94 | | | | | | | | | | 3.93 (0.68) .94 | | | 3.95 (0.69) .93 |

| Measure | P1 | P2 | P3 | P4 | P5 | D1 | D2 | D3 | D4 | D5 | D6 | D7 | S1 | S2 | S3 | S4 | S5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EWB | | | | | | 3.82 (1.48) – | 3.88 (1.36) – | 4.08 (1.25) – | 4.24 (1.20) – | 4.00 (1.47) – | 3.77 (1.39) – | 3.91 (1.46) – | | | | | |
| IES-2 | 3.45 (0.46) .84 | | | 3.36 (0.44) .86 | | | | | | | | | 3.50 (0.56) .87 | | | | 3.60 (0.50) .89 |
| BRWB | | | | | | 4.19 (1.17) – | 4.24 (1.19) – | 4.26 (1.24) – | 4.09 (1.24) – | 4.26 (1.33) – | 4.17 (1.20) – | 4.06 (1.28) – | | | | | |
| CET-AV | | 2.99 (0.78) .85 | 2.90 (0.74) .84 | 3.01 (0.82) .88 | | | | | | | | | 2.95 (0.80) .87 | | 2.92 (0.85) .88 | 2.99 (0.90) .91 | |
| SCS-AV | 3.18 (0.68) .94 | | | 3.20 (0.73) .95 | | | | | | | | | 3.35 (0.73) .96 | | | | 3.33 (0.79) .96 |
| SCS-AV (SF) | | 3.18 (0.72) .88 | 3.28 (0.80) .92 | 3.27 (0.76) .90 | | | | | | | | | 3.24 (0.73) .90 | | 3.35 (0.82) .92 | 3.34 (0.78) .91 | |
| SCS-AV (SI) | | | | | | 4.48 (0.93) – | 4.21 (1.03) – | 4.32 (1.04) – | 4.19 (1.27) – | 4.16 (1.21) – | 4.27 (1.10) – | 3.97 (1.09) – | | | | | |
| RSES | 3.12 (0.40) .75 | | | 3.11 (0.42) .80 | | | | | | | | | 3.16 (0.42) .81 | | | | 3.18 (0.42) .79 |
| SC-AV | 4.43 (1.98) .92 | 4.46 (2.00) .94 | 4.03 (2.21) .95 | 4.21 (2.38) .95 | 3.79 (2.14) .95 | | | | | | | | 3.64 (1.97) .93 | 3.82 (2.13) .94 | 3.83 (2.20) .96 | 3.19 (1.81) .92 | 3.60 (2.31) .96 |
| SC-AV (SI) | | | | | | 2.24 (1.25) – | 2.40 (1.19) – | 2.37 (1.37) – | 2.34 (1.26) – | 2.37 (1.27) – | 2.33 (1.46) – | 2.44 (1.37) – | | | | | |

*Note*. Primary Level Measures (P): Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version. Secondary Level Measures (S): Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version. Daily Burst Measures (D): Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism. Alpha values are not reported for single item measures.

### 4.4.4 Hypothesis Testing

#### 4.4.4.1 Hypothesis 1

The first hypothesis tested was that self-compassion would be positively related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints. To test the three components of Hypothesis 1, bivariate correlations were calculated within each timepoint (see Table 4.7. for summary results and Table C.11-1. to Table C.11-17. in Appendix C.11. for full correlation results [Hypothesis 1 and Hypothesis 2]).

There was partial support for the first part of Hypothesis 1 (correlations with sport performance perception measures within all 17 timepoints), as self-compassion was positively correlated with five of ten performance evaluation measures ($r$s = .24 to .48, $p$s = .073 to < .001; T1, T3, T4, T13, and T15), five of ten performance outcome measures ($r$s = .21 to .56, $p$s = .046 to < .001; T2, T3, T4, T13, and T15), one of ten performance expectation measures ($r$ = .21, $p$ < .001; T13), two of ten sport performance preparedness measures ($r$s = .17 to .34, $p$s = .078 to .017; T2 and T13), all four sport performance perceptions measures ($r$s = .24 to .41, $p$s = .007 to < .001; T1, T4, T14, and T17), three of seven rest and recovery evaluation measures ($r$s = .21 to .30, $p$s = .092 to .034; T6, T7, and T10), four of seven training evaluation measures ($r$s = .40 to .48, $p$s = .016 to .001; T9, T10, T11, and T12), and two of seven competition evaluation measures ($r$s = .83 to .87, $p$s = .067 to .021; T7 and T9). However, there were negative correlations between self-compassion and one sport performance expectations measure ($r$ = -.24, $p$ = .067; T16) and one sport performance preparedness measure ($r$ = -.26, $p$ = .067; T16). Effect sizes are classified as small to medium for the first part of Hypothesis 1 (Pearson Correlation Coefficient effect size conventions: small effect $p$ = .10 - .30, medium effect $p$ = .31 -.49; Tabachnick & Fidell, 2013).

There was strong support for the second part of Hypothesis 1 (correlations with eudaimonic well-being within all 17 timepoints), as self-compassion was positively correlated with all four autonomy and relatedness measures ($r$s = .20 to .36, $p$s = .041 to < .001; T1, T4, T14, and T17), all four mastery measures ($r$s = .16 to .30, $p$s = .054 to .005; T1, T4, T14, and T17), two of four meaning measures ($r$s = .17 to .20, $p$s = .036 to .021; T1 and T4), all four vitality measures ($r$s = .22 to .38, $p$s = .030 to < .001; T1, T4, T14, and T17), all four body appreciation measures ($r$s = .42 to .56, all $p$s <.001; T1, T4, T14, and T17), and all seven single item measures of eudaimonic well-being ($r$s = .25 to .48, $p$s = .021 to < .001; T6, T7, T8, T9,

T10, T11, and T12). Effect sizes are classified as small to large for the second part of Hypothesis 1 (Pearson Correlation Coefficient effect size conventions: small effect $p$ = .1 - .30, medium effect $p$ = .31 -.49, and large effect $p$ = .50 or more; Tabachnick & Fidell, 2013).

There was full support for the third part of Hypothesis 1 (correlations with body-related well-being within all 17 timepoints), as self-compassion was positively correlated with all four intuitive eating measures ($r$s = .40 to .56, $p$s all < .001; T1, T4, T14, and T17), negatively related[9] to all six compulsive exercise measures ($r$s = -.24 to -.49, $p$s = .019 to .004; T2, T3, T5, T13, T15, and T16), and positively correlated with all seven single item measures of body-related well-being ($r$s = .54 to .82, $p$s all < .001; T6, T7, T8, T9, T10, T11, and T12). Effect sizes are classified as small to large for the third part of Hypothesis 1 (Tabachnick & Fidell, 2013).

### 4.4.4.2 Hypothesis 2

The second hypothesis tested was that self-criticism would be negatively related to women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being within timepoints. To test the three components of Hypothesis 2, correlations were calculated within each timepoint (see Table 4.7. below for summary results and Table C.12-1. to Table C.12-17. in Appendix C.11. for full correlation results [Hypothesis 1 and Hypothesis 2]).

There was partial support for the first part of Hypothesis 2 (correlations with sport performance perception measures within all 17 timepoints), as self-criticism was negatively correlated with six of ten performance evaluation measures ($r$s = -.23 to -.41, $p$s = .059 to .002; T3, T4, T5, T13, T14, and T15), five of ten performance outcome measures ($r$s = -.21 to -.45, $p$s = .039 to .001; T2, T3, T4, T13, and T15), three of four sport performance perceptions measures ($r$s = -.14 to -.19, $p$s = .053 to .038; T1, T14, and T17), two of seven rest and recovery evaluation measures ($r$s = -.23 to -.31, $p$s = .091 to .054; T10 and T12), and one of seven competition evaluation measures ($r$ = -.78, $p$ = .059; T8). However, counter to the hypothesis there was a positive correlation between self-criticism and one measure of sport performance expectations ($r$ = .24, $p$ = .080; T16), two measures of sport performance preparedness ($r$s = .18 to .25, $p$s = .078

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[9] Note that compulsive exercise is a measure of psychopathology and that a low score on the CET-AV represents more adaptive exercise attitudes and behaviours, meaning that a negative correlation between self-compassion and compulsive exercise is the hypothesized direction of the relationship.

to .017; T3 and T16), and one measure of training evaluation ($r = .29$, $p = .087$; T6).  Effect sizes are classified as small to large for the first part of Hypothesis 2 (Tabachnick & Fidell, 2013).

There was partial support for the second part of Hypothesis 2 (correlations with eudaimonic well-being within all 17 timepoints), as self-criticism was negatively correlated with two of four autonomy and relatedness measures ($r$s = -.12 to -.22, $p$s = .099 to .013; T1 and T4), two of four mastery measures ($r$s = -.22 to -.23, $p$s = .033 to .005; T1 and T17), one of four vitality measures ($r = -.21$, $p = .012$; T1), and all four body appreciation measures ($r$s = -.20 to -.38, $p$s = .040 to < .001; T1, T4, T14, and T17).  However, counter to the hypothesis there was a positive correlation between self-criticism and three of seven single item measures of eudaimonic well-being ($r$s = .17 to .27, $p$s = .084 to .012; T6, T9, and T11).  Effect sizes are classified as small for the second part of Hypothesis 2 (Tabachnick & Fidell, 2013).

There was strong support for the third part of Hypothesis 2 (correlations with body-related well-being within all 17 timepoints), as self-criticism was negatively correlated with three of four intuitive eating measures ($r$s = -.18 to -.31, $p$s = .055 to < .001; T1, T14, and T17), positively correlated[10] with all six compulsive exercise measures ($r$s = .20 to .37, $p$s = .019 to .001; T2, T3, T5, T13, T15, and T16), and negatively correlated with two of seven single item measures of body-related well-being ($r$s = -.23 to -.33, $p$s = .028 to .003; T7 and T8).  Effect sizes are classified as small to medium for the third part of Hypothesis 2 (Tabachnick & Fidell, 2013).

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[10] Note that compulsive exercise is a measure of psychopathology and that a low score on the CET-AV represents more adaptive exercise attitudes and behaviours.  Meaning that a positive correlation between self-criticism and compulsive exercise is the hypothesized direction of the relationship.

Table 4.7. *Study 2: Summary of Correlations Between Self-compassion (Self-criticism) and Measures of Sport Performance Perceptions and Well-being (Within Timepoints)*

| Measure | T1 | T2 | T3 | T4 | T5 | T6 | T7 | T8 | T9 | T10 | T11 | T12 | T13 | T14 | T15 | T16 | T17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | P | S | S | P | S | D | D | D | D | D | D | D | S | P | S | S | P |
| Evaluation | .28* | .07 | .31* | .48** | .18 |  |  |  |  |  |  |  | .29* | .21 | .24^ | -.12 | .16 |
|  | (-.21) | (-.04) | (-.33**) | (-.38**) | (-.23^) |  |  |  |  |  |  |  | (-.35*) | (-.31*) | (-.41**) | (-.07) | (-.15) |
| Outcome | .18 | .21* | .28* | .49** | .13 |  |  |  |  |  |  |  | .56** | .04 | .37* | -.04 | -.01 |
|  | (-.15) | (-.28*) | (-.21*) | (-.42**) | (-.46) |  |  |  |  |  |  |  | (-.45**) | (-.19) | (-.45**) | (-.07) | (-.17) |
| Expectation | .14 | .14 | .01 | -.03 | .08 |  |  |  |  |  |  |  | .21** | .14 | -.12 | -.24^ | -.19 |
|  | (-.00) | (-.14) | (-.01) | (.17) | (-.14) |  |  |  |  |  |  |  | (.09) | (-.11) | (.03) | (.24^) | (.09) |
| Preparedness | .13 | .17^ | -.02 | .06 | -.05 |  |  |  |  |  |  |  | .34* | .18 | -.08 | -.26^ | -.02 |
|  | (-.03) | (-.12) | (.18^) | (.02) | (.03) |  |  |  |  |  |  |  | (-.07) | (-.03) | (-.14) | (.25^) | (-.02) |
| Rest & Recovery |  |  |  |  |  | .21^ | .29* | .24 | .04 | .30^ | .13 | .09 |  |  |  |  |  |
|  |  |  |  |  |  | (-.02) | (-.03) | (-.00) | (-.18) | (-.31^) | (-.21) | (-.23^) |  |  |  |  |  |
| Training |  |  |  |  |  | .06 | -.04 | .08 | .40** | .44** | .48** | .48* |  |  |  |  |  |
|  |  |  |  |  |  | (.29^) | (-.10) | (.12) | (.19) | (-.04) | (.17) | (-.02) |  |  |  |  |  |
| Competition |  |  |  |  |  | a. | .87^ | .43 | .83* | a. | .17 | .32 |  |  |  |  |  |
|  |  |  |  |  |  | (a.) | (a.) | (-.78^) | (.11) | (a.) | (.00) | (.04) |  |  |  |  |  |
| SPPS | .24** |  |  | .38** |  |  |  |  |  |  |  |  |  | .28** |  |  | .41** |
|  | (-.14^) |  |  | (.00) |  |  |  |  |  |  |  |  |  | (-.19*) |  |  | (-.19^) |
| A&R | .20* |  |  | .36** |  |  |  |  |  |  |  |  |  | .21* |  |  | .21* |
|  | (-.12^) |  |  | (-.22*) |  |  |  |  |  |  |  |  |  | (-.08) |  |  | (-.13) |
| Mastery | .21* |  |  | .16^ |  |  |  |  |  |  |  |  |  | .25* |  |  | .30** |
|  | (-.23**) |  |  | (-.01) |  |  |  |  |  |  |  |  |  | (-.12) |  |  | (-.22*) |
| Meaning | .17* |  |  | .20* |  |  |  |  |  |  |  |  |  | .11 |  |  | .08 |
|  | (-.05) |  |  | (-.09) |  |  |  |  |  |  |  |  |  | (-.10) |  |  | (-.05) |
| Vitality | .27** |  |  | .38** |  |  |  |  |  |  |  |  |  | .22* |  |  | .29** |
|  | (-.21*) |  |  | (-.12) |  |  |  |  |  |  |  |  |  | (-.07) |  |  | (-.11) |
| BAS | .50** |  |  | .44** |  |  |  |  |  |  |  |  |  | .42** |  |  | .56** |
|  | (-.38**) |  |  | (-.22*) |  |  |  |  |  |  |  |  |  | (-.20*) |  |  | (-.29**) |
| EWB |  |  |  |  |  | .41** | .48** | .39** | .45** | .46** | .25* | .42** |  |  |  |  |  |
|  |  |  |  |  |  | (.17^) | (-.01) | (-.06) | (.27*) | (.11) | (.28*) | (.17^) |  |  |  |  |  |
| IES-2 | .43** |  |  | .40** |  |  |  |  |  |  |  |  |  | .44** |  |  | .56** |
|  | (-.31**) |  |  | (-.08) |  |  |  |  |  |  |  |  |  | (-.18^) |  |  | (-.20*) |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BRWB | | | | | | .54** (-.08) | .76** (-.23*) | .76** (-.33**) | .82** (-.08) | .71** (-.14) | .56** (.07) | .67** (.10) | | | | | |
| CET-AV | | -.25** (.20*) | -.24** (.28**) | | -.26** (.29**) | | | | | | | | -.23* (.30**) | | -.30** (.37**) | -.27* (.33**) | |
| SCS-AV | (-.69**) | | | (-.63**) | | | | | | | | | | (-.54**) | | | (-.56**) |
| SCS-AV (SF) | | (-.72**) | (-.69**) | | (-.69**) | | | | | | | | (-.49**) | | (-.62**) | (-.61**) | |
| SCS-AV (SI) | | | | | | (-.28*) | (-.30**) | (-.49**) | (-.18^) | (-.20*) | (-.17^) | (-.06) | | | | | |
| RSES | .59** (-.53**) | | | .63** (-.58**) | | | | | | | | | | | | .21 (-.27**) | .66** (-.45**) |
| SC-AV | -.69** | -.72** | -.69** | -.63** | -.69** | | | | | | | | -.49** | -.54** | -.62** | -.61** | -.56** |
| SC-AV (SI) | | | | | | -.28* | -.30** | -.49** | -.18^ | -.20* | -.17^ | -.06 | | | | | |

*Note.* Within timepoint correlations are reported in this table only between self-compassion (self-criticism) and all measures.

^ = $p < .10$. * = $p < .05$. ** = $p < .01$. All analyses were one-tailed. a. = unable to compute because one variable is constant.

Primary Level Measures (P): Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version. Secondary Level Measures (S): Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version. Daily Burst Measures (D): Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

### 4.4.4.3 Hypothesis 3

The third hypothesis tested was that self-compassion would contribute unique variance beyond self-criticism in women athletes' performance perceptions, eudaimonic well-being, and body-related well-being within each timepoint. To test the three components of hypothesis 3, hierarchical regression analyses were conducted (see Table 4.8. for summary results and Table C.12-1. to Table C.12-17. in Appendix C.12. for full regression results).

There was minimal support for the first part of Hypothesis 3 (unique variance beyond self-criticism in women athletes' sport performance perception measures within all 17 timepoints), as self-compassion contributed unique variance beyond self-criticism in one of ten performance evaluation measures ($\Delta R^2 = .10$, $p = .011$; T4), two of ten performance outcome measures ($\Delta R^2$s $= .08$ to $.12$, $p$s $= .019$ to $.020$; T4 and T13), two of ten performance expectation measures ($\Delta R^2$s $= .04$ to $.08$, $p$s $= .099$ to $.087$; T1 and T13), one of ten measures of sport performance preparedness ($\Delta R^2 = .11$, $p = .037$; T13), all four SPPS measures ($\Delta R^2$s $= .04$ to $.24$, $p$s $= .069$ to $< .001$; T1, T4, T14, and T17), two of seven rest and recovery evaluation measures ($\Delta R^2$s $= .09$ to $.10$, $p$s $= .092$ to $.063$; T7 and T10), four of seven training evaluation measures ($\Delta R^2$s $= .21$ to $.23$, $p$s $= .038$ to $.001$; T9, T10, T11, and T12), and one of seven competition evaluation measures ($\Delta R^2 = .68$, $p = .083$; T9). Effect sizes are classified as small to large for the first part of Hypothesis 3 (Cohen's $R^2$ effect size conventions: small effect $= 1\%$ - $5.9\%$, medium effect $= 6\%$ - $13.9\%$, and large effect $14\%$ or more; Tabachnick & Fidell, 2013).

There was strong support for the second part of Hypothesis 3 (unique variance beyond self-criticism in women athletes' eudaimonic well-being within all 17 timepoints), as self-compassion contributed unique variance beyond self-criticism in three of four autonomy and relatedness measures ($\Delta R^2$s $= .03$ to $.09$, $p$s $= .083$ to $.002$; T1, T4, and T14), three of four mastery measures ($\Delta R^2$s $= .04$ to $.05$, $p$s $= .068$ to $.049$; T4, T14, and T17), two of four meaning measures ($\Delta R^2 = .03$ to $.03$, $p$s $= .069$ to $.052$), all four vitality measures ($\Delta R^2$s $= .03$ to $.15$, $p$s $= .064$ to $< .001$; T1, T4, T14, and T17), all four body appreciation measures ($\Delta R^2 = .11$ to $.20$, $p$s $= .001$ to $< .001$; T1, T4, T14, and T17), and all seven single item measures of eudaimonic well-being ($\Delta R^2 = .09$ to $.25$, $p$s all $< .001$; T6, T7, T8, T9, T10, T11, and T12). Effect sizes are classified as small to large for the second part of Hypothesis 3 (Tabachnick & Fidell, 2013).

There was strong support for the third part of Hypothesis 3 (unique variance beyond self-criticism in women athletes' body-related well-being within all 17 timepoints), as self-

compassion contributed unique variance beyond self-criticism in all four intuitive eating measures ($\Delta R^2$s = .09 to .25, $p$s all < .001; T1, T4, T14, and T17), and all seven single item measures of body-related well-being ($\Delta R^2$s = .29 to .67, $p$s all < .001; T6, T7, T8, T9, T10, T11, and T12). Effect sizes are classified as medium to large for the third part of Hypothesis 3 (Tabachnick & Fidell, 2013).

### 4.4.4.4 Hypothesis 4

The fourth hypothesis tested was that there would be changes (significant slope) in women athletes' self-compassion, performance perceptions, eudaimonic well-being, and body-related well-being across timepoints. This hypothesis was tested using univariate Latent Growth Modelling (represent repeated measures of dependent variables as a function of time [within this study time is relative to the sport season]). Mean trending tables for the Primary Level, Secondary Level, and the Daily Measurement Burst each depict the linear shape of the study variables (see Figures 4.6., 4.7., and 4.8.).

There was mixed support for Hypothesis 4. Over the competitive sport season, performance expectations, sport performance preparedness, meaning, vitality, body appreciation, eudaimonic well-being (single item measure), self-compassion (SCS-AV and SCS-AV [SF]), and self-criticism (single item measure) did not change over the competitive season (no significant slope over time; see Table 4.9. below). While sport performance perceptions (SPPS; slope = -.06, $p$ = .01), autonomy and relatedness (slope = -.08, $p$ < .01), mastery (slope = -.19, $p$ < .001), body-related well-being (single item measure; slope = -.04, $p$ = .05), self-compassion (single item measure; slope = -.07, $p$ < .01), and self-criticism (slope = -.11, $p$ < .001) levels decreased over the competitive season (significant negative slope over time; see Table 4.9. below). Finally, intuitive eating (slope .04, $p$ < .01) and compulsive exercise (slope .02, $p$ = .07) levels increased over the competitive season (significant positive slope over time; see Table 4.9. below).

Table 4.8. *Study 2: Summary of Within Timepoints Hierarchical Regression Analyses, Unique Variance Accounted for by Self-compassion Beyond Self-criticism (ΔR²)*

| Measure | T1 | T2 | T3 | T4 | T5 | T6 | T7 | T8 | T9 | T10 | T11 | T12 | T13 | T14 | T15 | T16 | T17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | S | S | P | S | D | D | D | D | D | D | D | S | P | S | S | P |
| Evaluation | .04 | .00 | .01 | .10* | .00 | | | | | | | | .01 | .00 | .00 | .05 | .00 |
| Outcome | .01 | .00 | .02 | .08* | .00 | | | | | | | | .12* | .01 | .02 | .02 | .04 |
| Expectation | .04^ | .00 | .00 | .02 | .00 | | | | | | | | .08^ | .01 | .02 | .00 | .03 |
| Preparedness | .03 | .01 | .03 | .01 | .00 | | | | | | | | .11* | .05 | .04 | .00 | .00 |
| Rest & Recovery | | | | | | .04 | .09^ | .07 | .00 | .10^ | .01 | .01 | | | | | |
| Training | | | | | | .04 | .00 | .03 | .22** | .21** | .23* | .23* | | | | | |
| Competition | | | | | | a. | a. | .07 | .68^ | a. | .06 | .11 | | | | | |
| SPPS | .04* | | | .24** | | | | | | | | | | .04^ | | | .13** |
| A&R | .03^ | | | .09** | | | | | | | | | | .04^ | | | .03 |
| Mastery | .00 | | | .04* | | | | | | | | | | .05^ | | | .05^ |
| Meaning | .03^ | | | .03^ | | | | | | | | | | .01 | | | .00 |
| Vitality | .03^ | | | .15** | | | | | | | | | | .05^ | | | .20** |
| BAS | .11** | | | .15** | | | | | | | | | | .14** | | | .25** |
| EWB | | | | | | .22** | .25** | .17** | .25** | .24** | .09* | .18** | | | | | |
| IES-2 | .09** | | | .20** | | | | | | | | | | .16** | | | .25** |
| BRWB | | | | | | .29** | .53** | .48** | .67** | .49** | .34** | .48** | | | | | |
| CET-AV | | .03 | .00 | | .01 | | | | | | | | .01 | | .01 | .00 | |

*Note.* Within time-point ΔR² are reported in this table for the unique contributions of self-compassion beyond self-criticism in all measures.
^ = $p < .1$. * = $p < .05$. ** = $p < .01$. All analyses were one-tailed. a. = unable to compute because one variable is constant.
Primary Level Measures (P): Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-

AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version.  Secondary Level Measures (S): Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.  Daily Burst Measures (D): Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Figure 4.6. *Study 2: Mean Trending for Primary Level Measures*



**Mean Trending for Primary Level Measures**
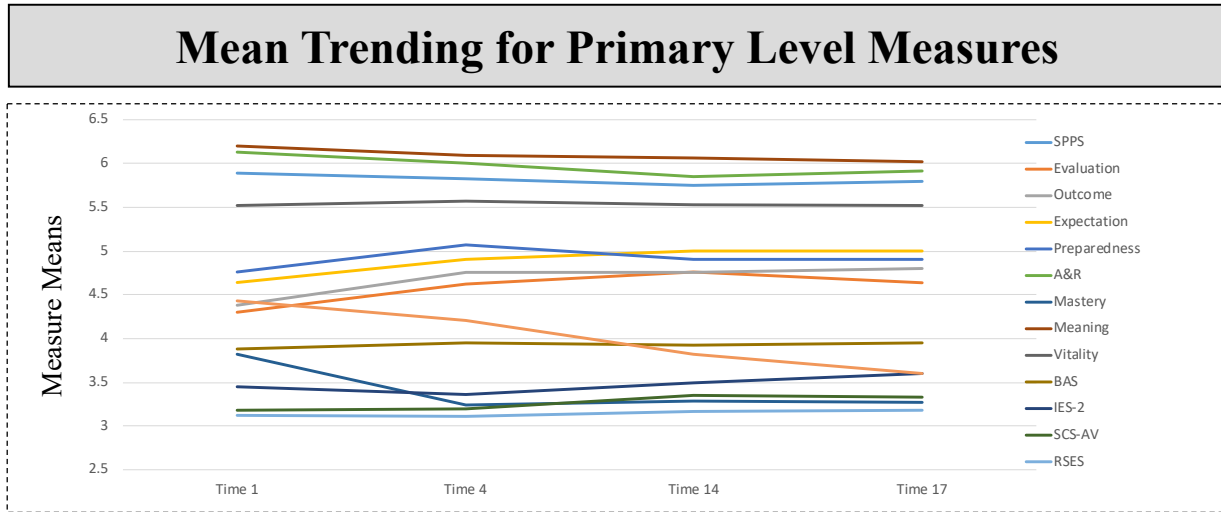
*Note.* Plot of observed means for variables, data collected at the primary measurement level (4 timepoints). Primary Level Measures: Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version.

Figure 4.7. *Study 2: Mean Trending for Secondary Level Measures*



**Mean Trending for Secondary Level Measures**
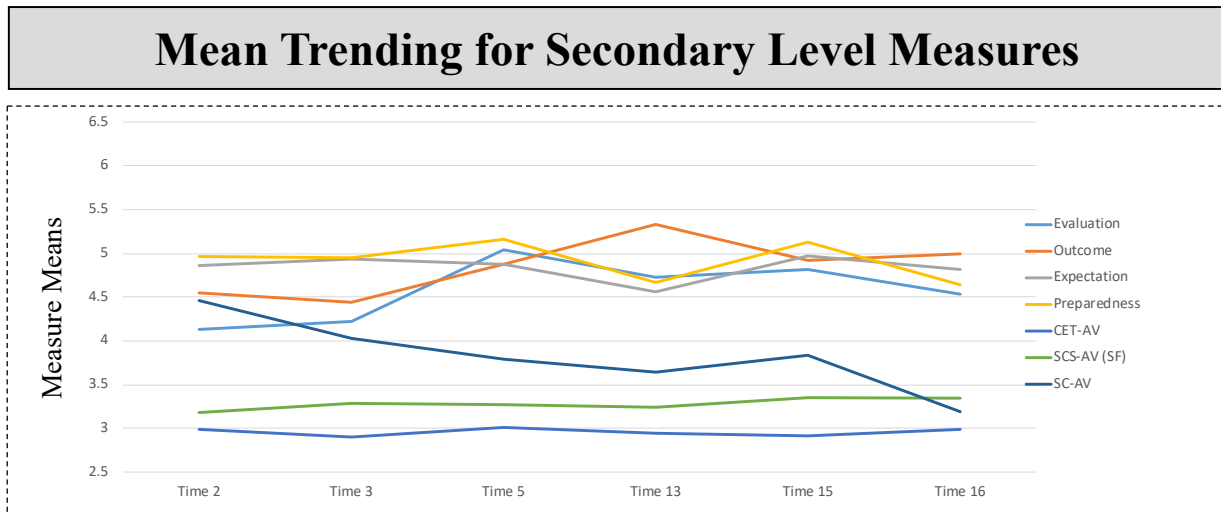
*Note.* Plot of observed means for variables, data collected at the secondary measurement level (6 timepoints). Secondary Level Measures: Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Figure 4.8. *Study 2: Mean Trending for Daily Burst Measures*



**Mean Trending for Daily Burst Measures**
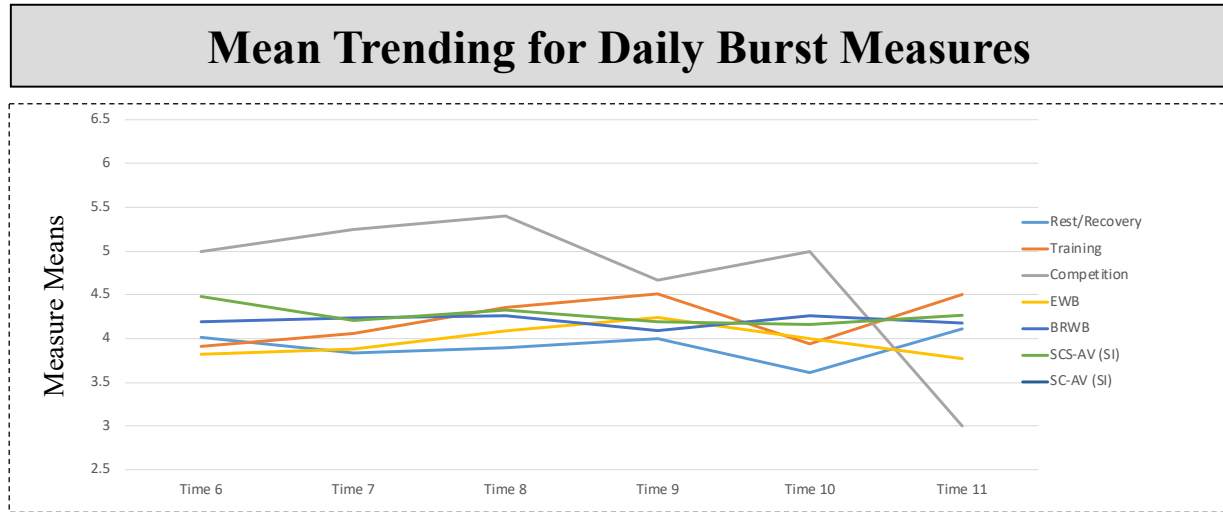
*Note.* Plot of observed means for variables, data collected at the daily measurement burst (7 timepoints).
Daily Burst Measures: Rest/Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table 4.9. *Study 2: Summary of Univariate Latent Growth Models*

| Measure (# of time-points) | $\chi^2$ (df, p) | RMSEA (90% C.I., probability) | CFI (TLI) | Intercept | | Slope | | L with I(p) |
|---|---|---|---|---|---|---|---|---|
| | | | | Mean(p) | Var.(p) | Mean(p) | Var.(p) | |
| Evaluation (10)* | | | | | | | | |
| Outcome (10)* | | | | | | | | |
| Expectation (10) | 137.12 (50,<.001) | 0.13 (.10-.15,<.001) | .65 (.68) | 4.72 (<.001) | 1.37 (<.001) | 0.03 (.22) | 0.04 (<.001) | -0.14 (<.01) |
| Preparedness (10) | 116.59 (50, <.001) | 0.11 (.08-.14,<.001) | .70 (.73) | 4.85 (<.001) | 1.02 (<.001) | 0.01 (.57) | 0.03 (<.01) | -0.07 (.05) |
| Rest & Recovery (7)* | | | | | | | | |
| Training (7)* | | | | | | | | |
| Competition (7)** | | | | | | | | |
| SPPS (4) | 9.47 (5, .09) | .09 (.00-.17, .20) | .98 (.98) | 5.88 (<.001) | .23 (<.001) | **-.06** **(.01)** | .03 (<.001) | .01 (.72) |
| A&R (4) | 7.03 (5, .22) | .06 (.00-.15, .37) | .99 (.99) | 6.12 (<.001) | .35 (<.001) | **-.08** **(.00)** | .04 (<.01) | .02 (.27) |
| Mastery (4) | 134.85 (<.001) | .47 (.40-.54,<.001) | .68 (.62) | 3.66 (<.001) | .33 (<.001) | **-.19** **(<.001)** | <-.01 (.44) | <-.01 (.94) |
| Meaning (4) | 4.66 (5, .46) | .00 (.00-.12, .62) | 1.00 (1.00) | 6.18 (<.001) | .41 (<.001) | -.05 (.15) | .06 (.00) | .03 (.30) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vitality (4) | 8.79 | .08 | .98 | 5.53 | .71 | .02 | .03 | <.01 |
| | (5, .12) | (.00-.16, .24) | (.98) | (<.001) | (<.001) | (.49) | (.05) | (.99) |
| BAS (4) | 6.48 | .05 | .99 | 3.90 | .44 | <.00 | .01 | -.02 |
| | (5, .26) | (.00-.14, .42) | (.99) | (<.001) | (<.001) | (.93) | (.02) | (.28) |
| EWB (SI) (7) | 44.50 | 0.09 | .79 | 4.00 | .64 | -.01 | .03 | -0.04 |
| | (23, .01) | (.05-.13, 0.06) | (.80) | (<.001) | (.01) | (.73) | (.12) | (.51) |
| IES-2 (6) | 26.36 | .19 | .93 | 3.40 | .16 | **.04** | <.01 | <.01 |
| | (5,<.001) | (.12-.26, <.01) | (.91) | (<.001) | (<.001) | **(<.01)** | (.60) | (.73) |
| BRWB (SI) (7) | 38.45 | 0.08 | .92 | 4.23 | .91 | **-.04** | .01 | -0.03 |
| | (23, .02) | (.03-.12, .16) | (.93) | (<.001) | (<.001) | **(.05)** | (.12) | (.47) |
| CET-AV (6) | 21.51 | .05 | .99 | 2.93 | .50 | **.02** | .01 | .01 |
| | (16, .16) | (.00-.11, .42) | (.99) | (<.001) | (<.001) | **(.07)** | (<.001) | (.40) |
| SCS-AV (4) | 12.27 | .11 | .98 | 3.19 | .42 | .02 | .02 | <.01 |
| | (5, .03) | (.03-.19, .09) | (.98) | (<.001) | (<.001) | (.23) | (<.01) | (.92) |
| SCS-AV (SF) (6) | 31.47 | .09 | .98 | 3.21 | .47 | .02 | .01 | <-.01 |
| | (16, .01) | (.04-.14, .08) | (.98) | (<.001) | (<.001) | (.10) | (<.001) | (.56) |
| SCS-AV (SI) (7) | 33.85 | 0.06 | .93 | 4.37 | 0.47 | **-.07** | <.01 | .02 |
| | (23, .07) | (.00-.11, 0.30) | (.94) | (<.001) | (<.001) | **(<.01)** | (.64) | (.36) |
| RSES (4) | 1.08 | 0.00 | 1.00 | 3.12 | 0.13 | .01 | <.01 | <-.01 |
| | (5, .98) | (.00-.00, .98) | (1.02) | (<.001) | (<.001) | (.37) | (.16) | (.69) |
| SC-AV (10) | 102.14 | 0.09 | .91 | 4.41 | 3.11 | **-.11** | 0.03 | -0.12 |
| | (50,<.001) | (.07-.12,<.01) | (.92) | (<.001) | (<.001) | **(<.001)** | (<.01) | (.02) |
| SC-AV (SI) (7) | 19.48 | 0.00 | 1.00 | 2.31 | 0.89 | 0.02 | 0.02 | -.03 |
| | (23, .67) | (.00-.06, .90) | (1.02) | (<.001) | (<.001) | (.51) | (.01) | (.42) |

*Note.* Unstandardized results reported. Bold values within the table represent statistically significant slopes.
*= NO CONVERGENCE, below minimum coverage value (set at .01).
**= NO CONVERGENCE, due to variables with no variance (low n).
Primary Level Measures: Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version. Secondary Level Measures: Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version. Daily Burst Measures: Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.
RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TFI = Tucker Lewis Index

### 4.4.4.5 Hypothesis 5

The fifth hypothesis tested was that there would be multivariate relationships between women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being across timepoints. The original plan to address Hypothesis 5 was to start with key variables from the overall dissertation program (i.e., self-compassion, sport performance perceptions, and self-criticism) and then test more complex models in stages (i.e., incrementally add additional performance measures, measures of eudaimonic well-being, and body related-wellbeing). However, typically, univariate models that do not converge are never included in multivariate models and variables that are stable over time are typically not included in multivariate models (e.g., Byrne, 2012; Geiser, 2013; Heck & Thomas, 2015; Little, 2013). Therefore, due to the results of Hypothesis 4 (i.e., a number of variables did not converge [evaluation, outcome, rest & recovery, training, and competition] or were stable – not a significant slope – over the competitive season [expectation, preparedness, meaning, vitality, BAS, IES-2, BRWB, SCS-AV, SCS-AV (SF), RSES, and SC-AV(SI)]), it was essential to adopt a more exploratory approach for testing Hypothesis 5. The following results presented below describe the modified analysis process of addressing Hypothesis 5, the models run, and the corresponding model results.

The first model was run for self-compassion (SCS-AV), self-criticism (SC-AV), and sport performance perceptions (SPPS) across the four timepoints of the primary level. While the model analysis terminated normally the output was accompanied with the following warning: "the latent variable covariance matrix (PSI) is not positive definite", which indicates that a negative variance/residual variance, a correlation of greater than 1.00, or that a linear dependency might be present between variables modelled (Muthén & Muthén, 2017). The output was reviewed and contained no negative variances or residual variances and no correlations greater than 1.00, indicating that a linear dependence is present in the three-variable model.[11] As a potential linear dependency[12] was identified between the three variables (i.e.,

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[11] In addition, the single variable LGMs were reviewed to confirm no errors or non-linear trends were present, which could be the potential cause or source of the linear dependency.

[12] Linear dependence is defined as "the sum of the measure of linear feedback from the first series to the second, linear feedback from the second to the first, and zero only when feedback (causality) of the relevant type is absent." (Geweke, 1982, pg. 304). This definition highlights that the variables are directly linked with neither variable being the "cause" of the link. Linear dependence is comparable to singularities (perfectly correlated variables). Linear dependence is problematic as it is an indication of violations of the assumptions of Latent Growth Models.

SCS-AV, SPPS, and SC-AV), this model was not sufficient to address Hypothesis 5 and the model results could not be adequately interpreted and multivariate relationships between variables could not be determined.

Following the initial three-variable longitudinal model that could not be interpreted, due to a likely linear dependency, three separate two-variable models were run to assess if the linear dependency persisted within the simpler models. These models also were applied to try and see the relationships between bivariate models over time (i.e., interactions), attempting to gain insight regarding the original Hypothesis 5. The second model was run with only self-compassion (SCS-AV) and self-criticism (SC-AV) across the four timepoints of the primary level. It was anticipated, based on Hypothesis 4 results, that there would be an interaction between SCS-AV and SC-AV scores over time (e.g., that if self-criticism decreased it would be significantly different change than self-compassion which remained stable over time). This two-variable model terminated normally without warnings and the results indicate that the slope of self-compassion (SCS-AV) and the slope of self-criticism (SC-AV) did not change differently from one another over time at the primary level (S2 WITH S1, $p = .164$; see Table 4.10. and Table 4.11.). The model fit was strong for this two-variable model (CFI = .95; TLI = .94). This result suggests that while at the univariate level self-compassion did not change and self-criticism did change at the primary measurement level over the course of the sport season their slopes were not significantly different from one another over time (i.e., no interaction between the two variables over time).

Table 4.10. *Study 2: Model Fit Results for the Multivariate Latent Growth Model for Self-compassion and Self-criticism*

| Model Fit Results | |
|---|---|
| Chi-Square Test of Model Fit | |
| Value | 41.60* |
| Degrees of freedom | 22 |
| *p*-value | 0.01 |
| Scaling Correction Factor for MLR | 1.05 |
| CFI | .95 |
| TLI | .94 |
| RMSEA | |
| Estimate | .09 |
| 90 percent confidence interval | 0.04 – 0.13 |
| Probability RMSEA <=.05 | 0.07 |
| SRMR | 0.05 |

*Note.* * = The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TFI = Tucker Lewis Index; SRMR = Standardized Root Mean Residual.

Table 4.11. *Study 2: Model Results for the Multivariate Latent Growth Model for Self-compassion and Self-criticism*

| | Unstandardized Model Results | | | |
|---|---|---|---|---|
| | Estimate | Standard Error (*SE*) | Estimate/ *SE* | *p*-Value |
| I2 (SC-AV) **WITH** I1 (SCS-AV) | -0.91 | 0.13 | -7.21 | 0.000 |
| S2 (SC-AV) **WITH** S1 (SCS-AV) | -0.02 | 0.01 | -1.39 | 0.164 |
| **Means** | | | | |
| Intercept 1 (SCS-AV) | 3.19 | 0.06 | 51.50 | 0.000 |
| Slope 1 (SCS-AV) | 0.02 | 0.09 | 1.09 | 0.277 |
| Intercept 2 (SC-AV) | 4.43 | 0.18 | 24.88 | 0.000 |
| Slope 2 (SC-AV) | -0.22 | 0.07 | -2.96 | 0.003 |
| **Variances** | | | | |
| Intercept 1 (SCS-AV) | 0.42 | 0.06 | 7.38 | 0.000 |
| Slope 1 (SCS-AV) | 0.02 | 0.01 | 2.13 | 0.033 |
| Intercept 2 (SC-AV) | 2.74 | 0.58 | 4.70 | 0.000 |
| Slope 2 (SC-AV) | 0.06 | 0.14 | 0.46 | 0.646 |
| **Residual Variances** | | | | |
| SCS-AV 1 | 0.05 | 0.02 | 2.70 | 0.007 |
| SCS-AV 2 | 0.07 | 0.01 | 5.04 | 0.000 |
| SCS-AV 3 | 0.06 | 0.02 | 2.86 | 0.004 |
| SCS-AV 4 | 0.04 | 0.03 | 1.26 | 0.208 |
| SC-AV 1 | 1.24 | 0.52 | 2.39 | 0.017 |
| SC-AV 2 | 2.67 | 0.57 | 4.68 | 0.000 |
| SC-AV 3 | 1.95 | 0.46 | 4.29 | 0.000 |
| SC-AV 4 | 2.64 | 0.82 | 3.21 | 0.001 |

*Note*. SCS-AV = Self-Compassion Scale – Athlete Version, SC-AV = Self-Criticism – Athlete Version.

A third model was then run that included only self-compassion (SCS-AV) and sport performance perceptions (SPPS) across the four timepoints of the primary level. It was anticipated, based on Hypothesis 4 results, that there would not be an interaction between SCS-AV and SPPS scores over time (e.g., that if self-compassion increased so would sport performance perceptions). This two-variable model terminated normally without warnings and indicates that the slope of self-compassion (SCS-AV) and sport performance perceptions (SPPS) changed significantly different over time at the primary level (S2 WITH S1, $p$ = .016; see Table 4.12. and Table 4.13.). The model fit was strong for this two-variable model (CFI = .97; TLI = .96). This result suggests that while at the univariate level self-compassion did not change and sport performance perceptions did change at the primary measurement level over the course of the sport season the variable slopes were significantly different from one another over time (i.e., there was an interaction between the two variables over time).

Table 4.12. *Study 2: Model Fit Results for the Multivariate Latent Growth Model for Self-compassion and Sport Performance Perceptions*

| Model Fit Results | |
| --- | --- |
| Chi-Square Test of Model Fit | |
| Value | 35.57* |
| Degrees of freedom | 22 |
| *p*-value | 0.03 |
| Scaling Correction Factor for MLR | 0.95 |
| CFI | 0.97 |
| TLI | 0.96 |
| RMSEA | |
| Estimate | 0.07 |
| 90 percent confidence interval | 0.02 – 0.11 |
| Probability RMSEA <=.05 | 0.19 |
| SRMR | 0.11 |

*Note.* * = The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TFI = Tucker Lewis Index; SRMR = Standardized Root Mean Residual.

Table 4.13. *Study 2: Model Results for the Multivariate Latent Growth Model for Self-compassion and Sport Performance Perceptions*

| | Unstandardized Model Results | | | |
|---|---|---|---|---|
| | Estimate | Standard Error (*SE*) | Estimate/ *SE* | *p*-Value |
| I2 (SCS-AV) **WITH** I1 (SPPS) | 0.09 | 0.03 | 2.82 | 0.01 |
| S2 (SCS-AV) **WITH** S1 (SPPS) | 0.01 | 0.00 | 2.41 | 0.02 |
| **Means** | | | | |
| Intercept 1 (SPPS) | 5.88 | 0.05 | 117.19 | 0.00 |
| Slope 1 (SPPS) | -0.06 | 0.02 | -2.33 | 0.02 |
| Intercept 2 (SCS-AV) | 3.19 | 0.06 | 51.43 | 0.00 |
| Slope 2 (SCS-AV) | 0.02 | 0.02 | 1.17 | 0.99 |
| **Variances** | | | | |
| Intercept 1 (SPPS) | 0.23 | 0.05 | 5.01 | 0.00 |
| Slope 1 (SPPS) | 0.03 | 0.02 | 1.96 | 0.05 |
| Intercept 2 (SCS-AV) | 0.42 | 0.06 | 7.38 | 0.00 |
| Slope 2 (SCS-AV) | 0.02 | 0.01 | 1.98 | 0.05 |
| **Residual Variances** | | | | |
| SPPS 1 | 0.08 | 0.04 | 2.40 | 0.02 |
| SPPS 2 | 0.06 | 0.02 | 3.65 | 0.00 |
| SPPS 3 | 0.05 | 0.02 | 2.76 | 0.01 |
| SPPS 4 | 0.08 | 0.07 | 1.15 | 0.25 |
| SCS-AV 1 | 0.06 | 0.02 | 3.01 | 0.00 |
| SCS-AV 2 | 0.06 | 0.01 | 4.73 | 0.00 |
| SCS-AV 3 | 0.06 | 0.02 | 2.68 | 0.01 |
| SCS-AV 4 | 0.05 | 0.04 | 1.43 | 0.15 |

*Note*. SPPS = Sport Performance Perceptions Scale; SCS-AV = Self-Compassion Scale – Athlete Version.

Finally, a fourth model was run that included only self-criticism (SC-AV) and sport performance perceptions (SPPS) across the four timepoints of the primary level. The two-variable model for sport performance perceptions (SPPS) and self-criticism (SC-AV) terminated normally, with the following warning: "the latent variable covariance matrix (PSI) is not positive definite". The output was investigated, and no variances or residual variances were negative nor were any correlations greater than 1.00, highlighting that self-criticism (SC-AV) and sport performance perceptions (SPPS) are potentially linearly dependent over time at the primary level and therefore the model cannot be interpreted.

Due to the challenges faced while attempting to examine Hypothesis 5 it remains unknown if there are relationships between women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being across timepoints. However, a potential linear dependency has been identified within Hypothesis 5 when the variables of self-compassion, self-criticism, and sport performance are considered together. Further, it has been identified that self-compassion and self-criticism did not change differently over time and that self-compassion and sport performance perceptions changed differently over time for the women athletes.

### 4.5 Discussion

The goal of this study was to explore and examine women athletes' self-compassion, performance perceptions, and well-being over the competitive season. Past qualitative research has described that some women athletes are hesitant to adopt a self-compassionate perspective in sport because they believe self-compassion could lead to complacency and hinder sport goals (Ferguson et al., 2014; Sutherland et al., 2014). Further, these athletes described that self-criticism was necessary to achieve their goals and thrive in sport (Ferguson et al., 2014; Sutherland et al., 2014). However, a recent quantitative study found self-compassion to be related to sport performance perceptions while self-criticism was not related to, or negatively related to performance perceptions (Killham et al., 2018; Study 1). This same study also reported that self-compassion contributed unique variance beyond self-criticism in women athletes' sport performance perceptions (Killham et al., 2018; Study 1). An additional study also identified subjective performance appraisals as related to self-compassion for competitive swimmers (Barczak & Eklund, 2018). The current study replicated and greatly expanded on

findings by Killham and colleagues (2018) and Barczak and Eklund (2018), as self-compassion was related to, and contributed unique variance beyond self-criticism on, higher sport performance perceptions at several timepoints across athletes' competitive season.

Specifically, within this study self-compassion was related to, and contributed beyond self-criticism on, sport performance perceptions and performance expectations, preparedness, evaluation, and outcome ratings at varying times across the regular season. These results expand on previous findings (Killham et al., 2018; Study 1) and advance research through the identification of the relationship between self-compassion with multiple measures of sport performance perceptions that together better reflect the multidimensional structure of sport performance. In contrast to what has been suggested in past qualitative research (Ferguson et al., 2014; Sutherland et al., 2014), self-criticism was negatively related to women athletes' sport performance perceptions. Previous research provides insight as to why self-criticism could be negatively related to sport performance perceptions. Self-criticism is associated with perfectionism and self-conscious emotions such as shame (e.g., Gilbert & Procter, 2006; Powers et al., 2004), which in turn could contribute to perceived inadequacy and personal failure regarding perceived sport performance. However, it is yet unknown how and why self-criticism, perfectionism, and self-conscious emotions might impact sport performance perceptions.

Self-compassion has been proposed as a valuable resource or tool for women athletes during challenging sport experiences because it is negatively related to aspects of athletes' well-being, such as social physique anxiety and self-criticism, while also fostering an appreciation for one's physical body and eudaimonic well-being (Berry et al., 2010; Epli Koc & Ermis, 2016; Ferguson et al., 2015; Killham, 2014; Killham et al., 2018; Magnus et al., 2010; Mosewich et al., 2013). Similar to these past findings, within this study, self-compassion was positively related to, and contributed unique variance beyond self-criticism on, aspects of eudaimonic and body-related well-being across the competitive season. Further, self-criticism was negatively related to aspects of eudaimonic and body-related well-being across the competitive season. These findings align with conceptual propositions, which suggest that self-compassion would promote well-being while self-criticism would thwart well-being (e.g., Neff, 2003a, 2003b).

There has been speculation regarding the stability of self-compassion over time. For example, self-compassion might fluctuate naturally within sport for many reasons including, but not limited to, winning, losing, injury, intrateam competition, or having a change in coach or

team staff. However, self-compassion might also remain stable in sport if it is trait-like than state-like. Within this study over the competitive season self-compassion levels remain stable at both the primary and secondary measurement levels over the competitive season. However, self-compassion levels decreased during the mid-season daily measurement burst. These results highlight that regardless of competitive season timing, self-compassion levels may fluctuate day-to-day, but over time their self-compassion levels remain stable without intervention. There are a variety of possible reasons why self-compassion could be stable over time without intervention or training, but further examination will be required. For example, it is possible that self-compassion is more trait-like, it is possible that the measure targets more enduring individual attributes or qualities, but it is also possible that athletes do not understand the potential benefit of self-compassion and therefore do not adopt self-compassion by choice and instead adopt self-criticism due to the perceived value noted in qualitative studies (Ferguson et al., 2014; Sutherland et al., 2014). Yet based on the current study it remains unknown specifically why self-compassion was stable over the competitive season. Further, there is limited understanding of how self-compassion interventions impact women athletes (i.e., Mosewich et al., 2013) and further exploration is required to identify why self-compassion is stable in sport contexts and how self-compassion interventions actually change women athletes' self-compassion levels.

In addition to self-compassion, prospective sport performance perceptions (expectations and preparedness) were stable across the competitive season. However, global sport performance perceptions decreased across the competitive season. It is problematic that women's performance expectations do not change over the season but that their global performance perceptions decrease over the season. Compounding the challenge with decreasing performance perceptions and stable performance expectations the women athletes' autonomy, relatedness, and competency scores also decreased. In combination these findings suggest that over the competitive season athletes may become less independent, less connected, and less competent and their overall sport performance perceptions go down, the expectations they hold for themselves do not change. This dissonance is a potential source of athlete suffering and draws attention to a source of potentially unrealistic expectations. Unfortunately, unrealistic expectations are often a source of psychopathologies regarding perfectionism, body dissatisfaction, eating psychopathologies, and compulsive exercise (Gordon & LeBoff, 2015), and are therefore a major challenge that women athletes face in sport.

Within the current study body-related well-being was explored over the competitive season. The results of this study highlight counter-intuitive findings regarding the women athletes' body-related well-being. Specifically, the athletes' body appreciation remained stable, yet their intuitive eating and compulsive exercise levels increased while body-related well-being decreased during the daily measurement burst. While an increase in intuitive eating alone can be seen as positive, athletes have also identified challenges with intuitive eating in sport contexts (Killham, 2014). Together the changes in the women's body, eating, and exercise attitudes and behaviour variables suggest that over the competitive season women athletes become more focused on or aware of their eating and exercise attitudes and behaviours. While it is possible that due to completing the research surveys athletes became more aware of their eating, body, and exercise attitudes which then led to the changes in scores, it is also likely that the changes were due to individual differences within their sport contexts as the data was being collected.

Within the context of this study this counter-intuitive finding could highlight that risk for the components of the Female Athlete Triad (the Triad), or sub-clinical pathologies related to the Triad change over the competitive season (e.g., energy deficits, such as chronic injury and menstrual dysfunction). The Triad is a well-documented phenomenon in women athletes' consisting of three components: menstrual dysfunction, low energy availability, and low bone mineral density (De Souza et al., 2014; Gordon & LeBoff, 2015; Nattiv et al., 2007; Nazem & Ackerman, 2012). Low energy availability is particularly problematic for women athletes as they have higher daily caloric needs as a result of their sport training and competition (Gordon & LeBoff, 2015). Within the current study the interaction between body image, eating, exercise, and well-being highlights potential risk regarding aspects of the Triad. This conclusion is further supported as it is conceptually unlikely to see "true" intuitive eating increase in correspondence with the observed increases in compulsive exercise and observed decreases in body related well-being (e.g., Avalos & Tylka, 2006; Tylka, 2006; Tylka & Kroon Van Diest, 2013), which further highlights that intuitive eating might have domain specific attributes in sport (Killham, 2014). In addition to self-criticism and harsh evaluations, the Triad has been identified as a challenge for women athletes' physical and psychosocial well-being. Unfortunately, eating, body, and exercise psychopathologies can present at a range of levels for individual athletes and factors related to the Triad can go unnoticed or unmanaged (Gordon & LeBoff, 2015). Moreover, while this research was not diagnostic, the results help to identify the importance of approaching the

study of the Triad holistically to gain further insight into how adaptive and maladaptive psychosocial and physiological factors in sport might contribute to the Triad and related pathologies.

### 4.5.1 How self-compassion, performance perceptions, and well-being covary

Although substantial steps have been made in understanding the role of self-compassion in women athletes sport performance perceptions and well-being, it remains unknown how the variables change, interact, or covary over time. Specifically, Hypothesis 5 could not be fully addressed due to potential linear dependency between variables within the most basic and originally proposed model. This was an unexpected challenge and thus warrants explicit commentary on the feasibility and lessons learned to help prevent this challenge in the future.

It is possible that the models could not be interpreted due to small sample size, therefore a simple solution may be an increased sample size. However, solutions to complex problems are often multifaceted. Moving forward with the intent to continue to explore Hypothesis 5, that there would be multivariate relationships between self-compassion, sport performance perceptions, and well-being overtime, two advanced courses of action are suggested to help prevent MLM results that cannot be interpreted: further development of the SPPS and identify statistical programs that can account for highlight correlated variables within models. First, as a preliminary step it will be important to further refine the SPPS. This measure was developed as part of this research program and initial psychometric assessments (SEM's) and reliability (Cronbach's alpha) support that the measure is multidimensional. However, much remains unknown about the SPPS, such as: factor structure, reliability over time and between samples, and content, construct, and criterion validity, for athletes across all levels of competition, which have not yet been examined. Moreover, ceiling effects were observed for the SPPS, which could have also contributed to the observed linear dependency between sport performance perceptions and self-criticism as well as reduced variability in athlete responses. Further, a critical assessment of all SPPS items for content, clarity, and contributions to scale scores should be conducted to refine and potentially restructure measure items to emphasize the most central aspects of sport performance perceptions. Increasing the response variance and measure specificity could potentially manage the ceiling effects within a sample and allow for MLM analyses to run successfully and test the research hypotheses (e.g., Byrne, 2012; Furr & Bacharach, 2014; Little, 2013; Muthén, & Muthén, 2017).

The second course of action that should be considered prior to re-attempting to answer these longitudinal questions is to potentially identify other statistical programs that might be better suited to model highly correlated variables. Following this research, we now know that there are strong relationships between self-compassion, sport performance, and well-being variables. It is important to consider highly correlated variables because within M*plus* linear independence is an assumption for LGM and MLM analyses (Muthén, & Muthén, 2017). Therefore, LGM and MLM analyses conducted within M*plus* might not be the best suited approach to addressing hypotheses related to determining if self-compassion, sport performance perceptions, and well-being are related and covary over time.

**4.5.2 Strengths**

There are five focal strengths of the current study. The first strength was the longitudinal approach to examining self-compassion and sport performance. Through the application of a multilevel/burst longitudinal design it was possible to begin assessing the stability of study variables over time and account for potential variations resulting from the progression of the competitive season. This represents a substantial descriptive contribution to the literature regarding the stability of self-compassion, sport performance, and well-being over time in sport contexts. The second strength of this study, related to the first, was that the timing of the multiple data collection points accounted for the regular competitive season. Spreading the questionnaire distributions across the competitive season allowed for comparison of athletes within each timepoint (e.g., all athletes completed the daily burst at the 50% complete point of their competitive season). The third strength was that multiple measures of the same constructs were used, which helps to minimize learning effects (e.g., Furr & Bacharach, 2014). Learning effects are important to manage in longitudinal studies to promote authentic participant responses. However, it is also important to note that multiple measures of the same construct (i.e., self-compassion) can also be challenging because some measures have subscales while others do not, and this can be problematic when conducting analyses. Due to this potential challenge multiple timepoints for each measure were collected so that an assessment between and within the three measures of self-compassion could be completed. Recognizing that sport contexts are unique; the fourth strength of this study was that athlete versions of various measures were adopted (e.g., SCS-AV, CET-AV, SC-AV). Finally, the fifth strength of this study was the development of a sport performance measure and the refinement of the prospective

and retrospective performance items.  As the SPPS is a multidimensional measure of sport performance perceptions that is aligned with previously used unidimensional measures (i.e. the GPAI) and community conceptualizations of sport performance (i.e., the Long Term Athlete Development model), and applies specific terminology to clarify and increase accuracy and precision when describing sport performance perceptions (globally and specifically related to athletes' prospective and retrospective performance ratings).

### 4.5.3 Limitations

The primary limitation of the current study was that the final sample size ($N = 120$) fell below the target number ($N = 200$) and below recommended guidelines for Hypotheses 4 (LGM) and 5 (MLM) analyses.  Specifically, even though the analyses were completed and are reported, the results related to Hypotheses 4 and 5 should be considered exploratory.  To manage this limitation in the future a broader recruitment strategy could be applied to allow for women athletes from a broader geographical area to participate.  Further, because it is important to assess athletes over time it will be important for future studies to continue working toward balancing the need for data with participant burden, striking a better balance might help with participant retention and lead to larger final sample sizes.

A second study limitation is related to participant burden and drop-out.  During the design phase of this research participant burden was underestimated.  Specifically, it was estimated that it would take athletes roughly four hours to complete the 17 timepoints.  This estimate was based on a brief pilot test for the primary, secondary, and daily packages with faculty and graduate students in the Sport Health and Exercise Psychology Lab and with women athletes who were not eligible to participate due to lack of competition in the past 12 months, being currently pregnant, or competing at a recreational level.  However, many athletes with complete data took at least twice as many hours to complete the study.[13]  After reviewing the full data set it became apparent that many athletes deselected or became unresponsive early on in their sport season.  A total of 248 women were sent the Time 1 survey and only 179 completed the Time 1 survey, representing nearly 28% dropout after just the first timepoint.  Further, the final sample of 120 women is only 48% of the original 248 that were sent the first survey.  It is

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[13] Participants completed the study online, which makes it difficult to know if survey completion times are accurate because it is possible that the survey could have been opened in a tab and "active" even though the athlete was not answering questions.

possible that other factors, in addition to burnout and burden, contributed to participant drop-out such as increased training load, loss of interest, putting school or work or family first, and other life circumstances, but it is likely that drop-out was at least partially due to high participant burden.[14]  Moving forward it will be essential to more accurately estimate and reduce participant burden, when possible, to prevent drop-out and to compensate athletes accordingly.

The third limitation of this study was measurement invariance, which is an assessment of psychometric properties that highlight the equivalence of a construct across independent groups or over time for individuals (Putnick & Bornstien, 2016; Van De Schoot, Schmidt, De Beuckelaer, Lek, & Zondervan-Zwijnenburg, 2015).  Measurement invariance – the assumption that a measure is conceptually and psychometrically equivalent across timepoints – was not directly evaluated within the current study.  Measurement invariance can be assessed in a variety of ways including item-response theory frameworks, structural equation modelling, or an integration of the two approaches (Putnick & Bornstien, 2016).  Within this study we did conduct indirect assessments of invariance through the LGM analyses (based in SEM) and found that many variables were stable over time (suggesting invariance).  However, the variables that did change over time require further assessment of measurement invariance to make any direct or indirect conclusions regarding conceptual and psychometric equivalence between timepoints.  However, the lack of direct assessments of invariance is a study limitation as a direct assessment would strengthen the study conclusions about the stability/variability of constructs over the competitive season.

A fourth limitation of this study was that many scale scores for study variables had consistently small standard deviations across timepoints (see Table 4.6; e.g., sport performance perceptions, measures of eudaimonic well-being, measures of body-related well-being, measures of self-compassion, and self-criticism).  Small observed variances and many violations for kurtosis highlight that the measures could be increased in sensitivity to capture more precise

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[14]  While participant burden was a likely source of drop-out this could not be confirmed through participant follow-up.  The participants were not contacted regarding why they dropped out or stopped participating in the study as the informed consent form clearly states that participants can withdraw without cause or penalty.  Further, I referred to the University of Saskatchewan behavioural ethics research board and the TCPS2 (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council , 2018) to clarify if contacting participants regarding drop-out would be appropriate and came to the conclusion that contacting individuals would not be recommended as this would put undue external pressure on athletes regarding participation and may lead to unintended consequences of withdrawing (Truscott & Crook, 2013).  Therefore, I chose to respect the autonomy and privacy of the women and did not follow-up with them.

individual differences. Measuring individual differences precisely is important to increase the accuracy of research conclusions. A potential solution may be to increase scale response ranges from a 5-point (e.g., SCS-AV) or 7-point (e.g., SPPS) scale to and 10-point scale (e.g., SC-AV). (the linear dependency was observed between the SPPS and SC-AV). Ideally, all measures in research would have the same response range so that variance between measures could be directly compared and assessed. Increasing the response range of scale items could promote a normal distribution of responses and allow for increased variance between individuals.

### 4.5.4 Future Directions

There are three primary future directions arising from the current study. First, a similar study should be conducted and apply a wider recruitment and sampling approach to re-examine self-compassion, sport performance perceptions, and well-being with a larger sample of women athletes. Athletes from aesthetic sport should also be actively recruited to promote representation across sport types. With a larger and more representative sample the analysis and results would be generalizable and the complex data analyses proposed (i.e., MLM analyses) would reach adequate power and be more likely for the models to converge (Heck & Thomas, 2015; Muthén, & Muthén, 2017). Further, when planning to conduct a similar study again a re-assessment of participant burden and compensation needs to be conducted to help retain athletes in the study. Building on the finding that self-compassion is related sport performance perceptions, the second future research direction would be to directly assess if objective sport performance (i.e., time, distance) is increased by higher pre-competition self-compassion. This future direction would be beneficial in developing a deeper understanding of the role of self-compassion in sport performance beyond athletes' performance perceptions and connect with other areas of sport science research such as skill execution. Finally, the third future direction stemming from the current study is to investigate if a self-compassion intervention, similar to Mosewich et al (2013), can increase athlete's objective performance outcomes (e.g., time or distance) and sport performance perceptions (e.g., more accurate retrospective evaluations similar to Leary et al. [2007]). It will be important to begin connecting self-compassion to objective sport performance outcomes to further highlight the ways in which self-compassion may be beneficial for athletes as they work toward their sport goals and performances. These three directions for future research together would work toward filling a gap in the literature

regarding if self-compassion is related to or how it could be applied in sport contexts to increase athletes' objective sport performance.[15]

### 4.5.5 Implications for Applications

The current study suggests that women athletes' self-compassion is stable over the course of the competitive season, while there is variability from day to day. There are various ways that self-compassion could be applied in the future, however, one of the main implications of self-compassion being stable over time is that mental skills consultants, psychologists, and researchers should work to intervene with or teach self-compassion to athletes during the off or pre-season to maximize the benefit to athletes during the competitive season. However, it is still unknown if women athletes' self-compassion scores return to base line overtime or if they remain elevated following intervention.

### 4.5.6 Conclusions

While there are limitations to the current study, this research represents a substantial step forward in the literature and an initial test of hypotheses. By tracking women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being over a competitive season, this study has propelled the body of literature forward by gaining a much more detailed understanding of the role and stability of self-compassion in sport. Specifically, this study suggests that self-compassion is stable across the regular competitive season and that self-compassion is related to, and contributes to women athletes' sport performance perceptions and well-being beyond self-criticism. Self-compassion might be a valuable resource to promote women athletes' sport performance perceptions and well-being in a range of sport contexts across the regular competitive season.

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[15] When approaching these future directions, it will be important to learn from this study and to intentionally keep participant burden as low as possible while still addressing the research purpose fully.

## 4.6 Bridging Summary

Findings from the multilevel longitudinal approach of Study 2 resulted in several findings that further suggest self-compassion may play a protective and facilitative role in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being over the regular competitive season. While these results contribute to the sport and performance literature there is still limited understanding of *how* and *why* self-compassion plays a role in women athletes' sport performance perceptions and well-being. Therefore, building on findings from Study 1 and 2, Study 3 adopted a qualitative approach to inquiry to explore and explain the role of self-compassion in women athletes' sport performance perceptions and well-being in the context of athlete-identified important competitive events. Further, Study 3 worked to address the gap in the literature as well as add depth through athletes' perspectives and experiences to the overall dissertation research question.

**CHAPTER 5:**

**Study 3: An Exploration of Women Athletes' Self-compassion, Sport Performance Perceptions, and Well-being Around an Athlete-Identified Important Competitive Event**

**Study 3: An Exploration of Women Athletes' Self-compassion, Sport Performance Perceptions, and Well-being Around an Athlete-Identified Important Competitive Event**

**5.1 Abstract**

Some women athletes have expressed hesitation regarding self-compassion in sport, stating that it may lead to complacency while self-criticism helps them reach their potential in sport. Yet, quantitative research has explored the relationships between self-compassion, self-criticism, and women athletes' sport performance perceptions which is counter to resistant perspectives. Two studies highlighted that self-compassion is related to sport performance perceptions while self-criticism is negatively related or unrelated to sport performance perceptions (Killham et al., 2018; Study 1; Study 2). The contrasting findings between quantitative (Killham et al., 2018; Study 1; Study 2) and qualitative research (Eke, et al., 2019; Ferguson et al., 2014; Sutherland et al 2014; Wilson et al., 2019) suggest that the link between self-compassion, sport performance perceptions, and well-being is complex. Further, past research has identified that season timing and perceived importance of competition might impact how athletes perceive their performance (e.g., Crocker, 2015; Weinberg & Gould, 2011), therefore this study was conducted around an athlete-identified important competitive event. This collective case study explored and described in depth women athletes' self-compassion, sport performance perceptions, and well-being. Women athletes ($N = 9$) between 19 and 27 years, currently competing in a variety of sports between the local to elite level, participated in two, one-on-one interviews around their important competition (one interview before and one after). Following data collection, the transcripts were analyzed and the results are represented by a holistic case description, an overarching theme *Continuing to Excel in Sport*, and sub-themes: (a) *Re-framing Criticism* and (b) *A Determined Approach* were generated. The theme *Continuing to Excel in Sport* highlights how the athletes benefit from a self-compassionate perspective during the preparing, competing, and reflecting stages of their important competitive events. Overall, the results highlight that women athletes utilize self-compassion to promote their sport performance perceptions and well-being in a variety of contexts and a variety of ways to excel in sport.

Keywords: self-compassion; self-criticism; sport performance perceptions; collective case study; holistic case description; thematic analysis

## 5.2 Introduction

The first two studies in my dissertation examined the role of self-compassion in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being during the regular competitive season (see Study 1 in Chapter 3 and Study 2 in Chapter 4). Specifically, in Study 1, self-compassion, sport performance perceptions, and self-criticism were assessed around a single regular season competitive event and the results highlighted that self-compassion was related to sport performance perceptions while self-criticism was not. Further, within Study 1 self-compassion contributed beyond self-criticism in women athletes' sport performance perceptions. While in Study 2, self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being were tracked over a full regular competitive season (i.e., measurements evenly distributed from the first to last scheduled regular season competitions). The main findings of Study 2, relevant to the current study, were (a) that self-compassion was related to multiple measures of sport performance perceptions, eudaimonic well-being, and body-related well-being while self-criticism typically was not, (b) that self-compassion contributed beyond self-criticism in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being, and (c) that self-compassion was stable over the competitive season. These two studies have started to establish that self-compassion is relevant to and plays a role in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being during the regular competitive season. Further, the first two studies also show that self-criticism is not related (Killham et al., 2018) or negatively related to women athletes' sport performance perceptions, eudaimonic well-being, and body related well-being (Study 1; Study 2). Further, a recent study described that self-compassion is related to swimmers' performance appraisals and moderates motivation and coping (Barczak & Eklund, 2018). However, the role of self-compassion remains unknown during competitive events that athletes themselves identify as highly relevant or important.

Athlete-identified important competitive events are competitive experiences that typically have more meaning to athletes than a "typical" competition. Sport-related pressures and expectations that arise due to a competition being perceived as important can lead to increased self-criticism, heightened arousal, and stress for athletes (Crocker, 2015; Weinberg & Gould, 2011), as well as reduced objective sport performance (e.g., Jordet, Hartman, Visscher, & Lemmink, 2007). Further, increased self-criticism has been related to reduced sport performance

perceptions within the regular sport season (Study 1; Study 2).  Therefore, based on findings from Study 1 and Study 2 and previous research that has suggested self-compassion as a valuable resource and related to adaptively managing stressful evaluative (e.g., Barczak & Eklund, 2018; Leary et al, 2007; Mosewich, Sabiston, et al., 2019; Reis et al., 2015) and comparative experiences (Eke, Adam, Kowalski, & Ferguson, 2019), it is key to consider the role of self-compassion within the context of athlete-identified important competitive events to gain a deeper understanding of how self-compassion might buffer against the challenges of important competitive events and promote positive sport experiences.

As discussed in Study 1, a limitation was that all regular season competitions were assumed to be of the same importance when this might not have been the case (Killham et al., 2018; Study 1).  It is important to note that there is great possibility that athletes perceive specific competition(s) as important for a variety of individually salient reasons.  Within sport athletes are often focused on objective outcomes such as winning, time, or distance (e.g., Crocker, 2016; Weinberg & Gould, 2011).  However, it is possible that there are additional situations and conditions that might increase the perceived importance of a specific competitive event.  For example, other situations that could increase perceived importance include high pressure situations within competitions (e.g., free throws or penalty kicks), having important spectators (e.g., family members or athletic scouts observing a competition), performance expectations to qualify or continue competing (e.g., meeting specific levels, standards, or winning), attempting to make a new team (e.g., at a higher level of competition), or, athletes might be retiring after a competition.  Therefore, how an athlete perceives a specific competition was relevant to consider in the current study because when an event is considered important the athlete has the potential to experience increased pressure, expectations, and evaluations from others and from themselves (e.g., Crocker, 2016; Weinberg & Gould, 2011).  Self-compassion has been identified as particularly relevant within sport to manage or buffer challenges such as self-criticism (Mosewich et al., 2013), which athletes often face when a competitive event is perceived as important.

Self-compassion is a kind, caring, and connected self-attitude, where positive self-attitudes are not based on social comparison (Neff, 2003a, 2003b).  In addition to helping women athletes during challenging or difficult times in sport (Ferguson et al, 2014; Ferguson et al., 2015; Mosewich et al., 2011; Mosewich et al., 2013; Reis et al., 2015; Sutherland et al., 2014),

108

researchers have also connected self-compassion with well-being and positive sport experiences (Eke et al., 2019; Ferguson et al., 2014; Ferguson et al., 2015; Killham, 2014; Study 2). Within the contexts of athlete-identified important competitive events, self-compassion might play a role in athletes' management of self-criticism (similar to Mosewich et al., 2013), the promotion of accurate sport performance perceptions (including expectations and evaluations; similar to Leary et al., 2007), and to help athletes work toward eudaimonic and body-related well-being without compromising their sport experiences and goals (similar to Eke et al., 2019; Ferguson et al., 2014; Killham, 2014; and Study 2).

### 5.2.1 Statement of the Problem

Counter to previous qualitative research suggesting that some women athletes resist self-compassion and lean on self-criticism for sport performance reasons (Ferguson et al., 2015; Sutherland et al., 2014), the first two studies of my program and a recent study clearly highlight that self-compassion *is* related to sport performance perceptions (Barczak & Eklund, 2018; Killham et al., 2018; Study 1; Study 2). However, self-compassion might or might not be related to sport performance perceptions for a variety of reasons, and research results highlight that the relationship is likely complex (e.g., Ferguson et al., 2015; Sutherland et al., 2014; Wilson et al., 2018). Therefore, it is essential to explore and describe the role of self-compassion in sport performance perceptions from the individual perspective of women athletes to address the tension and discrepancy in research findings and to further explore the role of self-compassion in sport performance perceptions and well-being.

### 5.2.2 Purpose and Research Questions

Building on past research, specifically findings from Study 1 and Study 2 that examined regular season competitive events, the current study worked toward exploring and describing self-compassion in women athletes' perceived important competitive sport experiences. Specifically, *the purpose of this collective case study was to explore and describe the role of self-compassion in women athletes' sport performance perceptions and well-being within the context of an athlete-identified important competitive event*. In doing so, this study worked towards: (a) adding depth of understanding for self-compassion, sport performance perceptions, and well-being at important points in women athletes' sport season; and (b) exploring self-compassion, sport performance perceptions, and well-being from different perspectives from quantitative research to help build a rich understanding of focal constructs and contexts, adding a novel

perspective to my overall dissertation and the sport literature.  Within this study, two research questions were posed:

1.  What are women athletes' recalled lived experiences of self-compassion from an athlete-identified important competitive event?

2.  How does self-compassion play a role in women athletes' recalled lived experiences of sport performance perceptions and well-being from an athlete-identified important competitive event?

## 5.3 Methods

### 5.3.1 Situating the Researcher

As an active research instrument, it is important to situate myself within this study (Creswell & Poth, 2018).  Within this research process my role as the researcher was two-fold: as a researcher and woman athlete.  First, as the researcher I was responsible for all aspects of the research process.  Most notably my presence was particularly engaged during the data generation, analysis, and representation phases.  In each of these stages my perspective and personal experiences assisted with promoting trust and conversation with athletes, understanding sport-specific language and situational factors described by the participants, which led to highly descriptive and in-depth generated data, thick rich description in the representations.  Further, study interpretations were detailed and nuanced due to analysis from a somewhat insider perspective, as I have direct personal experiences of important competitive events.  Second, as a woman athlete I have had experience in a range of sports including many of the sports identified by the athletes in this study, and at a range of competition levels up to the elite for age category (competing internationally but not representing Canada).  These past experiences helped me to (a) identify and develop the interview guides through, (b) build rapport with athletes during the interviews through being perceived as credible by participants, and (c) ask relevant sport-specific probing questions to assist with in-depth data generation.  However, when conducting this study, I was not currently competing and was in what I would describe as the off-season for long distance running (marathon distance: my primary sport).  Because I was in the off-season and did not have any upcoming races (my next important race was 6 months after the last conducted interview), I was able to understand where athletes were coming from without my own expectations and performance perceptions inadvertently being integrated into the research.  Within this research I approached my reflections as an ongoing process where at all stages of the

110

research process my experience was used to strengthen the study, while also making sure the data reflects the participants rather than myself.  While I played an active and instrumental role in this research, I was intentional to keep my own experiences separate while being a key part of the research process so that the representations and interpretations in this study were solely based on participant experiences.

**5.3.2 Design**

The design of Study 3 was a pre-post competition qualitative design (see Figure 5.1), applying a collective case study approach to inquiry.  This study was intentionally designed to be parallel to the design of Study 1 but from a qualitative perspective, adding symmetry to my overall research program and adding balance to the overall research purpose and question.  A collective case study approach was adopted to work toward an in-depth detailed description (Creswell & Poth, 2018; Stake, 1995) of the role of self-compassion in women athletes' sport performance perceptions and well-being around an athlete-identified important competitive event.[16]  Further, within the current study methodological congruence was achieved through the alignment of my philosophical assumptions, interpretive frameworks (pragmatism), approach to inquiry (collective case study), data collection (multiple interviews), data analysis, and data representation.[17]

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[16] Highlighting methodological congruence between the three studies included in my dissertation.  Further, this descriptive approach facilitated a connective style between the three studies of my dissertation research program, as each individual study focused on describing self-compassion, sport performance perceptions, and well-being in sport contexts.

[17] Methodological congruence and the researcher's philosophical assumptions and primary interpretive framework is discussed in-depth in Chapter 2.

Figure 5.1. *Study 3: Study Design and Data Collection Timing*
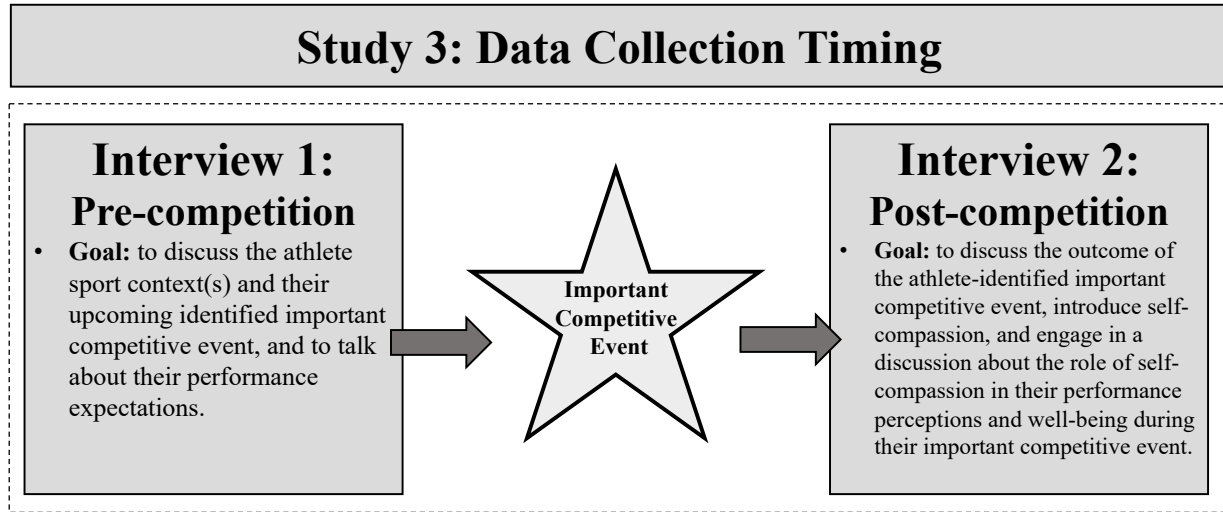


### 5.3.3 Recruitment and Procedures

After receiving institutional ethical approval from the University of Saskatchewan behavioural ethics board, participant recruitment began.[18] Athletes were recruited through PAWS bulletins and in-person team visits facilitated by Huskie Athletics and Saskatchewan Sport Incorporated (see Appendix D.1 for recruitment poster).[19] Specifically, women athletes were invited to participate in this study if they were currently preparing for a competitive event that the athlete herself identified as important (e.g., a qualifying event or a playoff game). Further, similar to Study 1 and Study 2, to be eligible for the current study the women athletes needed to be between 16 and 35 years old, competing between the local and international levels, with at least 12 months of sport specific experience, identify their current sport as their primary sport, and not be currently pregnant or lactating.

### 5.3.4 Data Collection

#### 5.3.4.1 Interviews.

Data was collected through a set of individual in-depth semi-structured interviews designed to explore and describe women athletes' sport experiences and the role of self-compassion in their sport performance perceptions and well-being around an athlete-identified important competitive event. In-depth interviews seek to understand how individuals perceive

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[18] Note that athletes were not recruited directly from Study 1 or Study 2.
[19] Coaches and team staff were not present during recruitment to avoid potential conflicts or pressures regarding participating.

their experiences, promoting detailed and rich description of those experiences (Seidman, 2006). Semi-structured interviews follow a structure that is both focused and flexible emphasizing consistency, participant input, and individual perspectives (Creswell & Plano Clark, 2011; Creswell & Poth, 2018). Both interview guides went through a series of developmental stages to inform and build on findings from Study 1 and Study 2 while being flexible to focus on the important competitive event identified by each athlete. Members of the Sport Health and Exercise Psychology Lab at the University of Saskatchewan were consulted for input and suggestions during the development of the interview guides. Following development, the interview guide was piloted with two women athletes who were ineligible to participate due to competing at the recreational level. This process promoted refinement and the formation of interview schedules that were clear, concise, and contained questions that were well suited to inform the research purpose and questions of this study and to also contribute to the overall research question and purpose.

### 5.3.4.2 Procedures.

Athletes who expressed interest in the study were invited to participate in two one-on-one semi-structured interviews. Interviews were scheduled with the participants so that their interviews were held within five days before and five days after their athlete-identified important competitive event (this is the same time frame used in Killham et al., 2018; Study 1).[20] The majority of interviews took place in the Social Behavioural Sciences Lab at the University of Saskatchewan (PAC 355), which is located in the Physical Activity Complex at the University of Saskatchewan. However, some interviews (4 interviews across 3 participants) were conducted over Skype to accommodate individual academic, work, and sport schedules. All interviews were audio-recorded for transcription and observational field notes were taken directly on the researcher's copy of the interview guide during interviews to assist with data analysis.[21]

Before the first interview began, written and verbal consent was obtained from participants. The consent process included athletes having the opportunity to ask questions prior

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[20] Both interviews were scheduled before the first interview to ensure participant availability for the second interview and that both interviews would be conducted within the described timeframe (i.e., within 5 days before and 5 days after the competitive event).

[21] A trained research assistant (RA) was hired to initially transcribe the interviews, at which point I took over and refined and clarified the transcripts and integrated observational data and filed notes prior to participant member checking. My transcription process included a line by line approach (a slow, steady, and detail-oriented reading of the RA's prepared transcript) while listening to the audio recording to resolve grammatical, structural, and content errors and to transcribe as many places initially identified as [inaudible] as possible.

to consenting to participate (see Appendix D.2. for informed consent form). After consenting to participate the athletes had the opportunity to select their pseudonyms for the study. The first interview was conducted up to five days before the participants' self-identified important competitive events (see Appendix D.3. for the first interview guide) and most first interviews were completed 2 or 3 days before the athletes' important competitive events. Athletes did not receive the interview questions in advance. The first interview began with introductions and a series of rapport building questions. The rapport building was based on an open conversation about their primary sport with discussion points including: describing how they started playing their current primary sport, the role they play on their team (if applicable), and what they like best about their sport. Following the rapport building section, the athletes were asked to discuss their sport context and their upcoming important competitive event. The athletes were encouraged to talk about their sport performance expectations (prospective), in turn satisfying the primary goal of the first interview. At the end of the interview the athletes had the opportunity to clarify, add, and/or discuss any other information she believed was relevant or important that was not yet discussed.

After the athletes completed their self-identified important competitive event, they completed a pre-scheduled follow-up interview, most of which were completed within 2 to 4 days following their important competitive events. Prior to the beginning of the second interview the athletes were again given the opportunity to ask questions before verbally consenting to continue participating in the research study. The primary goal of the second interview was to discuss the outcome of the competitive event (i.e., athletes' performance perceptions, evaluations, and competition outcome), introduce self-compassion and well-being constructs, and engage in a discussion about the role of self-compassion in their sport performance perceptions and well-being during their important competitive event (see Appendix D.4. for the second interview guide). The second interview followed an open-ended format with some semi-structured elements to allow for uniqueness and similarities in experiences between participants to be collected. Further, the second interview was more emergent and flexible in comparison to the first interview, as the outcome of the important competitive event, the athlete's experience of the competitive event, and sport performance perceptions were expected to vary between athletes and be personal to each athlete. Therefore, it was important to intentionally allow the conversation to develop and take shape naturally following the flow the athlete's

experiences.  This flexible approach to the second interview ensured that all athletes had personalized questions to appropriately follow up on conversations and topics that arose during the first interview while also promoting conversations that were consistent between athletes. This approach was intended to generate thick rich descriptions that are associated with collective case study approaches (Creswell & Poth, 2018; Stake, 1995).

### 5.3.4.3 Exit Procedures.

After completing both interviews, participants were presented with a $25.00 Amazon gift card and went through a set of standardized exit procedures.  The exit procedures included thanking the athletes for their time and responses, reassuring them of confidentiality, providing researchers' contact information in case other questions or additional information or comments arose, and asking the participant if she would like to receive a copy of the research results following analysis (see Appendix D.5. for full exit package).

### 5.3.4.4 Data Analysis.

In alignment with qualitative methodologies, data analysis was approached as both an immediate and ongoing process (Creswell, 2014; Creswell & Plano Clark, 2018; Creswell & Poth, 2018).  While saturation cannot truly be guaranteed (Braun, Clarke, Hayfield, & Terry, 2018), saturation was considered throughout the data collection phase following each athlete's second interview.  Although new information continued to be collected in each interview, upon reflection I estimated that saturation within this data set was likely met after seven complete participants for the holistic case description, and that saturation within this data set was likely met after five or six complete participants for the presented themes.  All data collected was included in the data analysis process.  Data analysis followed four main steps.  The first step was to transcribe the audio recordings of the interviews verbatim and to have the transcripts member-checked (athletes signed a transcript release form following review of their interview transcripts).  The transcription process followed steps suggested by Hesse-Biber and Leavy (2004), Creswell and Poth (2018), and Seidman (2006).  Specifically, during transcription, emphasis was placed on recording details such as length, rate of speech, number and length of silences, length of opening and closing statements, control of the interview, tone of the conversation, and how much of the time was spent asking questions.

The second step of this qualitative data analysis process was to analyze the transcripts (and field notes) from varying perspectives.  The transcripts were analyzed from three distinct

perspectives or approaches (Chase, 2005; Creswell, 2012; Creswell & Poth, 2018). *Firstly*, the transcripts underwent a holistic analysis to build a holistic case description which is an in-depth and detailed description of the case including collective temporal processes, highlighting all intended and unintended boundaries of the case (Creswell & Poth, 2018). The holistic case description is the combination and synthesis of data from two or more participants into an overarching representation of all participants, situations, and experiences. This type of analysis helps to identify the defining features of the collective case and serves to provide the reader with context and setting. *Secondly*, the transcripts were considered from a functional analysis perspective (Creswell & Poth, 2018; Stake, 1995). Functional analysis means to identify the function of the participants' descriptions of experiences (e.g., how does the way [language, structure, and emphasis] participants tell their stories deepen the representation of their experiences). While the holistic case description builds the background, functional analysis helps to read between the lines and assist in making sense of and interpreting the unspoken implications and colloquial meanings that come from how an experience is described. *Thirdly*, the transcripts were analyzed through a conceptually driven thematic analysis approach that helped to focus the case descriptions and conclusions (Creswell & Poth, 2018), which involved actively generating themes that were representative of the data and experiences of all participants regarding the study purpose and questions through the lens of self-compassion. The thematic analysis assisted in the overall analysis process, identifying similarities and differences within the collective case of the women athletes. In combination, these three approaches (holistic case description, functional analysis, and thematic analysis) act as qualitative analysis triangulation (Creswell & Poth, 2018) that when brought together helped to tell a full, rich, in-depth, and representative description of the women athletes identified important competitive experiences.

After transcribing the interviews and engaging in the above-mentioned analyses, the final step in this data analysis process was to bring the three analysis types together to compose the final holistic case description (primarily built from the holistic and functional analyses that were also informed by the thematic analysis) and generate themes (primarily built from the thematic analysis and was also informed by the holistic and functional analyses). After the transcripts were analyzed as described above, the data was represented and discussed through the lens of thematic analysis applying categorical aggregation and direct interpretation (Stake, 1995) with a variety of representations built into the holistic case description and the generated themes to

represent the lived experiences of the women athletes around their self-identified important competitive events. Both the holistic case description and generated themes went through iterative processes that included critical debriefing with my supervisor and members of the Sport Health and Exercise Psychology Lab. The case description went through four iterations, and there were minimal changes with each revision. The themes went through 12 iterations with minimal to more substantial changes and modifications with each revision. Initially, seven primary themes were generated. However, in the end many of the originally generated themes were eventually combined to represent the dynamic role of self-compassion as described below.

Trustworthiness was intentionally promoted within data collection and analysis. The promotion of clear and transparent trustworthiness practices in qualitative research is essential to facilitate high quality rigorous research (e.g., Creswell & Poth, 2018; Shenton, 2004). In order to explicitly promote trustworthiness in this research, Guba's (1981) criteria and strategies were applied. Credibility, transferability, dependability and confirmability were central in this study, with the intent to promote high quality qualitative research (Guba, 1981; Creswell & Poth, 2018; Shenton, 2004). Shenton (2004) put forward an array of options to promote the credibility of qualitative research. In addition to Guba's strategies (e.g., persistent observation, peer debriefing, triangulation, referential materials, member checking, and structural corroboration), the current study applied triangulation of analysis, researcher's reflexivity, and member checking to promote and uphold credibility. Transferability and dependability rely on the key details of procedures and data collection to highlight what was done and how. Documentation of all data collection and data analysis processes were kept providing the essential details related to who was studied along with other details of when, where, how, and why. Further, research design and implementation, operational details for data collection and procedures, and reflective appraisal of the project were also documented and monitored to uphold transferability and dependability. Finally, confirmability is how a researcher accounts for potential bias to make sure that findings are informed by the collected data and not by the "preferences of the researcher" (Shenton, 2004, p.72). A reflexivity process was written and includes many timepoints throughout the qualitative research process to account for personal perspectives, values, beliefs, and assumptions regarding the research and to actively work to manage those biases during data collection, analysis, and representation (see Appendix D.6. for researcher reflections and Fig 5.2. below for an example excerpt from my reflexivity). Within the

117

researcher reflexivity documents, the primary goal was to highlight my personal background and experiences that may influence the research process and to assist with data analysis processes such as the interpretation and representation of the collected data. An action plan was also developed and used to illustrate how I planned to, and attempted to, account for my personal biases throughout the research process stages such as the design, data collection, data analysis, and reporting stages of the current study (see Appendix D.7. for accountability action plan).

Figure 5.2. *Study 3: Example Excerpt from Researcher Reflexivity*

Data collection is going really well. I've completed 5 first interviews and 3 second interviews now. I love that I get to talk to athletes about their sport experiences. They are very inspiring in how committed they are to their sports. It gets me really excited for my own pursuits. Today I completed and interview with an athlete and afterward all I wanted to do was goal set and plan my races for the summer. It is times like this when I remember what it's like to have an athletic goal that casts a shadow on so many other parts of my life. I miss being a competitive athlete, but I am so glad that I don't have to go to early morning training anymore … that's the worst. When it comes time for data analysis, I need to make sure to set my own athletic goals aside so that they do not interfere/shape the results.

*Note.* This excerpt highlights how I attempted to reflect on what was happening with my study and plan for future stages simultaneously.

## 5.4 Results

The following results section includes three main subsections that together and individually address the research purpose and questions for this study. Each subsection has intentionally taken a unique perspective to analyzing and representing the data. This approach has resulted in a rich, in-depth, and multifaceted description that accounts for the collective and individual experiences, the sport contexts, time (as this study was prospective), and lessons learned. First is a description of the participants and their sport participation details. This participant description is aimed at highlighting the boundaries of the case, which facilitates elements of qualitative research such as transferability (Creswell & Poth, 2018; Guba, 1981; Shenton, 2004). Second is an in-depth holistic case description presented in three separate temporally bound descriptions (i.e., preparing, competing, and reflecting). Within the holistic case description, no individual quotes are presented as this subsection is intended to highlight the collective experience and the patterns and boundaries that define this collective case. The absence of participant quotes was an intentional strategy to emphasize the shared experiences of the women athletes, which is consistent with collective case study data analysis and representation approaches (Creswell & Poth, 2018). The third subsection is the presentation of

generated themes. The presented themes were generated through the conceptual lens of self-compassion in an attempt to provide a clear description of the role that self-compassion played in the athletes' sport performance perceptions and well-being. While a conceptually driven thematic analysis is not common this approach can be highly valuable within collective case studies as it helps to focus the analysis, which in turn promotes a deeper exploration of the constructs within the specific case. Within the generated themes presented below the collective and shared patterns are described and direct quotations are presented with participant pseudonyms to facilitate a humanistic representation of shared and individual experiences (Creswell & Poth, 2018). In combination these three subsections provide an in-depth, detailed, interconnected, and representative account of the women athletes in the case and the role of self-compassion in the women athletes' sport performance perceptions and well-being within the context of their athlete-identified important competitive event.

**5.4.1 Participants**

Initially, 10 women athletes consented to participate and completed both individual semi-structured interviews; however, one athlete withdrew without reason[22] from the study following the interviews but prior to transcription (her audio data and field notes were not transcribed or included in any stage of the analysis process). The final sample for this collective case study included 9 women athletes between 19 and 27 years of age who identified as Canadian. The women were currently competing in a variety of primary team and individual sports including: Basketball (4: position numbers 3, 4, and 5), Cheerleading (1: base), Long Distance Running (1: road 10km), Track and Field (2: middle distance, sprints and hurdles), and Volleyball (1: libero), with a range of experience specific to their identified primary sport (4 to 15 years), a range of current competition levels (Local [1], National [6], and Elite [2]), and a range of competition levels (Regional [1], National [3], Elite [1], and International [4]). The athletes self-selected pseudonyms were: *Bridget*, *Hermione*, *Jane*, *Janelle*, *Jill*, *Malorie*, *Maria*, *Sarah*, and *Tessa*.[23]

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[22] The researcher did not follow up regarding why as participants were allowed to withdraw at any time without reason or repercussions (identified in the informed consent and verbally stated at the start of both interviews).
[23] Note that all information is presented in alphabetical or logical order and as separate descriptive elements to assist in protecting the identities of participants.

### 5.4.2 Holistic Case Description

#### 5.4.2.1 Preparing.

In the mid to late stages of their competitive sport seasons, 9 women athletes looked toward their athlete-identified important competitive events.  The athletes identified that their upcoming competitions were important for a variety of reasons, including physiological and objective performance reasons (i.e., setting a new personal best or personal record, feeling strong or skilled, winning or achieving first place, advancing to the next stage of competition, fulfilling their role[s] well, applying a new strategy effectively, or following plans set by themselves and/or their coaches), psychological reasons (i.e., pride, momentum building, security, satisfaction, confidence, perceived environmental control, self-approval and perceived approval from others), and social and community reasons (i.e., fulfilling the expectations of coaches, satisfying and living up to the expectations of others, showcasing their sport, seniors night, important peers, family and friends observing, long standing athletic rivalries, support and encouragement from and for the self and others).[24]

The athletes typically highlighted that their upcoming important competitive event was important to them for multiple reasons and described that their reasons were often a mixture of performance, psychological, and social and community reasons.  Each athlete commonly spoke about three or four salient reasons why their upcoming competitive event was important to them.  Further, because the competitive events were important for multiple and sometimes conflicting reasons, the athletes described grappling with and experiencing complex cognitions and emotions in the final stages of preparation before their competitive event.

The women described a variety of pre-competition cognitive and emotional states they were aware of and experiencing as their important competitive event neared.  While some athletes struggled to clearly articulate the complexities of their cognitive and emotional experiences, others were highly articulate highlighting their engagement in self-reflection and self-knowledge gleaned from experience and reflection.  In general, the athletes described experiencing cognitive and emotional states such as performance anxiety, self-doubt, self-criticism, fear of failure, guilt, excitement-nervousness, pride, hope, gratitude, and nostalgia.

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[24] It is possible that there is some overlap between the items presented in the psychological reasons and the social and communities reasons lists.  However, an intentional attempt was made to make sure items that were included on the psychological reasons list were highly individual whereas on the social and community reasons list were interpersonal.

The women spoke about how their thoughts and emotions were at times conflicting with one another or led to a state of feeling overwhelmed, which often added a layer of self-doubt and nervousness to their upcoming competitive event.

The athletes highlighted that their complex cognitive and emotional states are typical and to be expected before an important competition. They noted that they and others in their spot have felt this way before and that they expected to feel this way again in the future. Further, the athletes discussed how criticism, judgement, harsh evaluations, and upward social comparisons are also *normal* and to be expected in their sport contexts, including training and competition situations, requiring them to manage and regulate their responses to harsh self-attitudes and commentary from important others (i.e., teammates and coaches). The athletes suggested that their pre-competition cognitive and emotional experiences were often exacerbated when faced with criticism, judgement, evaluation, and social comparisons, even if well-intended. Again, some athletes were more able to resolve the distance or discrepancy between simultaneous opposing thoughts and emotions and criticism, judgement, and comparisons than others, but all athletes described a process of intentionally working at regulating their cognitive and emotional states when preparing for their important competitive event.

In an intentional attempt to self-regulate the athletes engaged in a range of cognitive and emotional coping and regulation strategies. The athletes often engaged in adaptive processes such as re-framing, perspective taking, seeking social support, and calming or centering strategies. However, the athletes also discussed how they engaged in maladaptive or counterproductive regulation strategies such as avoidance, self-prescribed perfectionism, self-defeating self-talk, lowering expectations, and blaming others. Due to feeling overwhelmed or frustrated by the complexity of their cognitive and emotional experiences, many athletes described how they could not fully trust their feelings, so they needed to trust in the process and their training. Further, even though some athletes were working with mental skills consultants to some degree, all athletes highlighted that their state of mind was an essential element for reaching their performance goals and expressed wishing to some extent that their training more explicitly incorporated psychological training in addition to physical and strategic training.

The athletes prepared for their upcoming important competition in a range of ways for a range of reasons, however, all athletes engaged in extensive physical sport-specific training such as strength training and skill acquisition (specifically the athletes reported completing between 4

to 7 sessions in the past 7 days), strategic training such as planning and learning about the opposition (specifically the athletes reported completing between 1-4 sessions in the past 7 days), and psychological preparations such as working with mental skills consultants and intentionally managing their affective and emotional states (specifically the athletes reported completing between 1-3 sessions in the past 7 days). The athletes identified that they were reasonably prepared for their upcoming competitions and that they expected to perform similar to their typical performance over the past year. However, the athletes identified that it was challenging to predict their sport performance because their skills and physical competencies had been increasing steadily over the past several years and that made it challenging to state their expectations based on past performance. They spoke about how their typical performance over the past year was to be better in some way than they ever had before which led to challenges in making predictions about how they would perform in their upcoming event. However, they noted that they would be disappointed if they did not continue the trend to be better than they ever had been. The reservations athletes held regarding their sport performance expectations and general performance perceptions were inlayed with commentary regarding, doubt, fear, perfectionism, and the inability to control elements of their competitive contexts.

### 5.4.2.2 Competing.

On the day of the athlete-identified important competitive event most typical or usual daily activities were intentionally and unintentionally interrupted as athletes focused on their sport and performance goals and competitive events. The women spoke about skipping classes, neglecting household chores, and disengaging socially in order to make room in their day for their pre-competition routines. The specific pre-competition routines were developed over time (typically many years) and athletes clutched to them, holding on and believing that these routines were essential for their sport performance that without their curated routines they would be at risk of failure, a loss of situational control, or discomfort and distraction.

The pre-competition routines adopted and promoted by athletes were most often related to social needs, sleep, nutrition, and states of readiness elements. As they prepared to compete the athletes usually used intentional isolation and occasionally engaging superficially with other athletes to distract themselves for the competition. Within hours of the athlete-identified important competition the athletes entered into their highly practiced pre-competition routines, often adopting an autopilot approach to get them ready without forgetting anything and getting

their heads *right*.[25]  The athletes' routines typically followed the following sequence: (1) left their day (school or work) early,[26] (2) ate a specific pre-competition meal regardless of being hungry, (3) found a quiet space to comfortably rest or nap,[27] (4) engaged in routines to help them focus on the task at hand (e.g., reviewing the competition format or specific strategies they were going to apply), (5a) make their way to the venue, (5b) get dressed and make sure everything (clothing, hair, and other equipment) is just right,[28] (6) engage with teammates, coaches, and team staff for informal and formal warm-ups, (7) manage any last minute needs (e.g., scan for important spectators, use the washroom, double check shoelaces), and (8) get their heads 'in' the competition and tune everything else out to just focus.

As soon as the important competition began the athletes described being completely focused.  They spoke about how they used a variety of strategies to stay on task and energized while not getting distracted (e.g., hand gestures, mantras, and other quick routines).  These strategies were applied when athletes were actively competing, were on the bench as an observer participant, and when athletes needed to keep their minds level due to a mistake, suffering, taking risks, or performing surprisingly well (e.g., unexpected success or making a key play).  Keeping a level head was described as a critical element that fostered 'good' decisions during their competitions.  Athletes' evaluations of the 'goodness' of a decision were often based on perceptions of themselves, coaches, teammates, opposition, and spectators.  However, these perceptions were often based on implicit or unspoken information and were therefore challenging for athletes to describe.

During competition the athletes needed to make several split-second decisions, decisions that were often discussed as reflex or automatic choices that were a reflection of their perceived preparedness and training.  Specifically, these choices were often related to on task cognitions and behaviours.  However, the athletes also faced many events and interactions during competition that required intentional cognitive and emotional regulation.  During competition

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[25] Noting that two athletes had interruptions to their anticipated pre-competition routines, which were perceived as unanticipated and highly problematic.  The athletes did the best they could to emulate their typical routines in spite of the unforeseen circumstances in an attempt to regain control over their competitive environments.  However, both identified that these unforeseen challenges led them to experience self-doubt and anxiety regarding their competitions and they described how the interruptions impacted their sport performance perceptions.
[26] With the exception of early morning competitions.
[27] With the exception of early morning competitions.
[28] Step 5a and 5b were interchangeable depending on the competition facilities and contexts.  Specifically, some athletes got dressed and ready at home or away from the completion context, while others got dressed and ready in a team or change room at the competition venue.

athletes identified feeling doubt, envy, excitement, frustration, guilt, and pride while engaging in thoughts related to self-criticism, social comparison, and evaluation by the self and others. They spoke about how it was necessary to keep their thoughts and feelings under control when competing so that they could keep their heads in the right place and frame of mind that would promote their success. Athletes also spoke about being in 'the zone' or in a state of 'flow' where they relied on their training and instincts to avoid *overthinking* or getting *caught up* in a situation, thought, or feeling.

While a positive outcome was not a guarantee for these athlete-identified important competitive events, nor is it ever in sport, all athletes in this collective case study did have a positive outcome in their important competitive event. Their success was individually identified and described in relation to their goals and pre-competition sport performance expectations and perceptions.

### 5.4.2.3 Reflecting.

The athletes described a complex and evolving process of reflection following their important competitive events that progressed through immediate reflections, reflecting over the next day, and then in the moment reflections during the second interview. Further, the athletes also highlighted that their reflections about this important competitive event would likely persist into the future as they still reflect on other competitive events that took place in the past. All athletes discussed that their reflections about the competitive events were, at least up to the point of the second interview, coloured by the multiple goals and expectations that each athlete had prior to competing, why the competition was identified as important, and their complex cognitive and emotional experiences.

The athletes' first stage of reflection was immediate. For some athletes their immediate reflections started before they had fully completed their competitive event and for the rest their reflections started as soon as they completed the competitive event.[29] The athletes described the switch from competing to reflecting in a variety of ways that highlighted an immediate and contrasting change of perspective. When the athletes were in the phase of immediate reflections,

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[29] Athletes with longer or less cognitively demanding competitive events engaged in reflective processes toward the end of their competitions. Whereas athletes with shorter or more cognitively demanding competitive events did not being to reflect until their role or 'job' was complete, which might have been toward the end of an event or immediately following the conclusion of the competitive event. Further, one athlete even spoke about the pitfalls and failure she had previously experienced when she disengaged prematurely from a competition and she was highly aware and intentional with staying focused on her event until she was completely finished competing.

they engaged in thought processes regarding: reimagining a specific moment or moments, trying to collect more information about their event, thinking about the things they wished they could have or should have done, wanting to be acknowledged for their efforts and success, and working to manage their current emotional states. During this stage of reflection, the athletes were also focused on the bittersweet outcomes of their important competitive events. Athletes provided examples of their bitter sweet experiences such as winning player of the game but not winning the game, setting a personal best but not placing, and successfully completing a technical skill or strategy but making a simple error at a different point. These examples highlight how the initial reflective process can be complicated by complex cognitive and emotional experiences that are related to the complex and multifaceted goals and expectations that athletes held about their important competitive events.

As athletes reflected over the day following their important competitive event, they described being caught between holding on to their competitive experiences and wanting to let go and move forward. The athletes held on to both the highs and lows experienced during their important competition. However, the athletes discussed how important it was for them to let go and move forward, regardless of proximity of their next competitive event. Savoring the good was at times described as self-indulgent or that the good was soured in some way by the bad. While in contrast holding on to the bad was frequently described as what a diligent athlete should do to improve and work toward their goals and future successes. For some athletes they identified needing to switch gears quickly and become re-engaged in preparing for their next competitive event, while others had the off-season ahead of them. The difference in the timing of the next competitive event impacted how the women reflected on their competitive event during the day following their identified important event. Specifically, athletes with a shorter amount of time between important events appeared to be more future focused than the athletes with a longer amount of time between important events.

During the second in-depth interview athletes engaged in active reflections of their competitive events in-the-moment. Generally, the athletes' reflections were intertwined with self-criticism, the desire to learn or improve, and the need to cope and regulate before moving forward in their sport. Athletes were quick to self-criticize their sport performance, talking about how they should have been better in some way and by some metric. However, many of the athletes also identified that their quickness to criticize was reinforced and often expected of them

125

in their specific sport contexts.  The exception was that one athlete described trying not to be self-critical but that she was unable to avoid her critical thoughts due to habitual thinking patterns.  As a group the athletes were all able to clearly articulate how they had failed or underperformed in their important competitive events, reinforcing the bad elements of their bitter sweet or complex competitive experiences.  Conversely, the athletes at times struggled to articulate their desire to learn from their mistakes and adaptively cope so that they could move forward and work toward excellence in their sport, which indicated that these adaptive forward reflections were only starting to take shape or be internalized.[30]

Throughout the entire reflective process, the athletes highlighted that they experienced a variety of motivated reflections.  The athletes described their reflective processes as intentional and motivated by their desire to improve and meet their goals and expectations in their sport.  Typically, the impetus behind their motivated reflections was wanting to move forward to be the best that they could in their sport and engaged in habituated or normalized reflective processes that they believed would help them reach their goals.  The athletes engaged in both adaptive and maladaptive motivated reflections across the overall reflective process described above; often the different types of motivated reflections were experiences simultaneously.  The types of adaptive motivated reflections the athletes described were (a) reflecting to cope and (b) reflecting to learn and improve.  Conversely, the athletes also engaged in maladaptive motivated reflections such as perfectionistic, social comparative, and self-critical reflections.  Yet the athletes did not fully describe how and why these maladaptive reflections were beneficial to them as they worked toward their goals and potential in sport.

### 5.4.3 Generated Themes

As discussed above, a pair of sub-themes were generated that each add to the overarching generated theme: *Continuing to Excel in Sport*.  The overarching theme generated from the interview data, through the lens of self-compassion, is representative of the activating role that self-compassion played in the women athletes' sport performance perceptions and well-being in and around their self-identified important competitive events.  The theme *Continuing to Excel in Sport* highlights discussions where the athletes described that they could benefit from a self-

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[30] It is possible that the athletes struggled to articulate for a variety of reasons that could include: (1) that their perceived failures were emotionally difficult or (2) that they had not yet fully processed what they wanted to say or how their experience was meaningful to them in that moment.

compassionate perspective during the preparing, competing, and reflecting stages around their important competitive events. The two generated sub-themes highlight that self-compassion plays a role in women athletes' continued excellence in sport through (a) *Re-framing Criticism*, and (b) *A Determined Approach*. Below is a description of the two generated themes; each theme contributes collective and individual voices to the overarching theme and describes the role of self-compassion in women athletes' sport performance perceptions and well-being around an athlete-identified important competitive event.

### 5.4.3.1 Re-Framing Criticism.

Within the overarching theme of *Continuing to Excel in Sport* the first sub-theme generated from the interview data highlights that self-compassion facilitates women athletes' sport performance perceptions and well-being through *Re-framing Criticism*. This theme is representative of how the women athletes worked to better understand the intentions of specific critical and self-critical statements related to their self-identified important competitive events. The athletes spoke about how they needed to manage critical and self-critical statements in a variety of contexts before, during, and after their identified important competitive events, which is reflective of the holistic case description provided above.

Following a brief introduction to self-compassion the athletes discussed ways in which they already use self-compassion, without any specific training or guidance from coaches or other professionals, to translate or re-frame critical and self-critical statements. While the women discussed various types of criticism and self-criticism that they often faced in sport, within the context of their important competitive events they typically provided a variety of contextual details first about how pervasive and widespread both criticism and harsh evaluation is within their sports. For example, *Sarah* said "I think that's a hard thing in sports. I think that most people are really hard on themselves, me included." Many of the athletes also spoke about how their sport contexts were normalized to the impact of criticism and self-criticism to the point where athletes and coaches believe in the utility of criticism and self-criticism as a way to improve, even though athletes identified that they did not fully believe that it was true. The desensitized contexts that athletes described at times reinforced the utility beliefs and volume of criticism and self-criticism that athletes experienced. The athletes were not shy to describe in detail the times when they reacted self-critically and how their goals were derailed due to their critical perspectives when they talked about choking, losing focus, downward spirals, or how "it

just goes downhill … and I'll only be able to see the negative" (*Janelle*) when responding to perceived failure in sport.  Our conversations also highlighted how self-compassion played a role in how the athletes successfully managed the critical and self-critical statements, which in turn promoted their sport performance perceptions and well-being.

Within this study the women athletes experienced a wide range of criticism and self-criticism related to their sport performance, their expectations, and their evaluations regarding their important competitive events, which impacted their perceived well-being.  For example, *Tessa* talked about how when she received critical feedback from her coach her thoughts at times became destructive and she became frustrated with herself.  She said,

> Um, but then in my head, I was like, come on. I was like, coach has already said this, like, so many times to so many people, and now you just went out there and did the same thing, like, you, like, you need to listen, like, you need to show that you're actually paying attention, or, like, you know what's going on in the game kind of thing. And I guess that always when that happens, um, sometimes you're like, I don't know if she's going to put me back in, …

The women also talked about how their self-criticism increased as they got closer to their identified important competition, for example, *Malorie* described a situation when she was struggling as she prepared to compete, and how as her important event approached she became even more self-critical, "But then like come Thursday, you're probably judging things a little more critically too, of how it's going [training], 'cause you're like, 'well, this is my last practice before the game so I better figure it out.'

The athletes also talked about how their self-criticism often stemmed from upward and at times unrealistic social comparison.  The athletes talked about how they and their coaches consistently compared them to other athletes, which was often framed as adaptive or facilitative by coaches and the athletes.  However, while the athletes at times described upwards social comparison that was adaptive (e.g., watching another athlete to learn or master a new skill), the majority of the upward social comparisons that the athletes described experiencing were actually critical or demeaning.  The examples athletes described were highly varied and often individually relevant or impactful.  For example, *Tessa* talked about a specific but typical thought pattern she has during practice times,

128

I think because I probably directly compare myself to people a lot more. So if

we're doing [drills]... 'cause in practice, so you're always, you're usually always

with somebody … But I think, like, if the whole team's doing a drill or something

like that, and all these, like... And I'm like, "why, why can she do it and I can't

figure it out?" And then I just, like, start thinking about everything…

*Hermione* mentioned that she often tells herself to just focus on herself and not on others because she can get lost and caught up in what others are doing. Another example of self-criticism as a result of social comparison was when *Jane* talked about how she engages in social comparison with one of her training partners,

at the beginning of the season, I, when I was hopping in with my other teammate,

like she was coming off a really great cross-country season and so she had all this

awesome base training and hadn't really had to like take much of a break and I

was coming off of like a injury-ridden [fall] season where I didn't run very much.

And the first few workouts like sucked and I was in a bad mood and like she was

way faster than me and I was just like "what am I doing?"

*Bridget* talked about how her social comparison activities had blurred into self-criticism and obsessing about her opponents,

Like, I think that's something that is very real and happens. Especially like when

you're leading up to competitions and, like I say, before the weekend, like, I was

looking at the rankings from all across Canada. I was looking at what the other

girls were running. And I was looking at individual results from everyone else.

And trying to gauge where I would be and so you do worry about other people.

Um. And your performance as well. And what you're doing. And, um, like I say,

[wondering] if you're doing enough.

Each athlete provided examples of how critical upward social comparison was painful and led to frustration, which in turn often reinforced criticism and self-criticism regarding their physical capacities and feelings of worth. However, the athletes also described how self-compassion assisted with re-framing and translating these harsh or comparative statements and thoughts. The women athletes spoke about how self-compassion helped translate and re-frame the critical and self-critical statements they encountered by facilitating perspective-taking and trusting that their coaches and they themselves wanted them to succeed.

For some athletes the process of re-framing criticism and self-criticism through self-compassion was highly intentional, while for others it was more automatic.[31]  For example, *Jane* said "Lots of things I feel like I'm doing intentionally like drinking all the water ... and like I have a mindfulness app on my phone …" while *Janelle* said,

> I started doing more, um mindfulness kind of programs and reading books and stuff like that.  Taking more of an interest in that, and because of that, that's what has helped me and allowed me to be able to let go of what … doesn't quite go the way I want it to, and then be able to make it better next time.

When the athletes were describing their re-framing processes, they discussed that applying self-compassionate approaches was intentional.  Importantly, all athletes discussed the relevance and practicality of self-compassion in translating criticism and self-criticism within their sport contexts and described how this process can also be unintentional or more natural.  For example, *Tessa* said, "just for me, taking that big deep breath, and just kind of feel, like, everything, and then you just release it." to describe how self-compassion can be automatic for her when she gets frustrated while competing.  The athletes spoke about how this re-framing, translating, or deciphering process was essential for them to improve and be their best within sport.

Through self-compassion the athletes identified that much of the criticism and self-criticism they received in their sport was well-intended or intended to be constructive.  Specifically, through self-compassion the athletes were able to identify and adopt the perspective that most harsh feedback regardless of delivery had substance, at least on some level.  For example, *Jill* was adamant that her coaches have her best interests in mind when they are harsh or critical toward her and that it is important for her to be able to decipher the message so that she can improve.  She talked about being able to understand where her coach was coming from when she got subbed out during her competition,

> it's not like coach was, like, "you suck", like, "if you would have done this earlier", you know, "you could have been out there playing".  …  But in a situation like this [important game], like, I'm definitely more understanding of why and how things are working out.

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[31] When the athletes reflected on their processes during the second interview, they spoke to ways in which they naturally re-frame through self-compassion without realizing or knowing that this is what they were doing.

Further, many of the athletes emphasized that there was often a valuable underlying message in critical statements. However, sometimes the criticism described by athletes was perceived as mean spirited or unnecessarily harsh. Yet the women also spoke about how, in some sense, it was their responsibility to not get offended or take it personally because criticism and self-criticism were viewed as an inevitable aspect of their sport experiences. For instance, *Tessa* described her ability to manage her reactions, "So I'm pretty good initially, but then, like as emotions get to, start running high, then sometimes I can be not great at it."

Athletes also identified ways in which the subcomponents of self-compassion, self-kindness, common humanity, and mindfulness, were related to their individual processes of translating criticism and self-criticism in their sport contexts. Self-kindness was often described as "self-love" by athletes, and as a way to "comfort" themselves. Specifically related to criticism and self-criticism, self-kindness was described as a way that the edge or roughness of a comment could be softened and that this softening allowed space for athletes to look at the deeper meaning or intent or the true message of a comment. *Sarah* said "Sometimes it doesn't work out but that doesn't mean that hmmm you should be hard on yourself or that you should think any less of yourself because you are trying to do hmmm the right thing", to explain how she tried to use self-kindness to re-frame a self-critical comment (or a comment from a coach) during her important competition.

Common humanity was also discussed as relevant to the athletes' re-framing processes as it fostered a sense of connectedness with other athletes. Mistakes were discussed as a source of suffering in sport where athletes engaged in common humanity to cope. *Tessa* said, "I guess just understanding that, like, everybody makes mistakes. I think that's the biggest thing, is it happens to everybody." Feeling connected to other athletes based on their shared suffering experiences helped athletes to engage with other athletes to make sense of criticism. *Maria*, for example, described the value of common humanity when managing criticism, "that it wasn't just me being criticized. It was other people in the group as well, so that I didn't feel as secluded." Many of the athletes described situations where they and another teammate or training partner were able to talk about critical feedback they had received from coaches and how this support and trust between athletes was necessary to gain perspective and sort out the message underlying the criticism. They said that if they were not able to see the shared suffering through common

humanity they would not have been "able" to reach out and talk, highlighting that common humanity directly played a role in re-framing criticism.

The third element of self-compassion, mindfulness, was the most discussed aspect of self-compassion that athletes talked about in their re-framing processes. Mindfulness allowed the women to see or know that there was a message underneath the critical or self-critical comments or thoughts. *Janelle* described this awareness as facilitating,

Um and then more recently, like kind of this past summer, I guess, was when I realized that, uh, my like striving for perfection wasn't as beneficial as I thought it was, because I was getting stuck on so much. And I was not being able to move past certain things to get that improvement that I wanted, because, mentally, I was still in the past, holding onto this thing that happened such a long time ago. I shouldn't even be thinking about it anymore.

Mindfulness was described by many of the athletes as the element that makes sure they did not get caught up in self-critical spirals or traps. In combination, being aware and not getting caught in a downward psychological cycle were essential for re-framing criticism and self-criticism from the athletes' experiences and perspectives.

The women athletes spoke about how when they were able to manage criticism and self-criticism in their sport contexts their sport performance perceptions and well-being benefited in three main ways. First, when athletes were able to re-frame criticism and self-criticism, they were more capable of holding more accurate sport performance perceptions because they were able to acknowledge and accept their mistakes and perceived errors. The athletes described how more accurate sport performance perceptions allowed them to see both their strengths and areas for improvement, which facilitates reaching their goals and athletic potentials, rather than getting "stuck". For example, *Malorie* described how self-compassion helped to re-frame, accept, and move forward from mistakes,

So the biggest thing for me is like the more I'm thinking about it … the like harder it is to perform. So if I can just like show myself the compassion and kind of, like, I guess, accept errors … it's easier to move on.

Second, athletes described being able to learn from mistakes or errors faster when they were able to re-frame criticism, which benefited their sport performance perceptions and well-being. *Jane* expanded on this idea by highlighting that the fewer times she makes the same error the better

132

she will be in her sport, which will allow her to chase what she called "big dreams" in her future as an athlete.  Further, *Sarah* said,

> I'm typically, I'm a very analytical person … that's how I have always processed things hmmm but I think that maybe in those moments just to not be so frustrated with myself for making a wrong read, knowing that like. I think knowing that hmmm, that like you are going for it as an athlete.  So I can fix it for next time.

Third, the athletes sport performance perceptions, specifically their performance expectations, were perceived as more appropriate when they successfully re-framed criticism and self-criticism, rather than their expectations being extremely high, out of reach, unreasonable, or perfectionistic.  For example, *Hermione* said,

> just one run at a time … some runs just aren't good, ah, that's just how it is.  But I know that, so, it's, it's not so bad when I need to slow down, or I don't finish.  I just, I just know it's only one of many.  And in the end I will get to where I want.

to emphasize how she was able to work toward her bigger goals in sport by setting a series of reasonable smaller goals that allow for the flexibility to learn from mistakes as she progresses.

The biggest impact that re-framing criticism and self-criticism had on the athletes' well-being was being able to step out of destructive, distracting, or painful thought cycles.  The athletes discussed that when they understood the meaning, source, or motivation of critical and self-critical statements and thoughts they did not get "stuck" in the past obsessing over things that could not be changed, or "stuck" focused on the future that they could not enjoy the moment to moment success and joy of competing and being elite athletes.  The athletes highlighted that when they were able to re-frame criticism and self-criticism they were more likely to take care of their physical, emotional, social, and psychological selves.  For most athletes this included eating better, sleeping better, increased mental focus and attention (in and out of sport), being empowered by the function of their bodies (rather than only focusing on their appearances), being self-accepting of perceived flaws (physical or otherwise), being happier, being excited about and grateful for their sport (in the present and in the future), feeling more in control, feeling more connected to others in sport (and important others outside of sport), and feeling capable of challenging themselves and confident that they would rise to the occasion.

### 5.4.3.2 A Determined Approach.

Within the overarching theme of *Continuing to Excel in Sport* the second sub-theme generated from the interview data, through the conceptual lens of self-compassion, highlights that self-compassion facilitates women athletes' sport performance perceptions and well-being through *A Determined Approach*. Specifically, the athletes perceived that self-compassion played a role in their sport performance perceptions and well-being by keeping them focused and determined as they approached their goals. The athletes often talked about self-compassion as an energized internal force that helped to keep them hungry, driven, and chasing their "big goals" (*Bridget*) in sport. This determination was perceived by athletes as beneficial to both their sport performance and well-being; for example *Sarah* said, "I always want to just keep getting better and keep improving". The athletes' insatiable desire to succeed was not softened by self-compassion; rather, self-compassion helped to focus the women's sport goals and persist during challenges in the preparing, competing, and reflecting stages around their important competitive events.

Related to the contexts of their self-identified important competitive events, the athletes spoke about a variety of experiences where they needed to be determined, persistent, tenacious, and fearless in the pursuit of excellence. The athletes described making errors, balancing all aspects of their sport preparations, fatigue, injury, injury prevention, and sacrificing as common challenges or events they faced around their important competitive events where they needed to rely on their determination and persistence. When the athletes discussed their important sport experiences, they often re-stated to confirm and emphasize the importance of a thought, action, or belief in their ability to persist during challenges. The athletes described their determination and persistence in sport as vitally important to their success and progression. For example, *Hermione* talked about a challenging mental point in her important event when self-compassion helped her to stay determined, she said,

> there were points in times where I thought, do I really want to do this? Is it worth
> it? Like does it really matter if I come in at a certain time? But hmm if you broke
> it down, kinda one kilometer at a time and just [said] "OK I can make this
> kilometer. We'll see, can I maintain it [pace] at the next kilometer?" And I found
> that [kind self-talk] strategy worked really well…

*Hermione's* recollection highlighted how her self-compassion was directly connected to her determination and persistence by breaking a challenge down into manageable parts and then talking herself through the tough parts of her important event, which resulted in a personal best. *Bridget* recalled how her determination pushed her forward, even if at times is was uncomfortable, "you're pushing yourself and your body and your mind to, um, hopefully like a new place … you just need to give yourself that extra push some way. And to know that you're just not settling." Further, the women athletes noted that their actual sport performances, performance perceptions, and well-being were highly connected and that their determination often encompassed many elements of their competitive experiences in sport. Therefore, the women often described how, through self-compassion, their determination and persistence prompted both their sport performance perceptions and well-being in tandem.

The athletes described that self-compassion directly promoted their determination and persistence in sport. To highlight her connection between self-compassion and drive to succeed, *Jill* talked about how it was important to recognize where she was at in the very moment in her athletic development,

> I feel like in the situation on the weekend, I was kinda like, you know, like, this isn't my time, like, this is, you know, here like I'm, you know, I'm being a good teammate, I'm here for them, like, um, you know, you're gonna put the work in, you're gonna… it's gonna happen eventually, um…

She went on to talk about how when she was honouring where she was at, she could stay focused on developing instead of getting upset or bitter because of how little floor time she got during important games. Part of what helped keep athletes determined was their ability to maintain perspective on their progress. Specifically, they stated that a self-compassionate sport experience was more accepting and allowed for the celebration of all the little victories (no matter how small), *Jane* said "Just like, um, a reminder of how much progress I have made."

The athletes also discussed how the three components of self-compassion each fostered their determined persistent approaches in sport, with mindfulness as the most frequently discussed component that facilitated a determined approach. The women often spoke about how their awareness or "in the moment" experiences were essential for their success. *Janelle* explained that when she is in the moment, she is more focused and on task, which is valuable for her to finish strong and fight for her progress,

135

I identify that [mistake], and then I let it go.  And then, that's the last I think of that, because there's other things happening.  There's other things I need to focus on.  Um, so like, the mindfulness component of it is a big thing for me …  because I'm not dwelling on what happened, and ... focusing more so on the future.

*Tessa* said, "for me, it'd be like, um... maybe trying to focus on, instead of what I didn't do, maybe more what I can do to change it" when talking about how important staying focused is for her to stay driven and working toward success.  *Maria* talked about how her well-being benefits from mindful reflection on her performance when she recalled, "More of what I was doing were hits and were sharper than usual. My [sport] in the videos looks clean and has been and you can tell that I'm excited and happy when you watch the videos."  She went on to describe how it was great to re-watch video and compare how happy she was in her recent competition and to see how her joy actually helped her be "better".  Further, to highlight how mindfulness was important for her to notice her progress, *Hermione* talked about the affirmation she gets and the drive to excel she has when she reflects on her successes, "those little shots of 'oh yeah this is worth it.  Oh yeah, I did well' or you know this change, and this improves hmm makes you think what's next or what's bigger what you push yourself for."

The women also spoke about how mindfulness fosters perspective taking that helps keep their short- and long-term goals in mind.  At times this included being mindful of the sacrifices they were making for their sport.  For example, *Jane* spoke about how mindfulness helps her manage sacrifices for sport, "When I think about compassion, sometimes I think of being like, okay, well, if you don't get the best grade, like it's not the end of the world.  'Maybe you should get some sleep' instead."  This mindful perspective not only helped focus the athletes but also energized and motivated them to work hard toward their goals and potential in sport, not just in their important competitive event.

While mindfulness was most often noted regarding their determined approach, the women athletes also noted that self-kindness and common humanity were still relevant.  Self-kindness was identified as helpful in fostering a determined approach by accepting that mistakes happen, and when athletes choose to react with self-kindness they can keep striving for their best and not get hung up.  For example, *Malorie* gave an example of how she chose to react with self-kindness following a mistake during her important competitive event,

136

so just like not getting so caught up in it. Like, 'Oh my gosh, my defense is so bad. They keep going by me.' trying to just flip it and be like, 'Okay, well next time, I just need to back off a little' and like that little extra gap will be able to help me.

Self-kindness not only helped *Malorie* manage a challenge in her competition, it also added to her determination and drive to dig deep and play hard.  Further, all athletes discussed the importance of having other athletes around to help them form a community of determined athletes who support each other and achieve together.  Many of the athletes also found comfort in the perceived "us" of their sacrifices, refencing others such as their teammates, training partners, and coaches.  This community was often described as an essential and valuable part of sport, and when talking about common humanity *Janelle* reflected "That one kind of just seems implied for me."  When discussing that all athletes struggle, *Bridget* recalled, "I'm sure all athletes at some point have kind of said, like just sat down and kind of re-thought things like, 'is this what I'm supposed to be doing?'"  The topic of knowing that sport is often hard was identified by athletes in a variety of ways as a way to keep things in perspective, learn from mistakes, and keep approaching their goals with determination.

## 5.5 Discussion

The intent of this collective case study was to explore and describe the role of self-compassion in women athletes' sport performance perceptions and well-being within the context of athlete-identified important competitive events.  Focusing on athlete-identified important competitive events is a novel contribution to the literature as important competitive events often present unique challenges related to self-criticism and stressors that can thwart athlete well-being and performance (e.g., Crocker, 2016; Jordet et al., 2007; Weinberg & Gould, 2011).  While a collective case study approach has not typically been taken in self-compassion and sport research, the results of this study have highlighted that a qualitative approach can add meaningful description and depth to the literature and has supplemented quantitative findings (i.e., Killham et al., 2018; Study 1; Study 2).  A defining feature of case study research is the presentation of lessons learned from the specific case described (Creswell & Poth, 2018).  Therefore, in alignment with the qualitative approach of this study, the remainder of this discussion section will be presented in the format of lessons learned from the case.  Below the five important lessons learned from the women athletes in this study highlight the novel additions and the connections to the sport and performance psychology literature are discussed.

**5.5.1 Lessons Learned from the Collective Case about Self-compassion**

  **5.5.1.1 Self-compassion as a buffer.**

   As described in previous research (e.g., Bartholomew et al., 2011; Flett & Hewitt, 2014; Mosewich et al., 2013; Plateau et al., 2014; Reis et al., 2015) and within this study, athletes can face a variety of challenges as they strive toward their sport goals. Specifically, this study highlights that athletes often face multifaceted or complex challenges related to criticism and self-criticism in the context of athlete-identified important competitive events. The women athletes described that self-compassion helps to protect them from a variety of challenges in the context of their important competitive events, which is consistent with the conceptualization of self-compassion (Neff, 2003a, 2003b) and past research that highlights self-compassion as a protective or buffering resource (e.g., Mosewich et al., 2013; Mosewich et al., 2014; Reis, et al., 2015). Yet within this study the athletes expanded on how, when, and why they apply and adopt self-compassion and perceive it to be beneficial, which has substantially extended our understanding of the role of self-compassion in sport. Therefore, the first lesson learned from this collective case study was that self-compassion may act as a buffer to protect the women athletes against the challenges they face within the context of athlete-identified important competitions.

   Related to the athlete-identified important competitive events, self-compassion was described by the athletes in this study as a valuable perspective that they could adopt at various stages of their important competitive events (preparing, competing, and reflecting) to buffer against challenges they faced in their important sport contexts. Previous research has also identified self-compassion as a potential resource for managing women athlete's self-criticism, state rumination, and concern over mistakes (Mosewich et al., 2013) and to buffer against challenging and emotionally difficult experiences (Reis et al., 2015). Recent studies have also suggested that self-compassion plays a role in motivation and coping (Barczak & Eklund, 2018) and is compatible with other psychological or mental skills such as mental toughness (Wilson et al., 2019). Specifically, within this study, self-compassionate perspectives helped to buffer against feelings of isolation, physical suffering, and criticism, as well as to manage a variety of failure experiences. This lesson highlights that individual athletes adopt self-compassionate perspectives in a range of ways when preparing, competing, and reflecting to buffer against the challenges associated with their important competitive events. This lesson is important for

applied situations because it suggests that a standardized self-compassion application might not be as effective in sport as a more individualized approach when working with athletes.

### 5.5.1.2 Self-compassion as a facilitator.

Self-compassion is most often described as a buffer or a protective element during challenges or emotionally difficult times (e.g., Neff, 2003a, 2003b) or as a protective resource in sport contexts (e.g., Ferguson et al., 2014, 2015; Mosewich et al., 2013; Mosewich et al., 2014; Reis et al., 2015).  However, recently researchers have started to consider how self-compassion might also promote positive experiences in sport such as eudaimonic well-being, flourishing, intuitive eating, and body appreciation (e.g., Ferguson et al., 2014: Killham 2014; Study 2).  The athletes within the current study specifically described how self-compassion facilitated their success, goals, and achievement within their important competitive events through re-framing criticism and maintaining their determination in sport.  This facilitation through self-compassion is consistent with the more energized elements of self-compassion and experiences described in general populations (Adams & Leary, 2007; Breines & Chen, 2012; Germer & Neff, 2013; Neff et al., 2005).  Therefore, the second lesson learned from this case study was that self-compassion plays a role in actively facilitating women athletes' sport performance perceptions and well-being within the context of their self-identified important competitive events.

The women in the current study described their self-compassionate perspectives and applications as intentional and to help them reach their goals.  These perspectives are consistent with previous research regarding intrinsic and approach motivations in sport (e.g., Ntoumanis, 2001), rather than avoidance motivations such as fear of failure (e.g., Sager & Strober, 2009). Through self-compassion the women athletes were able to focus on moving toward their sport goals, rather than focus on avoiding potential failure.  Specifically, when applying self-compassion within the context of athlete-identified important competitive events, the women discussed that their drive to perform well and to their expectations was self-driven based on meaningfulness and personal satisfaction of participating in their sport.  Further, the athletes were typically focused on how they could succeed, improve, and excel rather than being motivated to avoid failure or other uncomfortable experiences.

### 5.5.1.3 The language of athlete self-compassion.

It is possible that within past research athletes were hesitant toward adopting self-compassion due to the way in which it has often been described, discussed, and introduced.

Typically, in qualitative research self-compassion is described in-depth to athletes before conversations begin (e.g., Ferguson et al., 2014; Killham, 2014). In these studies, self-compassion is described by presenting Neff's (2003) conceptualization and having athletes self-describe self-compassion (i.e., asking "what does self-compassion mean to you?"). Researchers within the Sport, Health, and Exercise Psychology Lab at the University of Saskatchewan have started supplementing descriptions of self-compassion with either Neff's or Leary's online introductory videos (https://www.youtube.com/watch?v=Tyl6YXp1Y6M and/or https://www.youtube.com/watch?v=tAifaBhh2xo). All of these options rely on descriptive language to introduce self-compassion that might be perceived as overly soft or gentle by athletes, or at least somewhat incommensurate with competitive sport contexts. For example, words such as: gentleness, kind, caring, emotionally positive, non-evaluative, and patience are commonly used when describing, discussing, and introducing self-compassion (e.g., Neff, 2003a, 2003b). Within the current study, athletes were asked to describe self-compassion in their own words and then clarifications were made through discussion and providing examples of self-compassion in sport rather than with a definition that might have restricted or led to a less personal application of self-compassion. Through this process the women athletes used different descriptive language to describe the components of self-compassion and their experiences of self-compassion within their important competitive events when compared to traditional academic descriptions. Therefore, the third lesson learned from this case study was that context-specific self-compassion language is meaningful and accessible for women athletes.

Within the current collective case study, the women used unique language to describe their self-compassionate experiences and the elements of self-compassion. While conceptually aligned with Neff's (2003a, 2003b) description, the women used different and context-specific language when describing self-compassion, self-kindness, common humanity, and mindfulness in their important competitive sport experiences. Common language the athletes used to describe self-kindness included "self-love" as a way to "comfort" themselves, and as a way to take the edge off of or smooth out the roughness of a comment, experience, thought, or feeling. The athletes described common humanity as a fostering sense of "connectedness" strengthened by genuine "support" and "trust" with other athletes that focusses on the shared suffering of athletic and sport experiences. The athletes described that through their connectedness with other athletes they were "able" to reach out and gain support when suffering. Finally, when discussing

mindfulness the athletes used language such as awareness, not getting caught up, and re-framing negative or challenging thoughts and experiences. The athletes were open to self-compassion in sport when using their own language, which highlights the need for athlete focused language to be further integrated into sport research and potentially further modified or newly developed athlete-specific measures (e.g., Killham et al., 2018; Study 1; Study 2).

**5.5.2 Lessons Learned from the Collective Case about Important Sport Contexts**

### 5.5.2.1 Describing athlete-identified important competitive events.

Previous research has highlighted that athletes can experience self-criticism, fear of failure, perfectionism, as well as reduced sleep quality when a competition or situation is perceived as important (e.g., Flett & Hewitt, 2014; Gardreau, & Verner-Fillion, 2012; Juliff, Halson, & Peiffer, 2015; Mosewich et al., 2013). These challenges, among others, pose threats to athletes' objective sport performances. Typically, there is a lack of consensus and description of what constitutes an important competitive event; however, playoffs, qualifying, and elimination competitive events have been described as important in the literature (e.g., Sharp, Hodge, & Danish, 2014). Previous research has also started to account for unique elements of competitive contexts such as pre-post competitions (Killham et al., 2018; Study 1) and regular season timing (Study 2). However, the reasons that the athletes in this study described why their competitive events were important ranged well beyond outcome focused sport contexts or high competition levels. Therefore, the fourth lesson from this study was that athlete-identified important competitive events are multifaceted and perceived as important for varied and often complex personally relevant reasons.

Athletes within this research described an assortment of physiological, performance outcome, psychological, social, and community reasons for why their competitive event was important (e.g., setting a new personal best, positive emotions, and team rivalries).[32] The athletes also described that the increased pressure they felt around their important competitive events heightened the expectations they held for themselves and perceived that others held for them, as well as increased the meaning they made during their important sport experiences. The athletes also talked about how the stressors and challenges they faced in their important competitive events varied depending on the perceived importance. While the connection between self-compassion, sport performance perceptions, and well-being related to athlete-

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[32] All reasons are described above in the preparing section of the holistic case description.

identified important competitive events has not been previously explored in the sport literature, the perceived importance of a competition mattered to athletes as they grappled with their specific important competitive events. Therefore, it is important for researchers to consider athlete-perceived important events and sport contexts to better understand why athletes believe their competition is important and to manage relevant challenges they might face within those important events.

### 5.5.2.2 Self-criticism in athlete-identified important competitive events.

One challenge that women athlete face in sport contexts is self-criticism (e.g., Frentz et al., 2019; Mosewich et al., 2013; Reis et al., 2015). Self-criticism has been related to body image disturbances, eating psychopathologies, perfectionism, fear of failure, and compulsive exercise in sport (e.g., Cash & Smolak, 2011; De Souza, et al., 2014; Flett & Hewitt, 2014; Gordon & LeBoff, 2015; Sundgot-Borgen, & Torstveit, 2010). These psychopathologies within sport contexts have the potential to negatively impact women athletes' sport performance and well-being (e.g., Gordon & LeBoff, 2015). However, women athletes have previously described in qualitative research studies that they rely on self-criticism because it is perceived at times as a key tool or resource that can help them pursue success in their sport (i.e., sport performance; Ferguson et al., 2014; Sutherland et al., 2014). The discrepancy between quantitative research and the perspectives of women athletes in previous qualitative research warranted further investigation.

While athletes have previously stated that self-criticism helps them achieve their performance-related sport goals (Ferguson et al., 2014; Sutherland et al., 2014), this perspective is not supported by the results of the current study, nor by my the first two quantitative studies in my research program that examined the role of self-criticism in sport performance perceptions (Killham et al., 2018; Study 1; Study 2). Importantly, the current study adds further depth, description, and insight highlighting that women athletes might perceive self-criticism as beneficial in their sport experiences as social norm or artifact of, or an expectation within, their sport contexts. This additional contextual description is supported by previous work that concluded there is a dark side to sport participation (e.g., Bartholomew et al., 2011; De Souza et al., 2014; Gordon & LeBoff, 2015). Therefore, the fifth lesson of the current study was that self-criticism does not promote women athletes' sport performance perceptions and well-being in the context of their important competitive events. This lesson is consistent with previous research

that categorizes self-criticism as maladaptive (e.g., Dunkley & Grilo, 2007; Gilbert & Procter, 2006; Neff, 2003a; Powers et al., 2004) and positive psychology perspectives that emphasize that well-being and positive self-attitudes can lead to individual self-actualization and flourishing (e.g., Hefferon & Boniwell, 2011). Further, the categorization of self-criticism as maladaptive by the athletes in this study highlights the need for resources for women athletes, coaches, and sport associations to directly manage self-criticism and its associated challenges in sport contexts.

### 5.5.3 Strengths

There were three primary strengths of this study. The first notable strength was that multiple one-on-one semi-structured interviews were conducted with each athlete, with the second interview being flexible to account for and adapt to each individual athlete's experiences. This multi interview approach was valuable to provide multiple opportunities to describe the processes related to their experiences of athlete-identified important competitive events. This design also allowed for collection and generation of both prospective and retrospective data that together represents the complex experience of sport and competition where athletes are often engaged in simultaneous looking forward and backward. The multi interview approach was taken to intentionally reduce psychological burden of the research, rather than having one long interview where participants could fatigue. Further, this multi interview design was ideal in accommodating individual time commitments. Many of the athletes described weekly schedules that rarely had more than a few hours of free or flexible time, and this design was more compatible with their schedules and did not occupy time that was allocated elsewhere (e.g., training, pre and rehabilitation, school, self-care). Moreover, this multi interview design did not add additional strain for athletes before they engaged in their important competitive events. Recognizing that athletes often have high competition expectations and a strong desire to succeed, this design was intentional to not take away or impede them in their important events.

The second strength of this study was the application of multiple analysis approaches and data representation techniques. Often within qualitative research multiple data types are suggested as a sign of quality and rigor (Creswell & Poth, 2018); however, in this study the design also implemented multiple analysis and representation techniques to more fully dissect the collected and generated data, address the research purpose and questions, and describe the collective case. This approach was valuable as the results reflect a rich, in-depth, and

conceptually relevant addition to the literature. If only the holistic case description or only the generated themes were presented the results would not be as clear or impactful.[33]

Finally, the third strength of this research was that the athletes' perceptions of importance were considered regarding their competitive events. Guided by a collective case study approach to inquiry, a tightly bounded case of women athletes was recruited to participate, where all athletes identified their competitive event as important as a key feature of the inclusion criteria. While this highly structured recruitment approach was at times challenging,[34] it led to a clearly bounded case where all athletes were reflected individually and collectively in the results and were considered as part of the collective case. This approach was valuable as one of the main lessons gleaned from this collective case study is that perceived importance of a competitive event is necessary to consider and describe in sport and performance research and this study provides a highly descriptive account that might assist future researchers when examining varied competitive contexts. Further, this approach provides a foundation for a novel area of sport research to consider athlete-identified importance, rather than assuming importance of competition based on playoffs, qualification events, or other "do or die" competitive situations. Understanding athletes' perceived importance of their competitive event added a level of descriptive depth and assisted in addressing the study research purpose and questions.

### 5.5.4 Limitations

The primary limitation of this study was that the women athletes did not actively engage in the member checking process. While all athletes were provided the opportunity to add to or modify their interview transcripts, no women made any changes and a couple even said that they did not review the documents but subsequently released the transcripts anyway. This limitation is not necessarily a limit of the study but a limit of a typically used strategy when seeking triangulation and rigor in qualitative research (Smith & McGannon, 2018). Anticipating challenges with disengaged member checking, both interviews purposefully included probing

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[33] Noting that to gain the skills necessary to conduct this multi analysis and representation approach I engaged in conferences, conference workshops, Social Sciences Research Laboratory workshops, and a variety of reading and methods research to be competent to successfully navigate this process. Further, it is important to note that while this approach might not work well with some philosophical assumptions, interpretive frameworks, or qualitative approaches, within the context of the current study this approach highlights the methodological congruence between my philosophical assumptions, interpretive framework, and application of a collective case study approach that seeks to provide a bounded in-depth description of a phenomena.

[34] There were women athletes who contacted me to participate but could not as they did not meet the inclusion criteria of the collective case study, which was a limiting factor for the final sample size of this study.

and confirming questions, athletes were asked to add any relevant but undiscussed information, and athletes were openly asked to add anything else at the end of each interview.  Further, in the second interview athletes were asked a series of confirmation type questions to make sure all information in the first interview was accurate and complete.  The confirmation questions followed stems such as: "can you remind me …", "when we met last week you mentioned that …", or "can you tell me more about …".  However, it is important to note that these approaches would have been further benefitted by athletes more actively engaging in member checking.  To manage challenges related to member checking, Smith and McGannon (2018) recommend a collaborative transcript review process; in future projects I will likely adopt this approach to increase engagement in the review process.  For example, in the future I would like to present participants with initial results to reflect on rather than (or in addition to) raw transcripts to generate interactive reflections.  Ideally, this process would be in person and take the form of an additional interview.

Another limitation of this study pertained to recruitment that changed the balance of the final collective case.  Originally the goal was to recruit athletes who participate in a range of team and individual and aesthetic and non-aesthetic sport types to maximize representation.  A range of competition outcomes was also desired to be able to compare the role of self-compassion across positive, neutral, and negative competitive and performance outcomes, again to maximize representation.  However, the majority of athletes that elected to participate were team non-aesthetic or individual non-aesthetic athletes and all athletes had a positive outcome in their important competitive events.  Due to this limitation the role of self-compassion was only explored and described within the context of positive outcomes, which impacts the transferability of the study results and further research will be necessary to describe the full range of competitive outcomes.

### 5.5.5 Implications for Application

While this research study is not based on intervention or clinical applications, the results do have potential implications for application of self-compassion in sport contexts for intervention or clinical purposes.  This study highlights that athlete's use self-compassion in their sport contexts in a wide range of ways (e.g., to focus, reflect, motivate, and excel) and for many different reasons (e.g., to re-frame criticism and keep them determined and focused) as they prepare, compete, and reflect.  This finding is important for future application as it highlights the

need for an individualistic approach to integrating self-compassion for athletes. Further, as the athletes in this study describe it is important that the applications of self-compassion actively and logically move athletes toward their intrinsic, mastery, and approach type goals. The need for an individualistic approach does potentially complicate the application process as the results of this study highlight that a one-size fits-all approach will not best support athletes. While some sport contexts might be better suited for an individualized approach than others, the results highlight that coaches and practitioners should effortfully apply individualized applications. However, designing and implementing individually tailored self-compassion interventions will likely be more easily received by and more effective for athletes than generalized approaches, as these plans will likely fit well with the needs, schedules, and profiles of each athlete. This suggestion is aligned with a recent position paper regarding self-compassion in sport (Mosewich, Ferguson, et al., 2019), and many psychological and counselling theories and practices that are currently practiced by psychologists and councilors (e.g., Corey, 2017; Joseph & Murphy, 2013; Sharp et al., 2014; Sue & Sue, 2016). Further, in addition to individual approaches, coaches and practitioners could also focus on increasing athletes' awareness of how their thoughts and beliefs about self-compassion are connected to the thoughts and beliefs of their teammates (Crozier, Mosewich, & Ferguson, 2019). This connectedness was described by athletes in this study as the perceived "us". Together, an individual and group approach to promoting self-compassion in sport might be most helpful in helping athletes adopt self-compassionate perspectives but to also assist in managing potential resistance to self-compassionate perspectives in team contexts.

**5.5.6 Future Directions**

Building on the findings of the current study it will be valuable to continue to explore and describe the role of self-compassion in athletes' sport performance perceptions and well-being, as the role of self-compassion might be impacted by competition type and outcome. Within this research only positive outcomes in athlete-identified important competitive events were explored, highlighting a gap in the literature. While there are many relevant future directions related to the current study, below three main areas for research are described. First, with the increased interest and focus on self-compassion in sport it will be important to intentionally examine cases where self-compassion has not been facilitative, or it has been perceived as ineffective to gain a deeper understanding of the resistance toward self-compassion. Research in this area could build upon examples provided by athletes who describe self-compassion as only

sometimes helpful in sport (Wilson et al., 2019). This next step is important to explore if or what the challenges of applying self-compassion in sport are, through qualitative and quantitative approaches, so that preventative and managing strategies can be identified and developed. Second, following an examination of the potential and perceived pitfalls of self-compassion, developing a variety of sport- and athlete-specific self-compassion interventions should be designed, implemented, and compared. A starting point for this direction would be building on and modifying the brief self-compassion intervention that was conducted with self-critical women athletes (Mosewich et al., 2013). This future direction is necessary as athletes, coaches, and sport associations are often looking for "proof" that self-compassion would add value for athletes. Therefore, applying a grounded theory approach (Creswell & Poth, 2018), this future direction is aimed at generating evidence-based self-compassion intervention(s) that can be applied in sport contexts to identify if self-compassion can be used to increase athlete performance. Third, more longitudinal research designs are needed that seek to understand how athletes engage in the process of adopting self-compassion into their competitive sport contexts. While there are initial descriptions of how athletes' transition from self-criticism to self-compassion (Frentz et al., 2019), much more information is required to fully describe the process. These longitudinal studies would benefit from a mixed methods approach to see how values and perspectives change or remain the same over time (Sparkes, 2015). This future direction would add to our understanding of when self-compassion might be most beneficial for individual athletes.

**5.5.7 Conclusions**

While in the past women athletes have expressed hesitation toward adopting self-compassion in sport contexts (Ferguson et al., 2014; Sutherland et al., 2014), the results of the current study illuminate a different athlete perspective. From their perspective, the women in the current study were open to adopting self-compassion related to their identified important competitive events when it facilitated their goals, their performance, and their ability to excel in sport. This study, in combination with other quantitative research (Killham et al., 2018; Study 1; Study 2), highlights that the role of self-compassion in women athletes sport performance perceptions is complex and that self-compassion can be applied by athletes during the preparing, competing, and reflecting stages during athlete-identified important competitive events to manage challenges and to reach their athletic potentials.

# CHAPTER 6:

## General Dissertation Discussion

## 6.1 Dissertation Overview and Progression

The overall purpose of my research program was to *explore and describe the role of self-compassion in women athletes' sport performance perceptions, eudaimonic well-being, and body-related well-being over a competitive sport season*. Further, the guiding research question of my dissertation program of research was: *what is the role of self-compassion in women athletes' sport performance perceptions and well-being throughout a competitive sport season?* Working toward addressing the overall purpose and question, a multiphase sequential explanatory mixed methods design was applied for the overall design of my program of research (quan → QUAN → QUAL; Creswell & Plano Clark, 2011, 2018). Specifically, quantitative and qualitative research was conducted, and each study was designed to build upon and help further explain the findings of the previous study while also attempting to add depth and breadth in regard to the overall research purpose and question.

The first study in my research focused on identifying if there was a relationship between self-compassion and sport performance perceptions. Within Study 1, women athletes completed a pre- and a post-competition survey, which included athlete-specific measures of self-compassion, sport performance perceptions, and self-criticism (the latter at Time 1 only). Study 1 results highlight that self-compassion is related to sport performance perceptions (Killham et al., 208; Study 1), which is contrary to past qualitative research where athletes were resistant to adopting self-compassion in sport out of concern that self-compassion would inhibit their performance or lead to complacency (Ferguson et al., 2014; Sutherland, 2014). Further, Study 1 illuminated that self-compassion contributed beyond self-criticism, and that self-criticism was not related to or at times was negatively related to sport performance perceptions (Killham et al., 2018; Study 1).

Building on Study 1, Study 2 focused on the relationships between and stability of self-compassion, sport performance perceptions, and well-being over the regular competitive season. Within Study 2 the athletes completed a series of repeated questionnaires (17 timepoints distributed across the regular competitive season). This multilevel longitudinal measurement burst design collected data regarding women athletes' self-attitudes (self-compassion, self-esteem, and self-criticism), sport performance perceptions, eudaimonic well-being, and body related well-being. The key findings from Study 2 include: (a) that self-compassion was typically related to sport performance perceptions and measures of well-being within timepoints

across the sport season, (b) that self-criticism was typically negatively related or unrelated to sport performance perceptions and well-being within timepoints across the sport season, (c) that self-compassion typically contributed unique variance beyond self-criticism in athletes' sport performance perceptions and well-being within timepoints across the sport season, (d) that self-compassion is stable over time at the primary and secondary measurement levels, and (e) that overall sport performance perceptions, select well-being indices, and self-criticism declined over the competitive season. These key findings emphasize that self-compassion is related to and plays a role in women athletes sport performance perceptions and well-being across the regular competitive season.

The third and final study of my program adopted a qualitative approach to inquiry to add depth and description to my overall research purpose and question. Through the application of a collective case study approach women athletes' experiences, perspectives, and voices were emphasized in my research program. The results of Study 3 were presented through a holistic case description and generated themes. Within Study 3 the athletes described that self-compassion plays a role in their sport performance perceptions and well-being when preparing, competing, and reflecting through perspectives that highlight their desire to continue to excel, re-framing criticism, and maintaining a determined approach in their important competitive events.

While each study was separate and independently contributes to the literature, the following sections address the contributions of the three studies together. Specifically, the following sections will highlight (a) interpretations across the three studies, (b) connections between my research program with other research, and (c) how this program of research contributes to the literature in five distinct ways.

## 6.2 Integrated Dissertation Interpretations and Contributions to the Literature

### 6.2.1 The role of self-compassion in women athletes' sport performance perceptions.

Across the three studies conducted the role of self-compassion in women athletes' sport performance perceptions was examined, explored, and described. This examination was warranted as previous qualitative research highlighted that women athletes were resistant to the value of self-compassion in facilitating their sport goals and the belief that self-criticism is beneficial to their sport performance (Ferguson et al., 2014; Sutherland et al., 2014). The relationship between self-compassion and sport performance perceptions was assessed and the results of the studies highlighted that self-compassion is related to sport performance perceptions

quantitatively and qualitatively (Killham et al., 2018; Study 1; Study 2; Study 3), that the relationships between self-compassion and sport performance perceptions are consistent across the competitive season (Study 2), and that women athletes identified energized self-compassion perspectives as an important facilitator in their pursuit of excellence (Study3). The findings across the three studies are consistent with recent research that identifies self-compassion as a moderator between subjective performance appraisals and coping and motivation in competitive swimmers (Barczak & Eklund, 2018), with research that identified the relationships between self-compassion and physiological responses to recalled sport failure (Ceccarelli, Giuliano, Glazebrook, & Strachan, 2019), and with research that connects body self-compassion with reaching one's potential in sport (Eke et al., 2019). Moreover, elite women athletes have also identified self-compassion as necessary for their sport performance through perseverance, being in the moment, keeping perspective, and preparing for competition, which is highly aligned with the holistic case description and themes generated in Study 3. It is possible that self-compassion promotes sport performance perceptions through increased accuracy in self-evaluations of performance (Leary et al., 2007). Additionally, self-compassion might promote sport performance through fostering mental toughness to assist athletes persevere when they are faced with challenging situations in sport (Wilson et al., 2019). Within sport, accurate self-evaluation (Leary et al., 2007) and mental toughness (Wilson et al., 2019) promoted by self-compassion may foster mastery and approach oriented motivations that drive women athletes to continue to excel as noted in Study 3.

Conversely, in this research program the role of self-criticism was also explored and was found to typically be negatively related to sport performance perceptions cross-sectionally and at various times across the regular season (Study 1; Study 2). Further, within Study 3, the women athletes spoke directly about how self-criticism was expected of them within sport, but that it is was not helpful and often took away from their ability to learn from their mistakes, cope with harsh and critical commentary, and reach their performance-specific goals. These findings are particularly important when considering that self-attitudes might impact sport performance perceptions, as these propositions are counter to past qualitative research (Ferguson et al., 2014; Sutherland et al., 2014) and counter to sport norms regarding the pervasiveness of and value of self-criticism and judgement (Mosewich, Ferguson, et al., 2019; Study 3). However, the complexity of self-criticism in sport is emphasized across this research with having no

151

relationships or negative relationships with sport performance perceptions (Study1; Study 2), while also being described as expected within sport contexts to promote performance (Study3). Athletes described that self-awareness and acceptance allowed them to shift from self-critical to self-compassionate perspectives in high performance sport (Frentz et al., 2019). The role of self-criticism was also described as a challenge women face in elite sport and in recent qualitative research women athletes described a "zipper-effect" between self-compassion and mental toughness, which emphasized that self-compassion and mental toughness each contribute to "optimal mind sets for coping with sport-related difficulty and achieving success" (Wilson et al., 2019, p.68). Together the findings from Study 1, Study 2, and Study 3 are a significant and novel contribution to the literature and emphasize that self-compassion may facilitate, while self-criticism is unrelated to or may thwart, women athletes' sport performance perceptions. This research program extends the current literature by describing the role of self-compassion and the components of self-compassion in sport performance perceptions over time and in a variety of competitive contexts. Further, while mindfulness and self-awareness have previously been identified as related to elements of performance (Frentz et al., 2019; Leary et al., 2007; Wilson et al., 2019), this research also highlights the importance of self-kindness and common humanity in women athletes sport performance perceptions within a variety of competitive sport contexts.

### 6.2.2 The role of self-compassion in women athletes' eudaimonic well-being.

Eudaimonic well-being was one type of well-being that was focused on in this research. Researchers have previously identified that self-compassion is related to eudaimonic well-being for women athletes (Ferguson et al., 2014, 2015: Lundqvist & Sandin, 2014). Specifically, my research replicates findings that self-compassion is related to proxy measures of eudaimonic well-being including: autonomy, meaning, vitality, and body appreciation (Ferguson et al., 2015; Study 2; Study 3), while also expanding the examination of the relationship between self-compassion and eudaimonic well-being.

Within Study 2 the same proxy measures for eudaimonic well-being reported in Ferguson et al. (2015) and additional proxy measures (i.e., the single item in Daily Measurement Burst) were examined over the regular sport season. Study 2 replicated and expanded on past research findings that self-compassion plays a role in facilitating women athletes' eudaimonic well-being, adding consistency and further description to the literature. The findings of Study 2 highlighted that self-compassion was related to eudaimonic well-being proxy measures within timepoints

152

over the competitive season including: autonomy and relatedness, mastery, meaning, vitality, and a single item measure of eudaimonic well-being. Further, within Study 2 self-compassion contributed beyond self-criticism in proxy measures of women athletes' eudaimonic well-being including: autonomy and relatedness, mastery, meaning, vitality, and a single item measure of eudaimonic well-being within timepoints over the competitive season. While in Study 3 the women athletes identified that self-compassion facilitated their well-being (e.g., autonomy, mastery, competence, and connectedness) during the preparing, competing, and reflecting stages of their important competitive events. Further expanding on previous eudaimonic well-being research within Study 3 discussions of eudaimonic well-being in sport developed based on the athletes' lived experiences of self-identified important competitive events. Study 3 also highlighted that self-compassionate perspectives fostered adaptive ways to self-regulate during important events, which is consistent with recent research that identifies that self-compassion promotes adaptive appraisals and coping in sport (Mosewich, Sabiston, Kowalski, Gaudreau, & Crocker, 2019), that body self-compassion fosters aspects of psychological well-being such as emotion regulation (Eke et al., 2019), and that feelings of authentic pride are related to determined perspectives such as grit within sport contexts (Gilchrist et al., 2018). Although self-compassion was not directly considered in combination with grit and authentic pride in the recent research by Gilchrist and colleagues (2018), it is possible that promoting self-compassion may foster authentic pride and grit through the determined approach described by athletes in Study 3, and in turn eudaimonic well-being for athletes.

In addition to self-compassion being related to and accounting for variance beyond self-criticism in measures of eudaimonic well-being, within Study 2 and Study 3 self-criticism was identified and perceived as negatively related to women athletes' eudaimonic well-being. Specifically, within Study 2, self-criticism was negatively related to proxy measures of eudaimonic well-being including: autonomy and relatedness, mastery, vitality, and the single item measure of eudaimonic well-being. These findings advance the literature through adding clear description that self-criticism may thwart eudaimonic well-being in sport. Further, in Study 3, the women athletes described how self-criticism was a challenge for their eudaimonic well-being related to their important competitive events (e.g., reduced perceived control, emotional distress, isolation, and impaired focus). Together the findings from this research highlight that self-compassion plays a facilitating role in, and self-criticism antagonizes or threatens, women

153

athletes' eudaimonic well-being over the regular competitive season and related to athlete-identified important competitive events. These findings, in addition to a recent position paper (Mosewich, Ferguson et al., 2019), support that self-critical athletes might be a noted population who could benefit from self-compassion interventions, as previously done in a brief intervention (Mosewich et al., 2013), to promote eudaimonic well-being in sport.

### 6.2.3 The role of self-compassion in women athletes' body-related well-being.

In addition to eudaimonic well-being, body-related well-being was studied in my research program. Specifically, within Study 2 and Study 3 the role of self-compassion and self-criticism in women athletes' body-related well-being was examined and explored through the lens of positive psychology, partly because within sport contexts research tends to focus on the pathological aspects of the body (e.g., Bartholomew et al., 2011; Gordon & LeBouff, 2015; Mountjoy et al., 2014; Nattiv et al., 2007; Reardon et al., 2019). Similar to past research (Ferguson et al., 2015; Killham, 2014), within this research program self-compassion was related to (Study 2 and Study 3), and contributed beyond self-criticism (Study 2). Further, self-criticism was negatively related to (Study 2 and Study 3) women athletes' body-related well-being. The findings from both Study 2 and Study 3 are consistent with more recent qualitative research that describes the value of body self-compassion in body-related and emotional well-being for women in competitive sport contexts (Eke et al., 2019). Specifically, body self-compassion was described as promoting a positive and accepting self-perspective for young women athletes that enhanced emotional well-being without sacrificing their sport goals (Eke et al., 2019).

Body-related well-being was examined and explored through sport relevant constructs including body appreciation, intuitive eating, compulsive exercise, and a single item measure of body-related well-being in Study 2, as well as through dynamic conversations in Study 3 where athletes described the importance of their body-related well-being within sport. While past research has shown that self-compassion is related to women athletes' body appreciation (Ferguson et al., 2015, Killham, 2014), intuitive eating (Killham, 2014), and compulsive exercise (Killham, 2014), the majority of body-related well-being in sport research has focused on pathology alone (e.g., Bartholomew et al., 2011; Gordon & LeBouff, 2015; Mountjoy et al., 2014; Nattiv et al., 2007; Reardon et al., 2019) and thus this research program contributes to an important gap in the literature. The current studies have replicated and added novel detail regarding the role of self-compassion in body related well-being, which has been identified as an

area for further examination (Sabiston, Pila, Vani, & Thogersen-Ntoumani, 2019). Specifically across Study 2 and Study 3 the results highlight that self-compassion protects against common challenges to body related well-being such as compulsive exercise and self-criticism (which are commonly associated with body and eating psychopathologies; e.g., de Bruin, et al., 2011; Gordon & LeBoff, 2015; Montjoy et al., 2014; Reardon et al., 2019) and that compassion plays a role in facilitating women athletes' adaptive body and eating attitudes and behaviours within a variety of competitive sport contexts such as over the regular season and within athlete-identified important competitive events. Together these novel findings highlight that self-compassion could be a valuable perspective to adopt to promote body-related well-being for women athletes. Further, similar to past research (Killham, 2014), within this research self-criticism was shown to be negatively related to indicators of body-related well-being (i.e., body appreciation, intuitive eating, and compulsive exercise), but also adds novel understand that the relationship between self-compassion and body-related well-being is consistent over the competitive season (Study 2) and perceived to exist during athlete-identified important competitive events (Study 3). Together, the findings from this research program add to the literature by highlighting that self-compassion plays a facilitating role in women athletes' body-related well-being over the regular competitive season and in the context of important competitive events.

**6.2.4 The role of contextual sport season factors in women athletes' self-compassion.**

An intentional piece of my overall research purpose and question pertained to competitive season timing, varied competitive environments, and levels of perceived competition importance. This investigation focused on the potential impact of season timing and perceived importance on women athletes' self-compassion, sport performance perceptions, eudaimonic well-being, and body-related well-being. Season timing and perceived importance have the potential to increase pressure, expectations, and evaluations for women athletes due to contextual and competitive factors (e.g., Crocker, 2016). This sentiment, that some competitions are more important to some athletes than others, was discussed in Study 3 and that the perceived importance of specific competitions increased the pressure they felt to excel and meet the expectations of others and themselves.

To begin to describe the role of competitive season factors in women athletes' self-compassion, the competitive contexts were limited to the regular competitive season within Study 1 and Study 2. These two studies had comparable means and standard deviations for

155

women athletes' self-compassion (measured by the SCS-AV) with past studies that measured women athletes' self-compassion with Neff's (2003a) original, non-contextual Self-Compassion Scale (e.g., Ferguson et al., 2014; Killham, 2014; Mosewich et al., 2013; Reis et al., 2015). The consistency between samples highlights that the women in Study 1 and 2 were comparable to previous athlete samples. However, while the descriptive statistics were consistent with past samples, the data and subsequent results were contextualized to account for unique factors within the sport context and across the regular season. Additional contextual detail promoted homogeneity within the Study 1 and 2 samples, meaning that the presented results are not likely due to alternative possible explanations related to season timing. Further, a key finding from my research was that Study 1 and 2 provide evidence to suggest that self-compassion is stable over time, which has not been previously assessed or explicitly examined in sport contexts. Specifically, in Study 1 the self-compassion test-retest correlation was very high ($r = .81$, $p < .001$) around one regular season competition. Further, within Study 2 across the entire regular season, the latent growth model results highlighted that self-compassion was stable over time for both the SCS-AV and SCS-AV (SF). However, within Study 2, there was apparent fluctuation of the SCS-AV (SI) during the mid-season measurement burst. It is possible that this fluctuation is an artifact of a single item measure, lower $N$s per daily measurement burst, the impact of rest and recovery, training, and competition activities on any given day, or fluctuations that are impacted by daily emotions or events. The multiple possible explanations for the fluctuation of the SCS-AV (SI) highlights that further investigation is required to assess potential alternative explanation of the SCS-AV (SI) results. Additionally, athletes in Study 3 described how self-compassion can ebb and flow in the preparing, competing, and reflecting phases of competition but that their strategies tended to develop and remain consistent and integrated into their routines. Previous research has identified that self-compassion can promote more accurate self-evaluations on performance tasks (Leary et al., 2007), which may help to explain why athletes in Study 3 were able to identify the good and the bad in their performance perceptions through self-compassionate perspectives and practices as they worked toward achieving their goals and excellence. Further, in a recent qualitative study, elite women athletes noted that there were times to be compassionate and times to be critical and that this depended on the sport context (Wilson et al., 2019). This research specifically described that mindfulness and self-compassion were important perspectives to adopt for athletes to manage a range of stressful sport events. A

substantial novel contribution to the literature across the three studies is that while self-compassion strategies can change depending on the individual and the sport context, the individual self-compassion levels remain stable over the competitive season without intervention or training.

### 6.2.5 The importance of sport specific self-compassion language.

The importance of population specific language is most often emphasized within the psychometric and measurement literature (e.g., Furr & Bacharach, 2014). To the best of my knowledge, prior to my dissertation research self-compassion was measured and discussed with non-contextual language even within sport contexts and samples. The application of general population measures within sport contexts increases the risk for reduced precision and accuracy when reporting findings (e.g., Furr & Bacharach, 2014). Therefore, one of the most important contributions of this program of research was the modification and implementation of self-compassion athlete-specific measures (full and short form; Study 1 and 2) and the exploration of the language athletes use when describing their self-compassion experiences and perspectives in sport (Study 3). Across all three studies, language that was contextually and experientially relevant for athletes was adopted based on the potential for self-compassion to be domain-specific. Within Study 1 and Study 2 the SCS-AV was applied to focus on sport contexts, and the SCS-AV (SF) and SCS-AV (SI) measures were also used in Study 2. Importantly, within this research program the modified self-compassion scales had comparable internal consistency reliabilities to the non-contextual measure and were stable over time, which together suggests that the athlete versions are appropriate for sport research when considering domain specific self-compassion. Further, the athletes within Study 3 spoke about self-compassion and its subcomponents in unique or novel ways compared to researchers and the scientific community. Study 3 results highlighted that women athletes adopted language that was consistent with the kind, connected, and clearsighted idea of self-compassion and the subcomponents without relying on the exact words and common phrases as described by Neff (2003a, 2003b) and adopted in the self-compassion literature. The more active language used by athletes to describe self-compassion, such as comfort, connectedness, and trust (Study 3) is consistent with Neff's more recent discourse regarding fierce self-compassion (www.self-compassion.org). Within Neff's recent commentary more active commentary around concepts of the value of anger, resolve, and confidence as elements of fierce self-compassion for women, "to temper their

sweetness with steel". However, this commentary has not yet been published and therefore it remains unknown if the shift in language has an impact on measurement or individual conceptual interpretation. This adoption of active language is particularly important to consider as it may be fruitful to further modify or adapt self-compassion language in measures and conversations with athletes to assist with making self-compassion concepts meaningful and increasing precision when presenting domain-specific research conclusions (e.g., Furr & Bacharach, 2014).

**6.3 Overall Strengths**

There are at least four main strengths of my research program. The first strength was the application of methodological congruence in my overall mixed methods research program of study that resulted in alignment within and between studies. As discussed in Chapter 2, methodological congruence is not often discussed in detail in quantitative or mixed methods research designs but is often associated with high quality and rigorous qualitative research (Creswell & Poth, 2018). In the case of my research program, applying methodological congruence adds clarity to the research approaches and processes applied. Applying methodological congruence to the full research program also assisted in preventing challenges such as disconnection between studies that can be difficult to reconcile (Creswell & Plano Clark, 2018; Creswell & Poth, 2018). Due to the increasing promotion of mixed methods research in sport (Sparkes, 2015) it has become essential to adopt approaches and strategies that promote quality and rigor. Further, the application of congruent methods across my dissertation, through the lens of pragmatism, provides an example of how researchers might apply qualitative practices within mixed methods designs in sport psychology.

The second strength of my overall research program was the application of a mixed methods design to address the overall research purpose and question. Mixed methods have been promoted and are starting to be more readily applied in sport (Ferguson et al., 2014; Killham, 2014; Sparkes, 2015). This growth is in part a result of a pragmatic research framework that seeks to apply the best suited methods to answer research questions regardless of their paradigm of origin. A question-driven mixed methods approach allowed for both depth and breadth when regarding the research purpose and question posed in my research program. While there were challenges associated with gaining the skills and training to conduct the three distinct studies with highly varied approaches, methods, and analyses; great effort and care was placed on

building a mentorship network to facilitate the completion of a high quality, rich, fully integrated, and multifaceted mixed methods research program.

Another main strength of my program was the application of varied designs and approaches across the three studies that account for the competitive contexts and timing of competitions that women athletes are typically exposed to in sport (i.e., season timing and perceived importance).  Researchers have identified that sport contexts and perceived importance can impact athletes' physical heath and sleep (e.g., Gardreau, & Verner-Fillion, 2012; Juliff et al., 2015; Mountjoy et al., 2019).  However, previous research has not specifically worked toward understanding how season timing and perceived importance can contribute to variables such as self-compassion, sport performance perceptions, and well-being.  My dissertation represents a large contribution to the literature on the stability/variability of these variables over time and in sport contexts that vary in perceived importance because multiple perspectives and approaches were applied.  Across the research process the varied approaches led to a highly detailed description of self-compassion, sport performance perceptions, and well-being in sport, which will likely be essential when deciding how and when to apply self-compassion to increase perceived sport performance and well-being.

The fourth strength of my research was applying sport and context specific language in self-compassion research with women athletes.  While it has not been concluded if self-compassion is a general or domain specific phenomenon (or both) there is substantial evidence that supports that women athletes are different from women in general (e.g., Varnes, Stellefson, Janelle, Dorman, Dodd & Miller, 2013) and that sport can be considered a unique context and at times is considered a culture (e.g., Crossman, 2008).  Applying salient and focused language in the two measures (Study 1 and 2) and interviews (participant driven language in Study 3) helped to ensure that the athletes' responses on questionnaires and discussions during interviews were related to their sport experiences rather than in general.  In addition, several other athlete specific measures (i.e., for eudaimonic well-being, compulsive exercise, and self-criticism) were adopted throughout to further add to the precision and accuracy of the research findings and conclusions across the studies.

## 6.4 Overall Limitations

While many limitations and challenges were prevented through the application of methodological congruence and intentional designs, this program of research is not without

limitations.  Three limitations of the overall research program are noteworthy.  The first two limitations were related to participant recruitment.  Even though the three studies were endorsed by Huskie Athletics and Saskatchewan Sport Inc., and both groups helped to facilitate participant recruitment, I was unable to reach my target sample size and sport type balance within each of the three studies.  Therefore, as a result of smaller samples than desired, the first limitation of my research was the imbalance of sport representation within and across all three studies. Specifically, aesthetic and individual sport athletes were underrepresented compared to non-aesthetic and team sport athletes in all three studies.  This is a limitation as the representativeness and transferability of the study findings lean heavily toward athletes who participate in non-aesthetic team sports, rather than to women athletes more generally.  This limitation is likely a byproduct of sampling from women athletes in Saskatchewan and the typical proportions of sport type participation within Saskatchewan and Canada.  For example, this imbalance could result from larger teams, access to high school and adult sport opportunities, and University level sport in Canada that are more commonly team and non-aesthetic sport types.  The second limitation related to participant recruitment and the unequal balance of sport types represented in all three studies was that comparisons between the four sport types (i.e., team, individual, aesthetic, and non-aesthetic sports) was not possible as originally planned.  This is a limitation to the research as aesthetic and endurance (typically individual) sport types are often focused on aspects of body-related well-being, eating psychopathologies, and compulsive exercise behaviours, and women within these contexts are considered to be more at risk for psychopathologies (e.g., Haase, 2009; Gordon & LeBouff, 2015).  Therefore, it is possible that an important potentially at-risk sub-group of women athletes was not represented in my research. In future research it will be important to work to recruit athletes from all sport types.  Strategies that could be applied to increase participation from all sport types could be expanding the age range to allow for more participants from earlier peaking sports such as gymnastics, recruiting at a national level to reach specific sports that are underrepresented within Saskatchewan, or through application of snowball sampling methods (Kowalski, McHugh, Sabiston, & Ferguson, 2018).

The third limitation of my research program was that all parts of athletes' seasons were not considered.  Part of the purpose of this dissertation was to consider variables across a competitive sport season; however, the off-season was not considered, and post-season and play-

offs were only considered within Study 3 for a few of the women.  This means that the results and the findings from my research will only be transferable or generalizable to the regular season or athlete-identified important competitive events rather than the entire competitive season.  It is worth noting that observing self-compassion, self-criticism, sport performance perceptions, eudaimonic well-being, and body-related well-being during the off-season is important as self-compassion training may be best suited for the off-season when athletes have more time and flexibility in their schedules.

**6.5 Overall Implications for Application**

Adopting self-compassionate perspectives and activities have been shown to promote well-being in general populations (e.g., Bulth & Blanton, 2013), clinical populations (e.g., Candea & Szentagotai-Tatar, 2018; Ferreira et al., 2013), and to reduce self-criticism, rumination, and concern over mistakes for women athletes (Mosewich et al., 2013).  Because of previous success with self-compassion interventions and the movement toward promoting self-compassion in sport (Mosewich, Ferguson et al., 2019), it is important to offer specific implications for application from the current research studies.  While the current research program did not explicitly work to deliver information or interventions to athletes when researching self-compassion in sport, the primary implications for future application by mental skills consultants and other professionals in sport are: (a) that women athletes' self-compassion is stable over the regular season; (b) that women athletes' self-compassion is typically related to sport performance and well-being; and, (c) to some extent self-compassion is already being applied by some athletes.  Moving forward it will be important for skilled professionals to help maximize athletes' sport performance and well-being through individualized self-compassion training (Mosewich, Ferguson, et al., 2019) and group approaches (Crozier et al., 2019).  The individualized training for athletes should specifically account for the athletes' sport contexts, skills they already apply, and their baseline self-compassion levels in a fully integrated approach, and highlight that self-compassion may compliment other psychological constructs such as coping (Mosewich, Sabiston et al., 2019b) and mental toughness (Wilson et al., 2019).  Therefore, future self-compassion applications and interventions should adopt an athlete-centered approach and individualized- or group- or context-specific delivery to maximize the benefits of self-compassion.

**6.6 Overall Future Research Directions**

In addition to the future directions already presented within each study, there are five additional directions for future research. The first future direction is to consider self-compassion language in a range of sport contexts. Across all three studies the language of self-compassion was modified to align with athletes and sport contexts. However, following Study 3 it became evident that the women athletes used unique language to describe their self-compassionate experiences. Therefore, future research could continue to explore the language of self-compassion in sport. Applying appropriate, relevant context specific language would be beneficial for sport consultants, measurement, and interventions to increase construct salience and meaningful construct measurement through scales and interventions. To address this future direction a series of think or talk-aloud studies might be an avenue to modify the SCS-AV to align with athletes' preferred language and meanings of self-compassion in sport (Eccles & Arsal, 2017).

The second area for further exploration is how fear of self-compassion[35] may impact an individual's openness to self-compassion in sport. The three studies clearly highlight the value of self-compassion related to sport performance perceptions and well-being. Therefore, it will be important to explore the construct of fear of self-compassion to better understand how and why athletes at times have been resistant or hesitant toward adopting self-compassion in sport (i.e., Ferguson et al., 2014; Sutherland et al., 2014) and why at other times athletes embrace the value of self-compassion in sport (Study 3). While fear of self-compassion has been related to self-criticism (Gilbert, McEwan, Matos, & Rivis, 2011), a better understanding of why athletes resist or embrace self-compassion could be beneficial for developing applications and interventions that will have a lasting change or impact for athletes. To explore why athletes may resist self-compassion, an immersed ethnographic approach that allows for in the moment reflections, discussion, and observations with athletes could be beneficial for teasing apart why athletes – as individuals and/or as groups – resist self-compassion and lean on self-criticism in a variety of sport contexts.

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[35] Fear of self-compassion has been described as fear of positive emotions that are related to compassion where an individual avoids self-compassion for a variety of fear-related reasons. These fears often are related to feelings of being undeserving of compassion, perceived weakness, discomfort with the unfamiliar, and unresolved grief, shame, or loneliness (Gilbert, McEwan, Matos, & Rivis, 2011).

The third future research direction is consideration of the role of self-compassion on physiological health, in addition to psychological well-being. Women athletes' physical and psychological selves are intertwined (Harter, 2015), and sport participation can be described as an embodied experience (e.g., Mahlo & Tiggemann, 2016). An initial study highlights that self-compassion plays a role in managing physiological responses to failure in sport (Ceccarelli et al., 2019). Specifically, this research considered the role of self-compassion in athletes' physiological responses to failure in sport (measured by multi-modal biofeedback including heart rate variability and parasympathetic nervous system activity). The results of this research highlight that self-compassion plays a role in both psychological and physiological responses to sport failure in a laboratory setting (Ceccarelli et al., 2019). However, it remains unknown why self-compassion contributes to adaptive physiological responses to failure or if self-compassion plays a role in other physiological indexes of health. Further, in addition to managing physiological states, the International Olympic Committee stated in their 2019 consensus statement that "mental health cannot be separated from physical health" (Reardon et al., 2019, p. 667). However, very little is known about the connections between self-compassion and physiological well-being in sport. Therefore, moving forward it will be important to begin to consider health and well-being holistically. For example, issues related to the Female Athlete Triad are often subdivided into psychosocial and physical categories of research, meaning that this research area has a lot of room to further the description of issues from a whole person perspective. A potential future study could apply mixed methods approach to examine and explore the intersection between physical health and psychological well-being in women athletes' experiences of menstrual dysfunction associated with the Female Athlete Triad. This future direction has the potential to connect two established areas of research and to in turn build a more in-depth understanding of the embodied sport experience. The results from this line of research might better inform some of the missing details identified by Mosewich, Ferguson et al., (2019) to apply in the development of self-compassion resources and interventions for athletes as they recover, return to sport, and work toward building their capacity as athletes.

The fourth future research direction stemming from the current research program is to further explore and examine women athletes' injury experiences. Injury has been identified as a challenge that athletes face in sport contexts that can be very difficult (e.g., Mosewich et al., 2014; Trainor, 2016). Given that my research suggests that self-compassion can buffer and

facilitate sport performance perceptions and well-being, it is possible that self-compassion might be valuable in managing the challenges of injury experiences and facilitating active engagement in recovery activities that help athletes get back to training and competition faster while minimizing psychological and emotional challenges related to re-entry to sport following their injury.  For example applying a long-term qualitative study that explores the role of self-compassion across various stages of injury (e.g., becoming injured – pre-diagnosis – rehabilitation – returning to training – returning to competition), may be informative and help to clearly describe specific situations where athletes benefited from self-compassion to recover and return to sport successfully.  This future direction could help researchers and practitioners understand when, why, and how self-compassion might be applied with injured athletes to promote their positive return to sport, which reflects the individual approach that has been promoted for self-compassion application (Mosewich, Ferguson et al., 2019).

The fifth future direction identified based on the current research is an in-depth consideration of self-compassion, sport performance perceptions, and well-being within various sport contexts and competitive levels.  The experience of many psychosocial variables has been described as varied between sport contexts, such as body image within aesthetic and non-aesthetic sport contexts (e.g., Reina, Monsma, Dumas, & Gay, 2019), and recently described as relevant to self-compassion in team sport settings as athletes who perceive their teammates as more self-compassionate score higher on the self-compassion scale (Crozier et al., 2019).  However, it is possible that sport contexts are influenced by both sport type (specific sports and sport categories such as team-individual) and competition levels.  This future direction is particularly relevant to better understanding how context plays a role in self-compassion, sport performance perceptions, and well-being.  Differences and similarities across sport contexts may have implications for how to best approach applying self-compassion from an individual athlete approach, as promoted by Mosewich, Ferguson, et al. (2019).

**6.7 Dissertation Conclusions**

The overall results of my research program of research highlight that both self-compassion and self-criticism play a role in women athletes sport performance perceptions, eudaimonic well-being, and body-related well-being.  Specifically, the results of the three studies show that self-compassion plays a *facilitative role* in women athletes' sport performance perceptions and well-being, while self-criticism can play a *destructive role* in women athletes'

sport performance perceptions and well-being.  This research also illuminated that self-compassion is described as an active or intentional experience for women athletes in competitive contexts that was related to and perceived as important for their performance perceptions and their pursuit of excellence.  The results of my studies together highlight that self-compassion is a valuable perspective or resource for athletes as they work toward reaching their goals and potential in sport.  The primary final message of my dissertation research is that self-compassion plays a facilitative role, accounts for unique variance beyond self-criticism, is stable over time, and is perceived as relevant by women athletes in promoting and facilitating their sport performance perceptions and well-being across their competitive seasons.

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# Appendices

**Appendix A:** Ethics Approval Documents

# Appendix A.1: Study 1 Ethics Approval

**UNIVERSITY OF SASKATCHEWAN**

Behavioural Research Ethics

*Certificate of Approval*

| | | |
|---|---|---|
| PRINCIPAL INVESTIGATOR | DEPARTMENT | BEH# |
| Leah Ferguson | Kinesiology | 14-163 |

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED
Saskatoon
Saskatchewan, Canada

FUNDER(S)
UNIVERSITY OF SASKATCHEWAN - SSHRC
PRESIDENT'S BRIDGE FUNDING GRANT

TITLE
Self-Compassion and Sport Performance in Young Women Athletes

| ORIGINAL REVIEW DATE | APPROVAL ON | APPROVAL OF: | EXPIRY DATE |
|---|---|---|---|
| 22-May-2014 | 28-May-2014 | Application for Behavioural Research Ethics Review<br>Pre-Competition Questionnaire Package<br>Post-Competition Questionnaire Package<br>Consent Form<br>Coach Communication Script | 27-May-2015 |

Full Board Meeting ☐

Delegated Review ☒

**CERTIFICATION**

The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

**ONGOING REVIEW REQUIREMENTS**

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month of the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: *http://www.usask.ca/research/ethics_review/*

Beth Bilson, Chair
University of Saskatchewan
Behavioural Research Ethics Board

Please send all correspondence to:

Research Ethics Office
University of Saskatchewan
Box 5000 RPO University. 1602-110 Gymnasium Place
Saskatoon SK S7N 4J8
Telephone: (306) 966-2975     Fax: (306) 966-2069

183

Appendix A.2a: Study 2 Ethics Approval

## UNIVERSITY OF SASKATCHEWAN

Behavioural Research Ethics Board
### *Certificate of Approval*

| | | |
|---|---|---|
| PRINCIPAL INVESTIGATOR<br>Leah Ferguson | DEPARTMENT<br>Kinesiology | BEH#<br>15-404 |

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED
Saskatchewan
Canada

STUDENT RESEARCHER(S)
Margo Killham

FUNDER(S)
SOCIAL SCIENCES AND HUMANITIES RESEARCH
COUNCIL OF CANADA (SSHRC)

TITLE
Self-Compassion in Sport: Its Stability and Longitudinal Relationship with Young Women Athletes' Performance and Eudaimonic Well-Being

| ORIGINAL REVIEW DATE | APPROVAL ON<br>05-Feb-2016 | APPROVAL OF:<br>Application for Behavioural Research Ethics Review<br>Parent Information Form<br>Coach Communication Script<br>Introduction Page<br>Consent Form<br>Survey | EXPIRY DATE<br>04-Feb-2017 |
|---|---|---|---|

Full Board Meeting ☐          Date of Full Board Meeting:

Delegated Review ☒

**CERTIFICATION**
The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

**ONGOING REVIEW REQUIREMENTS**
In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the study remains open, and upon study completion.
Please refer to the following website for further instructions: *http://research.usask.ca/for-researchers/ethics/index.php*

Please send all correspondence to:          Research Ethics Office
University of Saskatchewan
Box 5000 RPO University, 1602-110 Gymnasium Place
Saskatoon SK S7N 4J8
Telephone: (306) 966-2975          Fax: (306) 966-2069

# Appendix A.2b: Study 2 Ethics Addendum Approval

**UNIVERSITY OF SASKATCHEWAN**

Behavioural Research Ethics Board (Beh-REB)

## *Certificate of Approval*
## *Study Amendment*

| PRINCIPAL INVESTIGATOR | DEPARTMENT | Beh # |
|---|---|---|
| Leah Ferguson | Kinesiology | 15-404 |

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT
Saskatchewan

STUDENT RESEARCHER(S)
Margo Killham

FUNDER(S)
SOCIAL SCIENCES AND HUMANITIES RESEARCH COUNCIL OF CANADA (SSHRC)

TITLE
Self-Compassion in Sport: Its Stability and Longitudinal Relationship with Young Women Athletes' Performance and Eudaimonic Well-Being

| APPROVAL OF | APPROVED ON | CURRENT EXPIRY DATE |
|---|---|---|
| Addition of: | 05-May-2016 | 04-Feb-2017 |
| -Demographic Survey | | |
| -Performance Measures | | |
| -Measures of Intuitive Eating and Compulsive | | |
| Exercise | | |

Full Board Meeting ☐

Delegated Review ☒

**CERTIFICATION**
The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

**ONGOING REVIEW REQUIREMENTS**
In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: *http://research.usask.ca/for-researchers/ethics/index.php*

Vivian Ramsden, Chair
University of Saskatchewan
Behavioural Research Ethics Board

Appendix A.3: Study 3 Ethics Approval



**UNIVERSITY OF SASKATCHEWAN**

Behavioural Research Ethics Board
**Certificate of Approval**

| PRINCIPAL INVESTIGATOR | DEPARTMENT | BEH# |
|---|---|---|
| Leah Ferguson | Kinesiology | 17-343 |

INSTITUTION(S) WHERE RESEARCH WILL BE CONDUCTED: University of Saskatchewan

STUDENT RESEARCHER(S): Margo Killham

FUNDER(S): SOCIAL SCIENCES AND HUMANITIES RESEARCH COUNCIL OF CANADA (SSHRC)

TITLE: An Exploration of Women Athletes' Self-compassion, Sport Performance Perceptions, and Well-being Around Athlete-Identified Important Competitive Sport Experiences.

| ORIGINAL REVIEW DATE | APPROVAL ON | APPROVAL OF: | EXPIRY DATE |
|---|---|---|---|
| 27-Sep-2017 | 10-Oct-2017 | Application for Behavioural Research Ethics Review | 09-Oct-2018 |
| | | Appendix A: Interview Guides (Interview 1 Guide, Interview 2 Guide) | |
| | | Appendix B: Exit Package (Transcript Release Form, Debriefing Form, Contact information and results request procedure, Thank-you letter) | |
| | | Appendix C: Informed Consent Form | |
| | | Appendix D: Recruitment Materials | |

Full Board Meeting ☐          Delegated Review ☒

CERTIFICATION: The University of Saskatchewan Behavioural Research Ethics Board (Beh-REB) is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2 2014). The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named research project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS: In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the study remains open, and upon study completion. Please refer to the following website for further instructions: *http://research.usask.ca/for-researchers/ethics/index.php*

Vivian Ramsden, Chair
University of Saskatchewan
Behavioural Research Ethics Board

Please send all correspondence to:

Research Services and Ethics Office
University of Saskatchewan
Room 223 Thorvaldson Building
110 Science Place
Saskatoon, SK Canada S7N 5C9

*Note.* Original copies of the ethics approval documents can be obtained upon written request. This is an updated practice at the University of Saskatchewan that began in 2017.

**Appendix B:** Study 1 Documents

Study 1: Time 1 Informed Consent

## SELF-ATTITUDES AND SPORT PERFORMANCE

You are invited to participate in a research project entitled **Self-compassion and Sport Performance in Young Women Athletes.** Please read this form carefully, and **feel free to email or call the researcher with any questions** you might have.

**Researcher:**                          **Research Assistant:**

Dr. Leah Ferguson
Assistant Professor
College of Kinesiology
University of Saskatchewan
Phone: 966-1093
Email: leah.ferguson@usask.ca

Margo Killham
Kinesiology graduate student
College of Kinesiology
University of Saskatchewan
Email: margo.killham@usask.ca

**Purpose and Procedure:** The purpose of this study is to explore the relationships between self-compassion, self-criticism, and women athletes' self-perceived performance in sport. Self-compassion is defined as treating oneself with kindness during times of suffering or failure.

Participation in this study is completely voluntary. If you do choose to become involved, you are asked to complete two questionnaire packages, one before an upcoming competition (e.g., game, match, camp, event, tournament) and one after that competition. The questionnaire packages inquire about your attitude towards yourself in sport and how you perceive your performance in that competition. A sample question is, "When something upsets me in sport I try to keep my emotions in balance". Each questionnaire package will take approximately 10-15 minutes to complete. In an effort to show appreciation for your time, $5.00 will be donated to a charitable organization of your choosing (Kidsport, Canadian Association for the Advancement of Women and Sport and Physical Activity, Because I am a girl), as a way to give back to organizations focused on sport and young women.

**Funding:** This study is funded by a University of Saskatchewan President's Social Sciences and Humanities Research Council of Canada grant awarded to Dr. Leah Ferguson

**Potential Benefits:** Although no benefits of participating in this study can be guaranteed, this study will assist in providing insight into the relationship between athletes' self-attitudes and their sport performance. This is an important step in order for researchers to better understand the role of self-compassion in sport. Little research has been conducted in the area of self-

compassion and sport performance, so the results generated from this study may be beneficial to you and other women athletes.

**Potential Risks:** There are no known or anticipated physical or psychological risks associated with participating in this study. You have the right to refuse to answer any question. Not answering a question or withdrawing from the study will result in no penalty to you or anyone else. You are encouraged to contact the researcher at any time (before, during, or after the study) to ask any questions that you may have. In the event that you would like to further discuss your feelings regarding the issues discussed in the study, Saskatoon Mental Health Services can assist you:

> Mental Health Services - services available to the public, no fee
>> Phone # 306-655-7950
>> - Youth Mental Health Services (for adolescents 12-19 years old)
>> - Adult Mental Health Services (for adults 19 years and older)

**Storage of Data:** All research material will be stored securely in the office of Dr. Leah Ferguson at the University of Saskatchewan. Only the research team will have access to the data. The data will be stored for a minimum of five years after completion of the study. This is standard protocol for any data that may be published in an academic journal and/or presented at a professional conference.

**Confidentiality**: The data from the study will be used as part of the researcher's program of research to produce a manuscript in hopes of publishing in a scholarly journal and/or being presented at a conference. Only the research team will have access to the completed questionnaires. Although you are asked to provide your email address, it will only be used to connect your pre-competition questionnaire with your post-competition questionnaire, so that your survey responses can be analyzed simultaneously. After your two questionnaires have been linked, your email address will be removed from the data file and replaced with a participant number. Every effort will be undertaken to ensure your confidentiality in this study; however, there are limits to confidentiality due to the participant recruitment process for this study (i.e., permission to recruit participants at team practices/meetings had to be approved by someone outside of the research team). Written reports of the data will be reported in aggregate/summarized form so that it will not be possible to identify individuals.

**Right to Withdraw:** Your participation is voluntary, and you can answer only those questions that you are comfortable with. Not answering a question or withdrawing from the study will result in no penalty to you or anyone else. You may withdraw from the study for any reason without explanation until your survey responses have been linked. After this point, your anonymous responses cannot be recognized to be withdrawn. The decision to withdraw will not affect any of your current or future activities. You will be advised of any new information that may have a bearing on your decision to participate.

**Questions:** If you have any questions concerning the research project, please feel free to contact the researcher. You are also free to contact the researcher if you have questions at a later time. This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board on May 28, 2014. Any questions regarding your rights as a participant may be addressed to that committee through the Ethics Office at 306-966-2975, toll free at 1-888-966-2975, or ethics.office@usask.ca.

You may contact the researcher to find out the results of the study or request a copy of the published manuscript.

**Consent to Participate: I have read and understood the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project, understanding that I may withdraw my consent at any time. A copy of this consent form has been given to me for my records.**


_____          _____
(Name of Participant)                                          (Date)


_____          _____
(Signature of Participant)                                    (Signature of Researcher)

# Self-Attitudes and Sport Performance
## Pre-Competition Questionnaire Package

*Thank you for taking the time to participate in this study. This questionnaire should take you approximately 15 minutes to complete. Please answer each question honestly. All information received is held in confidence. If you have any questions at all, please feel free to contact the researcher at anytime.*

**How old are you?** _____ years

**What is your height (please specify feet, inches, or cm)?** _____

**What is your weight (please specify kg or lbs)?** _____

**What is your email address?** _____

(required so that the second questionnaire can be emailed to you)

**If university student:**

      **Year of university (e.g., 2):**_____

      **College/Department:**_____

**If high school student:**

      **Grade (e.g., 11):**_____

**Marital Status:**

| ☐ | ☐ | ☐ | ☐ |
|---|---|---|---|
| Single | Married/Common Law | Separated/Divorced | Widowed |

**Sociocultural Information**

*How would you describe yourself? You may mark more than one or specify, if applicable.*

☐ White/Caucasian ☐ Aboriginal (First Nation, Metis, Inuit)

☐ Chinese ☐ South Asian *(e.g., East Indian, Pakistani, Sri Lankan, etc.)*

☐ Black ☐ Filipino

☐ Latin American ☐ South East Asian *(e.g., Vietnamese, Cambodian, Malaysian, Laotian, etc.)*

☐ Arab ☐ West Asian/Middle East *(e.g., Iranian, Afghan, etc.)*

☐ Korean ☐ Japanese

☐ Other – *Please specify*: _____

**Charitable compensation**

*To thank you for participating in this study, a $5.00 donation will be made to the following organization of your choosing (please specify):*

☐ *KidSport*

☐ *Canadian Association for the Advancement of Women and Sport and Physical Activity*

☐ *Because I am a girl*

**Sport Involvement**

*Please indicate the levels of sport competition you have competed at IN THE LAST 12 MONTHS. Also indicate the sport(s) that each level is applicable to (i.e., what sport(s) you competed in at each level).*

| | LEVEL | SPORT(S) |
|---|---|---|
| | *Recreational* (competing in intramurals or in a recreational league) | |
| | *Local* (competing against athletes from your city/town) | |
| | *Provincial* (competing against athletes from around the province of Saskatchewan) | |
| | *Regional* (competing against athletes from the western provinces [i.e., BC, AB, SK, MB]) | |
| | *National* (competing at a National Championship) | |
| | *International I* (competing against athletes from a country other than Canada) | |
| | *International II* (member of a national team [i.e., representing/represented Canada]) | |

During the PAST WEEK, how many times did you play an active sport, such as baseball, softball, basketball, soccer, swimming, or football (please circle)?

| 0 | 1 | 2 | 3 |
|---|---|---|---|
| *not at all* | | | *5 or more times* |

Your primary sport is: _____

At what level? _____

*Using the statements below, please rank your anticipated performance in your next competition (e.g., game, match, camp, event, tournament, camp) along the scale provided.*

| Very weak performance expected | | | | Very effective performance expected |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. I will appropriately return to my position (e.g., base, home, recovery position) during competition. | 1 | 2 | 3 | 4 | 5 |
| 2. I will move appropriately (e.g., offensively, defensively), as necessitated by the flow of the competition. | 1 | 2 | 3 | 4 | 5 |
| 3. I will make appropriate choices about what to do during competition. | 1 | 2 | 3 | 4 | 5 |
| 4. I will efficiently execute my skills when competing. | 1 | 2 | 3 | 4 | 5 |
| 5. I will provide appropriate help and assistance for my teammates by being in proper position during competition. | 1 | 2 | 3 | 4 | 5 |
| 6. I will execute appropriate supporting movements for my teammates (e.g., defensive cover, backup). | 1 | 2 | 3 | 4 | 5 |
| 7. I will appropriately defend opponents, given my position, during competition. | 1 | 2 | 3 | 4 | 5 |

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES IN SPORT

*Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner* **in your sport (i.e., training and competition)**, *using the following scale:*

| *Almost never* | | | | *Almost always* |
|:---:|:---:|:---:|:---:|:---:|
| *1* | *2* | *3* | *4* | *5* |

_____ 1. I'm disapproving and judgmental about my athletic flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong in my sport.

_____ 3. When things are going badly for me, I see the difficulties as part of sport that all athletes go through.

_____ 4. When I think about my inadequacies as an athlete, it tends to make me feel more separate and cut off from the rest of the sport world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain in my sport.

_____ 6. When I fail at something important to me in my sport I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other athletes feeling like I am.

_____ 8. When times are really difficult in my sport, I tend to be tough on myself.

_____ 9. When something upsets me in my sport I try to keep my emotions in balance.

_____ 10. When I feel inadequate in my sport, I try to remind myself that feelings of inadequacy are shared by most athletes.

_____ 11. I'm intolerant and impatient towards those aspects of my athletic ability I don't like.

_____ 12. When I'm going through a very hard time in my sport, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down in my sport, I tend to feel like most other athletes are probably happier than I am.

|  | *Almost* | | | | *Almost* |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | *never* | | | | *always* |
|  | *1* | *2* | *3* | *4* | *5* |

_____ 14. When something painful happens in my sport I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the sport experience.

_____ 16. When I see aspects of my athletic ability that I don't like, I get down on myself.

_____ 17. When I fail in my sport I try to keep things in perspective.

_____ 18. When I'm really struggling in my sport, I tend to feel like other athletes must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering in sport.

_____ 20. When something upsets me in my sport I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering in my sport.

_____ 22. When I'm feeling down in my sport I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own athletic flaws and inadequacies.

_____ 24. When something painful happens in my sport I tend to blow the incident out of proportion.

_____ 25. When I fail in my sport, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my athletic ability I don't like.

*Think about the **<u>most significant negative event in sport</u>** over the **<u>past week</u>** that was personally demanding (such as a setback or failure). Please answer the following on a scale from 1 to 10:*

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. How **often** did you have **self-critical** thoughts about a recent negative sport event? | Had none | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | A lot of the time |
| 2. How **powerful** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very powerful |
| 3. How **intrusive** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very intrusive |
| 4. How **long** did your **self-critical** thoughts about a recent negative sport event last? | Fleetingly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Most of the day |
| 5. How **distressed** were you by your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very distressed |
| 6. How **angry/hostile** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very harassing |
| 7. How easy was it to **distract** yourself from your **self-critical** thoughts about a recent negative sport event? | Not at all easy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very easy |

*Thank you very much for your participation! You will be emailed a second questionnaire to complete online after your upcoming competition.*

Appendix B.2: Study 1 Time 2 Post-competition Measures

*Thank you for taking the time to participate in this study.  This questionnaire should take you approximately 10 minutes to complete.  Please answer each question honestly.  All information received is held in confidence.  If you have any questions at all, please feel free to contact the researcher at anytime. Please provide your…*

**Email Address:**_____
(required so that this questionnaire can be linked with your first questionnaire)

*Using the statements below, please rank your performance in your most recent competition (e.g., game, match, camp, event, tournament) along the scale provided.*

| **Very weak performance**<br>**1** | **2** | **3** | **4** | **Very effective performance**<br>**5** | | | | |
|---|---|---|---|---|---|---|---|---|
| 1. I appropriately returned to my position (e.g., base, home, recovery position) during competition. | 1 | 2 | 3 | 4 | 5 |
| 2. I moved appropriately (e.g., offensively, defensively), as necessitated by the flow of the competition. | 1 | 2 | 3 | 4 | 5 |
| 3. I made appropriate choices about what to do during competition. | 1 | 2 | 3 | 4 | 5 |
| 4. I efficiently executed my skills when competing. | 1 | 2 | 3 | 4 | 5 |
| 5. I provided appropriate help and assistance for my teammates by being in proper position during competition. | 1 | 2 | 3 | 4 | 5 |
| 6. I executed appropriate supporting movements for my teammates (e.g., defensive cover, backup). | 1 | 2 | 3 | 4 | 5 |
| 7. I appropriately defended opponents, given my position, during competition. | 1 | 2 | 3 | 4 | 5 |

How did you/your team do in your most recent competition? For example, I won, we finished in third place, I made the team, etc.:

_____

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES IN SPORT

*Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner **in your sport (i.e., training and competition)**, using the following scale:*

| *Almost never* | | | | *Almost always* |
|---|---|---|---|---|
| *1* | *2* | *3* | *4* | *5* |

\_\_\_\_\_ 1. I'm disapproving and judgmental about my athletic flaws and inadequacies.

\_\_\_\_\_ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong in my sport.

\_\_\_\_\_ 3. When things are going badly for me, I see the difficulties as part of sport that all athletes go through.

\_\_\_\_\_ 4. When I think about my inadequacies as an athlete, it tends to make me feel more separate and cut off from the rest of the sport world.

\_\_\_\_\_ 5. I try to be loving towards myself when I'm feeling emotional pain in my sport.

\_\_\_\_\_ 6. When I fail at something important to me in my sport I become consumed by feelings of inadequacy.

\_\_\_\_\_ 7. When I'm down and out, I remind myself that there are lots of other athletes feeling like I am.

\_\_\_\_\_ 8. When times are really difficult in my sport, I tend to be tough on myself.

\_\_\_\_\_ 9. When something upsets me in my sport I try to keep my emotions in balance.

\_\_\_\_\_ 10. When I feel inadequate in my sport, I try to remind myself that feelings of inadequacy are shared by most athletes.

\_\_\_\_\_ 11. I'm intolerant and impatient towards those aspects of my athletic ability I don't like.

\_\_\_\_\_ 12. When I'm going through a very hard time in my sport, I give myself the caring and tenderness I need.

\_\_\_\_\_ 13. When I'm feeling down in my sport, I tend to feel like most other athletes are probably happier than I am.

|          |          |          |          |          |
|:--------:|:--------:|:--------:|:--------:|:--------:|
| *Almost*<br>*never* |          |          |          | *Almost*<br>*always* |
| *1*      | *2*      | *3*      | *4*      | *5*      |

_____ 14. When something painful happens in my sport I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the sport experience.

_____ 16. When I see aspects of my athletic ability that I don't like, I get down on myself.

_____ 17. When I fail in my sport I try to keep things in perspective.

_____ 18. When I'm really struggling in my sport, I tend to feel like other athletes must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering in sport.

_____ 20. When something upsets me in my sport I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering in my sport.

_____ 22. When I'm feeling down in my sport I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own athletic flaws and inadequacies.

_____ 24. When something painful happens in my sport I tend to blow the incident out of proportion.

_____ 25. When I fail in my sport, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my athletic ability I don't like.

---

Are you interested in participating in future studies of a similar topic? ___ Yes     ___ No

---

*Thank you very much for your participation in this study!*

**Appendix C:** Study 2 Documents

# Women Athletes' Sport Performance and Well-Being:

**Currently recruiting Women Athletes for an ongoing research study at the University of Saskatchewan.**

There are many positive physical and psycho-social benefits for women when they participate in sport. In this study we will be looking at women athletes' performance and well-being over a competitive sport season.

Athletes will be compensated for participation through a donation up to $20 to a sport organization of choice and to enter a draw for 1 of 20 $25 Amazon gift cards.

## Participation Eligibility:
- Women athletes 16 to 35 years of age
- Local, Provincial, Regional, and International competition levels
- With at least 12 months sport experience
- Not currently pregnant or lactating

If you are interested in participating or are a coach of eligible women athletes and require further information or would like to offer your athletes the opportunity to participate please contact the research team.

## Contact Information:
Margo Killham: margo.killham@usask.ca

Noreen Murphy: nmurphy@sasksport.sk.ca

Leah Ferguson: leah.ferguson@usask.ca

Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada

Canada

UNIVERSITY OF SASKATCHEWAN
College of Kinesiology
KINESIOLOGY.USASK.CA

SASK SPORT INC
LOTTERY TICKET CENTRE
A Federation of Provincial Sport Governing Bodies

Study 2 Informed Consent Form

***A Longitudinal Examination of Women Athletes' Self-compassion, Sport Performance, and Well-being.***

You are invited to participate in a research project entitled ***A Longitudinal Examination of Women Athletes' Self-compassion, Sport Performance, and Well-being.*** Please read this form carefully, and **feel free to email or call the researcher with any questions** you might have.

**Researcher:**

Dr. Leah Ferguson
Assistant Professor
College of Kinesiology
University of Saskatchewan
Phone: 966-1093
Email: leah.ferguson@usask.ca

**Research Assistant:**

Margo Killham
Ph.D. Candidate
College of Kinesiology
University of Saskatchewan
Email: margo.killham@usask.ca

**Purpose and Procedure:** The purpose of this study is to explore the relationships between self-compassion and women athletes' performance perceptions and well-being over a competitive sport season. Self-compassion is defined as treating oneself with kindness during times of suffering or failure.

Participation in this study is completely voluntary. If you do choose to become involved, you are asked to complete approximately 11 questionnaire packages throughout your competitive season. These packages occur at three different levels: (1) Primary, (2) Secondary, and (3) Daily. The questionnaire packages inquire about your attitude towards yourself in sport and how you perceive your performance in that competition. A sample question is, "When something upsets me in sport I try to keep my emotions in balance". Each questionnaire package will take approximately 15-30 minutes to complete. In an effort to show appreciation for your time, you will receive a $5.00 honourarium after each primary assessment, for a total of $20. You will also have the chance at the end of each questionnaire package to enter to win 1 of 20 $25 Amazon gift cards.

**Funding:** This study is funded by a Social Sciences and Humanities Research Council of Canada grant awarded to Dr. Leah Ferguson.

**Potential Benefits:** Although no benefits of participating in this study can be guaranteed, this study will assist in providing insight into the relationship between athletes' self-compassion, sport performance, and well-being for women athletes. This is an important step for researchers to better understand the role of self-compassion in sport. Little research has been conducted in the area of self-compassion and sport performance, so the results generated from this study may be beneficial to you and other young women athletes.

**Potential Risks:** There are no known or anticipated physical or psychological risks associated with participating in this study. You have the right to refuse to answer any question. Not answering a question or withdrawing from the study will result in no penalty to you or anyone else. You are encouraged to contact the researcher at any time (before, during, or after the study) to ask any questions that you may have. In the event that you would like to further discuss your feelings regarding the issues discussed in the study, Mental Health Services throughout Saskatchewan can assist you:

        Saskatoon Mental Health Services – services available to the public, no fee
            Phone # 306-655-7950
- Youth Mental Health Services (for adolescents 12-19 years old)
- Adult Mental Health Services (for adults 19 years and older)

        Battlefords Mental Health Services – services available to the public, no fee
            Phone # 306-446-7177

        Estevan Mental Health Services – services available to the public, no fee
            Phone # 306-634-6428

        Kindersley Mental Health Services – services available to the public, no fee
            Phone # 306-463-8052

        Moose Jaw Mental Health Services – services available to the public, no fee
            Phone # 306-692-4240

        Prince Albert Mental Health Services – services available to the public, no fee
            Phone # 306-763-7747

        Regina Mental Health Services – services available to the public, no fee
            Phone # 306-525-9543

        Swift Current Mental Health Services – services available to the public, no fee
            Phone # 306-778-2440

        Weyburn Mental Health Services – services available to the public, no fee
            Phone # 306-842-7959

**Storage of Data:** All research material will be stored securely in the office of Dr. Leah Ferguson at the University of Saskatchewan. Only the research team will have access to the data. The data will be stored for five years after completion of the study. This is standard protocol for any data that may be published in an academic journal and/or presented at a professional conference.

**Confidentiality**: The data from the study will be used as part of the researcher's program of research to produce a manuscript in hopes of publishing in a scholarly journal and/or being presented at a conference. Only the research team will have access to the completed questionnaires. Although you are asked to provide your email address, it will only be used to connect your questionnaires, so that your survey responses can be analyzed simultaneously. After the questionnaires have been linked, your email address will be removed from the data file

and replaced with a participant number.  Written reports of the data will be reported in aggregate/summarized form so that it will not be possible to identify individuals.

**Right to Withdraw:** Your participation is voluntary, and you can answer only those questions that you are comfortable with.  Not answering a question or withdrawing from the study will result in no penalty to you or anyone else.  You may withdraw from the study for any reason without explanation.  After your e-mail address has been removed from the data, your anonymous responses cannot be recognized to be withdrawn.   The decision to withdraw will not affect any of your current or future activities.  You will be advised of any new information that may have a bearing on your decision to participate.

**Questions:** If you have any questions concerning the research project, please feel free to contact the researcher or research assistant.  You are also free to contact the researcher if you have questions at a later time.   This research project has been approved on ethical grounds by the University of Saskatchewan Behavioural Research Ethics Board.  Any questions regarding your rights as a participant may be addressed to that committee through the Ethics Office at 306-966-2975, toll free at 1-888-966-2975, or ethics.office@usask.ca.

You may also contact the researcher to find out the results of the study or request a copy of the published manuscript.

**Consent to Participate:  I have read and understood the description provided; I have had an opportunity to ask questions and my questions have been answered.  I consent to participate in the research project, understanding that I may withdraw my consent at any time.  A copy of this consent form has been given to me for my records.**


_____         _____
(Name of Participant)                                          (Date)


_____         _____
(Signature of Participant)                                    (Signature of Researcher)

***A Longitudinal Examination of Women Athletes' Self-compassion, Sport Performance, and Well-being.***

Thank-you for your participation in the project entitled ***A Longitudinal Examination of Women Athletes' Self-compassion, Sport Performance, and Well-being.*** Your participation is greatly appreciated, thank-you for your time, effort, and willingness to participate during your sport season. If you have any questions regarding this study, please **feel free to email or call the researcher with any questions** you might have.

**Supervisor:**

    Dr. Leah Ferguson
    Assistant Professor
    College of Kinesiology
    University of Saskatchewan
    Phone: 966-1093
    Email: leah.ferguson@usask.ca

**Graduate Student:**

    Margo Killham
    Ph.D. Candidate
    College of Kinesiology
    University of Saskatchewan
    Email: margo.killham@usask.ca

Sincerely,

Margo Killham

Appendix C.5: Study 2 Panel Description and Distribution Scheduling

Table C.5-1.

*Study 2: Athlete Panel Description and Distribution Schedule and Timing*

| Panel # (*n*) | #Weeks | T1 | T2 | T3 | T4 | T5 | T6 | T7 | T8 | T9 | T10 | T11 | T12 | T13 | T14 | T15 | T16 | T17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 (*11*)** | 14 | 16-May | 30-May | 06-Jun | 13-Jun | 27-Jun | 03-Jul | 04-Jul | 05-Jul | 06-Jul | 07-Jul | 08-Jul | 09-Jul | 18-Jul | 25-Jul | 08-Aug | 15-Aug | 29-Aug |
| **2 (*1*)** | 14 | 13-May | 18-May | 25-May | 28-May | 01-Jun | 05-Jun | 06-Jun | 07-Jun | 08-Jun | 09-Jun | 10-Jun | 11-Jun | 15-Jun | 18-Jun | 22-Jun | 25-Jun | 29-Jun |
| **3 (*10*)** | 14 | 23-May | 30-May | 13-Jun | 27-Jun | 11-Jul | 17-Jul | 18-Jul | 19-Jul | 20-Jul | 21-Jul | 22-Jul | 23-Jul | 01-Aug | 08-Aug | 15-Aug | 29-Aug | 07-Sep |
| **4 (*1*)** | 13 | 16-May | 30-May | 06-Jun | 13-Jun | 20-Jun | 26-Jun | 27-Jun | 28-Jun | 29-Jun | 30-Jun | 01-Jul | 02-Jul | 11-Jul | 18-Jul | 25-Jul | 10-Aug | 17-Aug |
| **5 (*4*)** | 8 | 23-May | 30-May | 02-Jun | 05-Jun | 09-Jun | 12-Jun | 13-Jun | 14-Jun | 15-Jun | 16-Jun | 17-Jun | 18-Jun | 23-Jun | 26-Jun | 01-Jul | 08-Jul | 15-Jul |
| **6 (*2*)** | 7 | 16-May | 19-May | 22-May | 24-May | 27-May | 29-May | 30-May | 31-May | 01-Jun | 02-Jun | 03-Jun | 04-Jun | 05-Jun | 07-Jun | 09-Jun | 11-Jun | 14-Jun |
| **7 (*2*)** | 20 | 23-May | 06-Jun | 20-Jun | 04-Jul | 18-Jul | 31-Jul | 01-Aug | 02-Aug | 03-Aug | 04-Aug | 05-Aug | 06-Aug | 15-Aug | 29-Aug | 12-Sep | 03-Oct | 17-Oct |
| **8 (*1*)** | 7 | 16-May | 23-May | 27-May | 31-May | 07-Jun | 12-Jun | 13-Jun | 14-Jun | 15-Jun | 16-Jun | 17-Jun | 18-Jun | 22-Jun | 27-Jun | 04-Jul | 07-Jul | 13-Jul |
| **9 (*1*)** | 15 | 23-May | 30-May | 13-Jun | 27-Jun | 11-Jul | 17-Jul | 18-Jul | 19-Jul | 20-Jul | 21-Jul | 22-Jul | 23-Jul | 01-Aug | 15-Aug | 29-Aug | 12-Sep | 19-Sep |
| **10 (*1*)** | ND | | | | | | | | | | | | | | | | | |
| **11 (*1*)** | 10 | 14-Jun | 28-Jun | 05-Jul | 12-Jul | 19-Jul | 24-Jul | 25-Jul | 26-Jul | 27-Jul | 28-Jul | 29-Jul | 30-Jul | 02-Aug | 09-Aug | 16-Aug | 23-Aug | 30-Aug |
| **12 (*8*)** | 13 | 25-Oct | 02-Nov | 09-Nov | 16-Nov | 30-Nov | 11-Dec | 12-Dec | 13-Dec | 14-Dec | 15-Dec | 16-Dec | 17-Dec | 27-Dec | 03-Jan | 17-Jan | 24-Jan | 30-Jan |
| **13 (*1*)** | 13 | 23-May | 06-Jun | 13-Jun | 20-Jun | 27-Jun | 03-Jul | 04-Jul | 05-Jul | 06-Jul | 07-Jul | 08-Jul | 09-Jul | 18-Jul | 25-Jul | 01-Aug | 08-Aug | 22-Aug |
| **14 (*5*)** | 14 | 26-May | 09-Jun | 16-Jun | 23-Jun | 30-Jun | 10-Jul | 11-Jul | 12-Jul | 13-Jul | 14-Jul | 15-Jul | 16-Jul | 28-Jul | 04-Aug | 18-Aug | 25-Aug | 08-Sep |
| **15 (*2*)** | 22 | 18-Oct | 02-Nov | 16-Nov | 30-Nov | 14-Dec | 08-Jan | 09-Jan | 10-Jan | 11-Jan | 12-Jan | 13-Jan | 14-Jan | 25-Jan | 15-Feb | 01-Mar | 15-Mar | 29-Mar |
| **16 (*4*)** | 19 | 17-Oct | 31-Oct | 07-Nov | 14-Nov | 21-Nov | 27-Nov | 28-Nov | 29-Nov | 30-Nov | 01-Dec | 02-Dec | 03-Dec | 12-Dec | 09-Jan | 23-Jan | 06-Feb | 20-Feb |
| **17 (*1*)** | 18 | 05-Sep | 19-Sep | 03-Oct | 17-Oct | 31-Oct | 06-Nov | 07-Nov | 08-Nov | 09-Nov | 10-Nov | 11-Nov | 12-Nov | 21-Nov | 05-Dec | 19-Dec | 02-Jan | 16-Jan |
| **18 (*2*)** | 12 | 30-Nov | 07-Dec | 12-Dec | 19-Dec | 27-Dec | 01-Jan | 02-Jan | 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 16-Jan | 23-Jan | 01-Feb | 13-Feb | 20-Feb |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **19 (*1*)** | 29 | 06-Sep | 27-Sep | 18-Oct | 08-Nov | 06-Dec | 01-Jan | 02-Jan | 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 17-Jan | 07-Feb | 28-Feb | 21-Mar | 11-Apr |
| **20 (*1*)** | 33 | 21-Sep | 12-Oct | 02-Nov | 30-Nov | 28-Dec | 22-Jan | 23-Jan | 24-Jan | 25-Jan | 26-Jan | 27-Jan | 28-Jan | 08-Feb | 01-Mar | 29-Mar | 26-Apr | 24-May |
| **21 (*20*)** | 8 | 07-Sep | 12-Sep | 15-Sep | 19-Sep | 22-Sep | 25-Sep | 26-Sep | 27-Sep | 28-Sep | 29-Sep | 30-Sep | 01-Oct | 04-Oct | 10-Oct | 15-Oct | 20-Oct | 24-Oct |
| **22 (*1*)** | 26 | 27-Feb | 08-Mar | 28-Mar | 25-Apr | 16-May | 04-Jun | 05-Jun | 06-Jun | 07-Jun | 08-Jun | 09-Jun | 10-Jun | 20-Jun | 11-Jul | 01-Aug | 22-Aug | 12-Sep |
| **23 (*19*)** | 17 | 05-Oct | 19-Oct | 02-Nov | 16-Nov | 30-Nov | 04-Dec | 05-Dec | 06-Dec | 07-Dec | 08-Dec | 09-Dec | 10-Dec | 21-Dec | 04-Jan | 18-Jan | 01-Feb | 13-Feb |
| **24 (*17*)** | 13 | 24-Oct | 03-Nov | 10-Nov | 24-Nov | 01-Dec | 11-Dec | 12-Dec | 13-Dec | 14-Dec | 15-Dec | 16-Dec | 17-Dec | 29-Dec | 12-Jan | 02-Feb | 16-Feb | 27-Feb |
| **25 (*1*)** | 20 | 05-Sep | 26-Sep | 10-Oct | 24-Oct | 07-Nov | 20-Nov | 21-Nov | 22-Nov | 23-Nov | 24-Nov | 25-Nov | 26-Nov | 05-Dec | 19-Dec | 02-Jan | 16-Jan | 31-Jan |
| **26 (*2*)** | 24 | 28-Sep | 11-Oct | 01-Nov | 29-Nov | 13-Dec | 01-Jan | 02-Jan | 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 17-Jan | 31-Jan | 21-Feb | 07-Mar | 22-Mar |
| **27 (*1*)** | 8 | 21-Sep | 25-Sep | 29-Sep | 03-Oct | 06-Oct | 09-Oct | 10-Oct | 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 24-Oct | 27-Oct | 31-Oct | 03-Nov | 08-Nov |
| **28 (*12*)** | 14 | 03-Oct | 19-Oct | 02-Nov | 16-Nov | 30-Nov | 04-Dec | 05-Dec | 06-Dec | 07-Dec | 08-Dec | 09-Dec | 10-Dec | 21-Dec | 04-Jan | 18-Jan | 01-Feb | 13-Feb |
| **29 (*2*)** | 21 | 22-Oct | 01-Nov | 15-Nov | 29-Nov | 13-Dec | 01-Jan | 02-Jan | 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 16-Jan | 30-Jan | 20-Feb | 06-Mar | 27-Mar |
| **30 (*5*)** | 16 | 10-Oct | 19-Oct | 02-Nov | 16-Nov | 30-Nov | 04-Dec | 05-Dec | 06-Dec | 07-Dec | 08-Dec | 09-Dec | 10-Dec | 21-Dec | 04-Jan | 18-Jan | 01-Feb | 13-Feb |
| **31 (*15*)** | 22 | 07-Oct | 18-Oct | 01-Nov | 15-Nov | 29-Nov | 11-Dec | 12-Dec | 13-Dec | 14-Dec | 15-Dec | 16-Dec | 17-Dec | 03-Jan | 24-Jan | 15-Feb | 06-Mar | 20-Mar |
| **32 (*2*)** | 30 | 15-Oct | 31-Oct | 21-Nov | 12-Dec | 16-Jan | 05-Feb | 06-Feb | 07-Feb | 08-Feb | 09-Feb | 10-Feb | 11-Feb | 27-Feb | 27-Mar | 17-Apr | 01-May | 15-May |
| **33 (*4*)** | 7 | 04-Jan | 10-Jan | 13-Jan | 17-Jan | 20-Jan | 22-Jan | 23-Jan | 24-Jan | 25-Jan | 26-Jan | 27-Jan | 28-Jan | 30-Jan | 01-Feb | 03-Feb | 05-Feb | 08-Feb |
| **34 (*1*)** | 14 | 20-Nov | 28-Nov | 05-Dec | 12-Dec | 19-Dec | 01-Jan | 02-Jan | 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 16-Jan | 23-Jan | 06-Feb | 13-Feb | 27-Feb |
| **35 (*1*)** | 22 | 17-Oct | 31-Oct | 14-Nov | 28-Nov | 12-Dec | 01-Jan | 02-Jan | 03-Jan | 04-Jan | 05-Jan | 06-Jan | 07-Jan | 19-Jan | 02-Feb | 23-Feb | 16-Mar | 30-Mar |
| **36 (*2*)** | 12 | 26-Oct | 07-Nov | 14-Nov | 21-Nov | 28-Nov | 11-Dec | 12-Dec | 13-Dec | 14-Dec | 15-Dec | 16-Dec | 17-Dec | 02-Jan | 16-Jan | 30-Jan | 13-Feb | 20-Feb |
| **37 (*2*)** | 12 | 26-Oct | 08-Nov | 15-Nov | 22-Nov | 29-Nov | 04-Dec | 05-Dec | 06-Dec | 07-Dec | 08-Dec | 09-Dec | 10-Dec | 13-Dec | 03-Jan | 10-Jan | 17-Jan | 24-Jan |
| **38 (*1*)** | 15 | 29-Nov | 06-Dec | 13-Dec | 03-Jan | 10-Jan | 15-Jan | 16-Jan | 17-Jan | 18-Jan | 19-Jan | 20-Jan | 21-Jan | 30-Jan | 07-Feb | 21-Feb | 07-Mar | 21-Mar |
| **39 (*1*)** | 29 | 28-Nov | 22-Dec | 19-Jan | 09-Feb | 02-Mar | 19-Mar | 20-Mar | 21-Mar | 22-Mar | 23-Mar | 24-Mar | 25-Mar | 13-Apr | 04-May | 25-May | 15-Jun | 06-Jul |
| **40 (*1*)** | 9 | 20-Nov | 27-Nov | 30-Nov | 04-Dec | 07-Dec | 11-Dec | 12-Dec | 13-Dec | 14-Dec | 15-Dec | 16-Dec | 17-Dec | 20-Dec | 05-Jan | 10-Jan | 17-Jan | 23-Jan |

| | #weeks | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 (*29*) | 32 | 25-Jan | 15-Feb | 15-Mar | 05-Apr | 03-May | 21-May | 22-May | 23-May | 24-May | 25-May | 26-May | 27-May | 07-Jun | 05-Jul | 02-Aug | 30-Aug | 20-Sep |
| 42 (*1*) | 18 | 30-Nov | 14-Dec | 19-Dec | 02-Jan | 16-Jan | 29-Jan | 30-Jan | 31-Jan | 01-Feb | 02-Feb | 03-Feb | 04-Feb | 14-Feb | 28-Feb | 21-Mar | 04-Apr | 18-Apr |
| 43 (*9*) | 7 | 02-Jan | 09-Jan | 12-Jan | 16-Jan | 19-Jan | 22-Jan | 23-Jan | 24-Jan | 25-Jan | 26-Jan | 27-Jan | 28-Jan | 01-Feb | 06-Feb | 09-Feb | 13-Feb | 22-Feb |
| 44 (*1*) | 21 | 02-Jan | 16-Jan | 23-Jan | 06-Feb | 13-Feb | 19-Feb | 20-Feb | 21-Feb | 22-Feb | 23-Feb | 24-Feb | 25-Feb | 06-Mar | 20-Mar | 10-Apr | 24-Apr | 08-May |
| 45 (*2*) | 7 | 23-Jan | 29-Jan | 01-Feb | 05-Feb | 08-Feb | 12-Feb | 13-Feb | 14-Feb | 15-Feb | 16-Feb | 17-Feb | 18-Feb | 20-Feb | 24-Feb | 27-Feb | 03-Mar | 07-Mar |
| 46 (*1*) | 19 | 01-May | 15-May | 22-May | 29-May | 05-Jun | 18-Jun | 19-Jun | 20-Jun | 21-Jun | 22-Jun | 23-Jun | 24-Jun | 03-Jul | 17-Jul | 31-Jul | 07-Aug | 22-Aug |
| 47 (*1*) | 17 | 22-May | 29-May | 12-Jun | 26-Jun | 10-Jul | 23-Jul | 24-Jul | 25-Jul | 26-Jul | 27-Jul | 28-Jul | 29-Jul | 07-Aug | 21-Aug | 04-Sep | 18-Sep | 02-Oct |
| 48 (*1*) | 18 | 05-May | 15-May | 29-May | 12-Jun | 26-Jun | 09-Jul | 10-Jul | 11-Jul | 12-Jul | 13-Jul | 14-Jul | 15-Jul | 24-Jul | 31-Jul | 14-Aug | 28-Aug | 11-Sep |
| 49 (*13*) | 17 | 20-Apr | 24-Apr | 27-Apr | 02-May | 09-May | 14-May | 15-May | 16-May | 17-May | 18-May | 19-May | 20-May | 24-May | 29-May | 04-Jun | 07-Jun | 13-Jun |
| 50 (*1*) | 17 | 28-Apr | 08-May | 22-May | 05-Jun | 19-Jun | 25-Jun | 26-Jun | 27-Jun | 28-Jun | 29-Jun | 30-Jun | 01-Jul | 11-Jul | 25-Jul | 08-Aug | 15-Aug | 29-Aug |
| 51 (*1*) | 11 | 16-Apr | 25-Apr | 02-May | 09-May | 22-May | 28-May | 29-May | 30-May | 31-May | 01-Jun | 02-Jun | 03-Jun | 08-Jun | 15-Jun | 20-Jun | 27-Jun | 06-Jul |
| 52 (*8*) | 12 | 12-May | 23-May | 30-May | 06-Jun | 13-Jun | 18-Jun | 19-Jun | 20-Jun | 21-Jun | 22-Jun | 23-Jun | 24-Jun | 04-Jul | 11-Jul | 25-Jul | 01-Aug | 15-Aug |
| 53 (*1*) | 15 | 21-May | 29-May | 12-Jun | 19-Jun | 03-Jul | 16-Jul | 17-Jul | 18-Jul | 19-Jul | 20-Jul | 21-Jul | 22-Jul | 03-Aug | 17-Aug | 24-Aug | 07-Sep | 12-Sep |
| 54 (*1*) | 12 | 24-Apr | 04-May | 13-May | 18-May | 25-May | 04-Jun | 05-Jun | 06-Jun | 07-Jun | 08-Jun | 09-Jun | 10-Jun | 15-Jun | 22-Jun | 29-Jun | 06-Jul | 13-Jul |
| 55 (*3*) | 8 | 23-Apr | 27-Apr | 30-Apr | 05-May | 11-May | 14-May | 15-May | 16-May | 17-May | 18-May | 19-May | 20-May | 24-May | 29-May | 04-Jun | 07-Jun | 13-Jun |
| 56 (*1*) | 14 | 24-Apr | 01-May | 15-May | 22-May | 05-Jun | 11-Jun | 12-Jun | 13-Jun | 14-Jun | 15-Jun | 16-Jun | 17-Jun | 26-Jun | 10-Jul | 17-Jul | 31-Jul | 07-Aug |
| 57 (*1*) | 11 | 29-May | 07-Jun | 21-Jun | 28-Jun | 05-Jul | 09-Jul | 10-Jul | 11-Jul | 12-Jul | 13-Jul | 14-Jul | 15-Jul | 24-Jul | 31-Jul | 07-Aug | 14-Aug | 21-Aug |
| 58 (*1*) | 12 | 12-May | 23-May | 30-May | 06-Jun | 13-Jun | 18-Jun | 19-Jun | 20-Jun | 21-Jun | 22-Jun | 23-Jun | 24-Jun | 04-Jul | 11-Jul | 18-Jul | 25-Jul | 08-Aug |

*Note*. All recruited athletes are accounted for in the n of the first column including participants with incomplete data who were not included in the study analyses. #weeks = the length of the competitive season in weeks for each panel. ND = not distributed due to incomplete information provided by the athlete prior to their first regular season competition (i.e., the specific dates of their first and last regular season competitions).

Appendix C.6: Study 2 Primary Level Survey Package Including Demographic Survey

**Study 2 Demographic Survey**

*Thank you for taking the time to participate in this study. This questionnaire should take you approximately 20 minutes to complete. Please answer each question honestly. If you feel uncomfortable answering any question, you may choose to skip over it if you wish. All information received is held in confidence. If you have any questions at all, please feel free to contact the research team at any time.*

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**Information Questionnaire**

The aim of this questionnaire is for the investigator to collect information regarding your demographics, history of your weight, menstrual cycle, health and nutrition, and sports training. We ask that you fill this questionnaire in with as much accuracy as possible. If you have any questions, please do not hesitate to ask the investigator.

| Section 1: Demographic Information |

1. What is your date of Birth?        __ __ / __ __ / __ __ __ __
                                      M M    D D    Y Y  Y Y

2. What is your age?          _____ yrs _____ months

3. What is your Nationality?    _____

4. Is English your first language?     **YES** ◯  **NO** ◯

5. How would you describe yourself? You may select more than one or specify, if applicable.

| | |
|---|---|
| Aboriginal | ◯ |
| Arab | ◯ |
| Black | ◯ |
| Chinese | ◯ |
| Filipino | ◯ |
| Japanese | ◯ |
| Latin American | ◯ |
| South Asian *(e.g., East Indian, Pakistani etc.)* | ◯ |
| Southeast Asian *(e.g., Vietnamese, Cambodian etc.)* | ◯ |
| West Asian *(e.g., Iranian, Afghan etc.)* | ◯ |
| White | ◯ |
| Other (please Specify) | ◯ |

_____

## Section 2: Current and History of Weight and Height

6. What is your current estimated height? _____ cm **or** _____ feet/inches

7. What is your current estimated weight? _____ kg **or** _____ lbs

8. What is or do you have an ideal weight you strive to obtain?

   _____ kg    or    _____ lbs    N/A  ◯

9. If you have an ideal weight when were you last at this weight?

   _____ Years _____ Months

10. For your primary sport on a scale from 1 to 10 please rate the level of focus or importance of your sport on aesthetic (looking beautiful or being lean)

   **Non-Aesthetic**                                         **Aesthetic**

   1                              5                              10

11. Do you control your weight during your competitive season?   **YES** ◯ **NO** ◯

12. Do you control your weight during your off season?   **YES** ◯ **NO** ◯

## Section 3: Medical History

13. Have you ever been diagnosed with or treated for any of the following (please check all that apply)

   | | |
   |---|---|
   | Low Bone Density | ◯ |
   | Menstrual Irregularities | ◯ |
   | Deficient / Low Energy Intake | ◯ |
   | None of the Above | ◯ |

## Section 4: Current and History of Menstrual Cycle

14. How old were you when you had your first menstrual period?
   (please complete years and months)   _____ **YEARS** _____ **MONTHS**

15. How frequent is your current menstrual period? (times per year)

   | | |
   |---|---|
   | 0 to 3 times per year | ◯ |
   | 4 to 6 times per year | ◯ |
   | 7 to 9 times per year | ◯ |
   | ≥10 ten times per year | ◯ |

a.  Are you currently taking hormonal and /or oral contraception?

**YES** ○  **NO** ○

b.  Have you ever had a period of time when you had no menstrual bleed for more than 3 months?
**YES**

○  **NO** ○

c.  Please complete the table below indicating your menstrual status at specific age categories.

**Menstrual Status (average cycles per year)**

| Age | (≥ 10) | (4-9) | (0-3) |
|---|---|---|---|
| 10 – 15 years | | | |
| 16 – 20 years | | | |
| 21 – 25 Years | | | |
| 26 – 30 years | | | |
| 30 – 35 years | | | |

## Section 5: Sports Participation and Training History

16.  What is the primary sport you are participating in as an athlete?

| | |
|---|---|
| Ice Hockey | ○ |
| Track and Field | ○ |
| Rowing | ○ |
| Wrestling | ○ |
| Basketball | ○ |
| Gymnastics | ○ |
| Soccer | ○ |
| Football | ○ |
| Golf | ○ |
| Swimming | ○ |
| Field Hockey | ○ |
| Cross-Country Running | ○ |
| Rugby | ○ |
| Tennis | ○ |
| Swimming | ○ |

| Downhill Skiing | ◯ |
| Other (please specify) _____ | ◯ |

17. How old were you when you began training for your primary sport?

**_____ YEARS _____ MONTHS**

18. For your primary sport what is your position/event /discipline (e.g. 800m, shot put, mid fielder)?

_____

_____

19. Do you currently have a coach for your primary sport?     **YES** ◯ **NO** ◯

20. If yes, how long have you been coached for?

**_____ YEARS _____ MONTHS**

21. What is the highest level of competition you have **ever** competed at in your primary sport?

| Local<br>(*Competing against athletes from your city/town*) | ◯ |
| Provincial<br>(*Competing against athletes from around the province*) | ◯ |
| Regional<br>(*Competing against athletes from the Western provinces*) | ◯ |
| National<br>(*Competing at National Championships*) | ◯ |
| Elite for Age<br>(*Competing at an international level against athletes of the same age group*) | ◯ |
| International<br>(*Competing for your country of Citizenship at an international level*) | ◯ |
| Other (please specify) _____ | ◯ |

22. In your primary sport what is the highest level are you **currently** (the past 12 months) competing at?

| Local<br>(*Competing against athletes from your city/town*) | ◯ |
| Provincial<br>(*Competing against athletes from around the province*) | ◯ |
| Regional<br>(*Competing against athletes from the Western provinces*) | ◯ |

| National | |
|---|---|
| (*Competing at National Championships*) | ○ |

| Elite for Age | |
|---|---|
| (*Competing at an international level against athletes of the same age group*) | ○ |

| International | |
|---|---|
| (*Competing for your country of Citizenship at an international level*) | ○ |

| Other (please specify) _____ | ○ |

23. How many years have you competed in your primary sport at your current level?

| ≤ 1 year | ○ |
|---|---|
| 1 to 2 years | ○ |
| 2 to 5 years | ○ |
| 5 to 10 years | ○ |
| More than 10 years | ○ |

24. For your primary sport what seasons per year do you competitively compete (select all that apply)?

| Spring | ○ |
|---|---|
| Summer | ○ |
| Fall | ○ |
| Winter | ○ |

25. For your primary sport do you have an off season when you are not training or competing?

**YES** ○ **NO** ○

26. If yes: How many weeks/months is your off season?  _____ **WEEKS** or _____ **MONTHS**

27. For your primary sport how many days per week do you train?

_____ **Number of Days**

28. For your primary sport how many sessions per **day** do you train?

_____ **Number of Sessions per day**

29. For your primary sport approximately how many hours per week do you train?

_____ **Hours per Week**

30. For your primary sport and primary position/event/discipline, what is your personal best/ personal records (PB/PR)?

PB/PR: _____     N/A     ○

31. For your primary sport and primary position/event/discipline, what is your competitive season record/best (SR/SB)?

    SR/SB: _____    N/A  ○

32. In the past 6 months have you has an injury or illness that impacted your ability to complete your recovery, training, or competitions in your sport?

    **YES** ○ **NO** ○

33. If yes, what was your specific injury or illness?

    _____.

34. If yes, how long were you injured or ill?

    _____.

35. If yes, did you seek medical attention?

    **YES** ○ **NO** ○

36. If yes, have you fully recovered from the injury or illness described above?

    **YES** ○ **NO** ○ **I DON'T KNOW** ○

37. If yes, Please rate the severity of the injury or illness you described above, from 0 = not at all severe to 4 = very severe.
   - ○ 0 not at all severe
   - ○ 1
   - ○ 2
   - ○ 3
   - ○ 4 very severe

**Study 2 Primary Measures - Performance Self-Expectations and Self-Evaluation**

1. Have you competed in the past 7 days?
    a. Yes
    b. No


**If yes**, please answer the following:

---

2.a Overall, how was your performance in your most recent competition? (compared to your normal performance over the past 12 months)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| *Less than* | | | *Similar to* | | | *Better than* |
| *my normal* | | | *my normal* | | | *my normal* |
| *performance* | | | *performance* | | | *performance* |

---

2.b Overall, how would you describe your most recent competition result? (please circle)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| *Negative* | | | **Neutral** | | | *Positive* |

---

2.c In the text box below, describe your most recent competition.  Include the result of your most recent competition (e.g., I won, we finished in third place, I made the team, etc.), how you were involved in the result, and if the overall result was consistent with what you expected.

_____

---

2. Do you have a scheduled competition in the next 7 days?
    a. Yes
    b. No
   **If yes**, please answer the following:

---

1.a Overall, how do you expect to perform in your upcoming competition? (compared to your normal performance over the past 12 months)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| *Less than* | | | *Similar to* | | | *Better than* |
| *my normal* | | | *my normal* | | | *my normal* |
| *performance* | | | *performance* | | | *performance* |

---

1.b Overall, how prepared are you for your upcoming competition? (please circle)

**1**       **2**       **3**       **4**       **5**       **6**       **7**

*Not at all*                                                   *Very well*

*prepared*                                                   *prepared*

---

1.c In the text box below, describe your goals and expectations for your upcoming competition.  Include your expected result (e.g., I will win, we will finish in third place, I will make the team, etc.) and how you expect to be involved in the result of your upcoming competition.

_____

**Study 2 Primary Measures – Sport Performance Perceptions Scale**

*Please read each statement carefully before answering. To the right of each item, indicate how often you behave in the stated manner in your primary sport, using the following scale:*

| Almost Never | | | About Half of the Time | | | Almost Always |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | Almost Never | | | About half of the time | | | Almost Always |
|---|---|---|---|---|---|---|---|
| 1. I recognize that I have a primary sport. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I take my training seriously. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I complete training that is event or position specific. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I complete all of my training. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. When I am training I am focused on improving my sport specific skills. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I am more interested in improving in my sport than winning. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I eat food that helps me train and compete well in my sport. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I get at least 7 hours of sleep every night. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I feel confident in my sport specific skills in *training* situations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. I feel confident in my sport specific skills in *competition* situations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. I feel like I can manage my emotions in my *training*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12. I feel like I can manage my emotions in *competition*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. I am able to stay focused when I am *training*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. I am able to stay focused when I am *competing*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. I feel confident in my level of fitness when *training* for my sport. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. I feel confident in my level of fitness when *competing* in my sport. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. I take rest from *training* when I am told to. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. I take rest from *competition* when I am told to. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. I complete all of my rest and recovery activities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. In my *training* I always try to do my best. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. In *competition* I always try to do my best. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. I take rest after a big competition to improve my recovery. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. I am able to accurately identify areas for growth in my sport. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. I am able to take feedback from coaches and other athletes constructively. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. During *competition* I follow the plans set by my coach. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 26. I am confidant making strategic decisions during *competition*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. I recognize situations in *competition* when I should think strategically. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. I recognize situations in *training* when I should think strategically. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. When *training* I recognize when I can help other athletes/teammates with their training. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. I can tell the difference between being sore and being hurt. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. When injured I do what I can to heal fully before returning to my *training*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. When injured I do what I can to heal fully before returning to *competition*. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Study 2 Primary Measures - Eudaimonic Well-being: Autonomy and Relatedness**

*Below are some sentences that describe personal feelings or experiences athletes might have regarding their sport. Please choose the number that indicates how true each of the phrases are to you. There are no right or wrong answers. Some items may appear similar but please respond to all the statements.*

| Not true at all | | | Somewhat true | | | | Very true |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | | 7 |

1. In my sport, I feel close to other people.　　　　　　1　2　3　4　5　6　7

2. In my sport, I feel I am pursuing goals that are my own.　　1　2　3　4　5　6　7

3. I feel I participate in my sport willingly.　　　　　　1　2　3　4　5　6　7

4. In my sport, I get opportunities to make choices.　　　1　2　3　4　5　6　7

5. In my sport, I feel that I am being forced to do things that I
don't want to do.　　　　　　　　　　　　　　　　　1　2　3　4　5　6　7

6. I show concern for others in my sport.　　　　　　　1　2　3　4　5　6　7

7. I choose to participate in my sport according to my own free
will.　　　　　　　　　　　　　　　　　　　　　　　1　2　3　4　5　6　7

8. In my sport, I have a say in how things are done.　　　1　2　3　4　5　6　7

9. There are people in my sport who care about me.　　　1　2　3　4　5　6　7

10. In my sport, I can take part in the decision-making process.　1　2　3　4　5　6　7

11. In my sport, I really have a sense of wanting to be there.　1　2　3　4　5　6　7

12. In my sport, I feel I am doing what I want to be doing.　　1　2　3　4　5　6　7

13. In my sport, there are people who I can trust.　　　　1　2　3　4　5　6　7

14. I have close relationships with people in my sport.　　1　2　3　4　5　6　7

15. In my sport, I get opportunities to make decisions.　　1　2　3　4　5　6　7

**Study 2 Primary Measures - Eudaimonic Well-being: Mastery**

**What I am Like**

_These are statements that allow people to describe themselves. Please tick the box under each sentence or question to say how much you think the sentence is true for you or how important it is to you. There are no right or wrong answers, since people differ a lot._

**EXAMPLE SENTENCES**

I am very competitive when it comes to playing sports.

| Not true at all for me | Only a little true for me | Sort of true for me | Really true for me |
|---|---|---|---|
| | | x | |

This would mean that the above statement is **_sort of true_** for you.

| | Not true at all for me | Only a little true for me | Sort of true for me | Really true for me |
|---|---|---|---|---|
| 1. I do very well at all kinds of sports. (SC) | | | | |
| 2. I am very confident about my level of physical conditioning and fitness compared to other people. (PC) | | | | |
| 3. I am physically stronger than most other people of my sex. (PS) | | | | |
| 4. I am generally a lot better than average at sports. (SC) | | | | |
| 5. I make certain I take part in some form of regular vigorous physical exercise. (PC) | | | | |
| 6. I feel my muscles are much stronger than most others of my sex. (PS) | | | | |
| 7. I am confident in taking part in sports activities, | | | | |

| | | | | |
|---|---|---|---|---|
| compared to other people. (SC) | | | | |
| 8. I usually have a high level of stamina and fitness. (PC) | | | | |
| 9. When it comes to situations requiring strength, I am one of the first people to step forward. (PS) | | | | |
| 10. I think that I am one of the best when it comes to joining in sports activities. (SC) | | | | |
| 11. I am at ease when it comes to fitness and exercise settings. (PC) | | | | |
| 12. I am confident when it comes to my physical strength. (PS) | | | | |
| 13. I am quicker than most when it comes to picking up new skills in a sports situation. (SC) | | | | |
| 14. I feel really confident about my ability to maintain regular exercise and physical condition. (PC) | | | | |
| 15. I think that I am strong, and have well-developed muscles compared to other people. (PS) | | | | |
| 16. I tend to be among the first to join in sports activities. (SC) | | | | |
| 17. I feel that, compared to most, I always maintain a high level of physical conditioning. (PC) | | | | |
| 18. I am better than others of my sex at dealing with situations requiring physical strength. (PS) | | | | |

# Study 2 Primary Measures - Eudaimonic Well-being: Meaning

*To what degree do you typically feel that your sport activities and experiences:*

|  | Not at all |  |  |  | Very much |  |  |
|---|---|---|---|---|---|---|---|
| 1. are meaningful | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. are valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. are precious | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. are full of significance | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. are something I can treasure | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. are dear to me | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. are playing an important role in some broader picture | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. are making a lot of sense to me | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. fit into the bigger picture | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. all add up | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. contribute to various aspects of myself | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. contribute to my community or the broader world | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Study 2 Primary Measures - Eudaimonic Well-being: Vitality**

*Overall, during my sport experiences:*

|  | **Not at all** | | | | | **Very much** | |
|---|---|---|---|---|---|---|---|
| 1. I feel alive and vital | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Sometimes I am so alive I just want to burst | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I have energy and spirit | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I look forward to each new day | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I nearly always feel awake and alert | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I feel energized | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**Study 2 Primary Measures - Eudaimonic Well-being: Body Appreciation**

*Please read each item and indicate your response using the scale provided.*

|  | Never | Seldom | Sometimes | Often | Always |
|---|---|---|---|---|---|
| 1. I respect my body. | 1 | 2 | 3 | 4 | 5 |
| 2. I feel good about my body. | 1 | 2 | 3 | 4 | 5 |
| 3. On the whole, I am satisfied with my body. | 1 | 2 | 3 | 4 | 5 |
| 4. I feel that my body has at least some good qualities | 1 | 2 | 3 | 4 | 5 |
| 5. I feel that my body has at least some good qualities. | 1 | 2 | 3 | 4 | 5 |
| 6. I take a positive attitude toward my body. | 1 | 2 | 3 | 4 | 5 |
| 7. I am attentive to my body's needs. | 1 | 2 | 3 | 4 | 5 |
| 8. My self-worth is independent of my body shape or weight. | 1 | 2 | 3 | 4 | 5 |
| 9. I do not focus a lot of energy being concerned with my body shape or weight. | 1 | 2 | 3 | 4 | 5 |
| 10. My feelings towards my body are positive, for the most part. | 1 | 2 | 3 | 4 | 5 |
| 11. I engage in healthy behaviours to take care of my body. | 1 | 2 | 3 | 4 | 5 |
| 12. I do not allow unrealistically thin images of women presented in the media to affect my attitudes toward my body. | 1 | 2 | 3 | 4 | 5 |
| 13. Despite its imperfections, I still like my body. | 1 | 2 | 3 | 4 | 5 |

**Study 2 Primary Measures – Intuitive Eating Scale – 2**

*For each item, please check the answer that best characterizes your attitudes or behaviours.*

| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

1. I try to avoid certain foods high in fat, carbohydrates, or calories. (UPE) R

2. I find myself eating when I'm feeling emotional (e.g., anxious, depressed, sad), even when I'm not physically hungry. (EPR) R

3. If I'm craving a certain food, I allow myself to have it. (UPE)

4. I get mad at myself for eating something unhealthy. (UPE) R

5. I find myself eating when I am lonely, even when I'm not physically hungry. (EPR) R

6. I trust my body to tell me when to eat. (RHSC)

7. I trust my body to tell me what to eat. (RHSC)

8. I trust my body to tell me how much to eat. (RHSC)

9. I have forbidden foods that I don't allow myself to eat. (UPE) R

10. I use food to help me soothe my negative emotions. (EPR) R

11. I find myself eating when I am stressed out, even when I'm not physically hungry. (EPR) R

12. I am able to cope with my negative emotions (e.g., anxiety, sadness) without turning to food for comfort. (EPR)

13. When I am bored, I do NOT eat just for something to do. (EPR)

14. When I am lonely, I do NOT turn to food for comfort. (EPR)

15. I find other ways to cope with stress and anxiety than by eating. (EPR)

16. I allow myself to eat food I desire at the moment. (UPE)

17. I do NOT follow eating rules or dieting plans that dictate what, when, and/or how much to eat. (UPE)

18. Most of the time, I desire to eat nutritious foods. (B-FCC)

19. I mostly eat foods that make my body perform efficiently (well). (B-FCC)

20. I mostly eat foods that give my body energy and stamina. (B-FCC)

21. I rely on my hunger signals to tell me when to eat. (RHSC)

22. I rely on my fullness (satiety) signals to tell me when to stop eating. (RHSC)

23. I trust my body to tell me when to stop eating. (RHSC)

**Study 2 Primary Measures - Self-Compassion Scale – Athlete Version**

**HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES IN SPORT**

*Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner in your sport, using the following scale:*

| **Almost never** | | | | **Almost always** |
|:---:|:---:|:---:|:---:|:---:|
| **1** | **2** | **3** | **4** | **5** |

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies as an athlete.

_____ 2. When I'm feeling down as an athlete I tend to obsess and fixate on everything that's wrong in my sport.

_____ 3. When things are going badly for me in my sport, I see the difficulties as part of sport that all athletes go through.

_____ 4. When I think about my inadequacies in sport, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain in sport.

_____ 6. When I fail at something important to me in sport I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other athletes feeling like I am.

_____ 8. When times are really difficult in sport, I tend to be tough on myself.

_____ 9. When something upsets me in sport I try to keep my emotions in balance.

_____ 10. When I feel inadequate in sport, I try to remind myself that feelings of inadequacy are shared by most athletes.

_____ 11. I'm intolerant and impatient towards those aspects of my athletic personality I don't like.

_____ 12. When I'm going through a very hard time in sport, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other athletes are probably happier than I am.

_____ 14. When something painful happens to me in sport I try to take a balanced view of the situation.

_____ 15. I try to see my failings in sport as part of the shared athlete condition.

_____ 16. When I see aspects of myself as an athlete that I don't like, I get down on myself.

_____ 17. When I fail at something in my sport I try to keep things in perspective.

_____ 18. When I'm really struggling, I tend to feel like other athletes must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering in sport.

_____ 20. When something upsets me in sport I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering in sport.

_____ 22. When I'm feeling down in my sport I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own flaws and inadequacies in sport.

_____ 24. When something painful happens in sport I tend to blow the incident out of proportion.

_____ 25. When I fail at something in my sport, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my athletic personality I don't like.

# Study 2 Primary Measures – Self-esteem

*Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle [select]* **SA**. *If you agree with the statements, circle [select]* **A**. *if you disagree, circle [select]* **D**. *if you strongly disagree, circle [select]* **SD**.

1. On the whole, I am satisfied with myself.

| SA | A | D | SD |
|---|---|---|---|

2. At times, I think I am no good at all.

| SA | A | D | SD |
|---|---|---|---|

3. I feel that I have a number of good qualities.

| SA | A | D | SD |
|---|---|---|---|

4. I am able to do things as well as most other people.

| SA | A | D | SD |
|---|---|---|---|

5. I feel I do not have much to be proud of.

| SA | A | D | SD |
|---|---|---|---|

6. I certainly feel useless at times.

| SA | A | D | SD |
|---|---|---|---|

7. I feel that I'm a person of worth, at least on an equal plane with others.

| SA | A | D | SD |
|---|---|---|---|

8. I wish I could have more respect for myself.

| SA | A | D | SD |
|---|---|---|---|

9. All in all, I am inclined to feel that I am a failure.

| SA | A | D | SD |
|---|---|---|---|

10. I take positive attitude toward myself.

| SA | A | D | SD |
|---|---|---|---|

**Study 2 Primary Measures - Self-Criticism Athlete Version**

*Think about the **<u>most significant negative event in sport</u>** over the **<u>past week</u>** that was personally demanding (such as a setback or failure).  Please answer the following on a scale from 1 to 10:*

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. How **often** did you have **self-critical** thoughts about a recent negative sport event? | Had none | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | A lot of the time |
| 2. How **powerful** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very powerful |
| 3. How **intrusive** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very intrusive |
| 4. How **long** did your **self-critical** thoughts about a recent negative sport event last? | Fleetingly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Most of the day |
| 5. How **distressed** were you by your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very distressed |
| 6. How **angry/hostile** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very harassing |
| 7. How easy was it to **distract** yourself from your **self-critical** thoughts about a recent negative sport event? | Not at all easy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very easy |

Appendix C.7: Study 2: Secondary Level Measures

**Study 2 Secondary Measures - Performance Self-Expectations and Self-Evaluation**

1. Have you competed in the past 7 days?

   a. Yes

   b. No

**If yes**, please answer the following:

---

2.a Overall, how was your performance in your most recent competition? (compared to your

normal performance over the past 12 months)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| *Less than my normal performance* | | | *Similar to my normal performance* | | | *Better than my normal performance* |

---

2.b Overall, how would you describe your most recent competition result? (please circle)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| *Negative* | | | **Neutral** | | | *Positive* |

---

2.c In the text box below, describe your most recent competition.  Include the result of your most recent competition (e.g., I won, we finished in third place, I made the team, etc.), how you were involved in the result, and if the overall result was consistent with what you expected.

_____

---

2. Do you have a scheduled competition in the next 7 days?
   a. Yes
   b. No

**If yes**, please answer the following:

---

1.a Overall, how do you expect to perform in your upcoming competition? (compared to your normal performance over the past 12 months)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|

| *Less than* | *Similar to* | *Better than* |
|---|---|---|
| *my normal* | *my normal* | *my normal* |
| *performance* | *performance* | *performance* |

1.b Overall, how prepared are you for your upcoming competition? (please circle)

**1**　　　　**2**　　　　**3**　　　　**4**　　　　**5**　　　　**6**　　　　**7**

*Not at all*　　　　　　　　　　　　　　　　　　　　　　　　　　　　*Very well*
*prepared*　　　　　　　　　　　　　　　　　　　　　　　　　　　　*prepared*

1.c In the text box below, describe your goals and expectations for your upcoming competition.  Include your expected result (e.g., I will win, we will finish in third place, I will make the team, etc.) and how you expect to be involved in the result of your upcoming competition.

_____

**Study 2 Secondary Measures - Self-Compassion Scale – Athlete Version – Short Form**

## HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

*Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:*

| **Almost never** | | | | **Almost always** |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

_____1. When I fail at something important to me in sport I become consumed by feelings of inadequacy.

_____2. I try to be understanding and patient towards those aspects of my athletic personality I don't like.

_____3. When something painful happens to me in sport I try to take a balanced view of the situation.

_____4. When I'm feeling down, I tend to feel like most other athletes are probably happier than I am.

_____5. I try to see my failings in sport as part of the shared athlete condition.

_____6. When I'm going through a very hard time in sport, I give myself the caring and tenderness I need.

_____7. When something upsets me in sport I try to keep my emotions in balance.

_____8. When I fail at something in my sport, I tend to feel alone in my failure.

_____9. When I'm feeling down as an athlete I tend to obsess and fixate on everything that's wrong in my sport.

_____10. When I feel inadequate in sport, I try to remind myself that feelings of inadequacy are shared by most athletes.

_____11. I'm disapproving and judgmental about my own flaws and inadequacies as an athlete.

_____12. I'm intolerant and impatient towards those aspects of my athletic personality I don't like.

**Study 2 Secondary Measures - Self-Criticism in Sport**

*Think about the **most significant negative event in sport** over the **past week** that was personally demanding (such as a setback or failure).  Please answer the following on a scale from 1 to 10:*

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. How **often** did you have **self-critical** thoughts about a recent negative sport event? | Had none | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | A lot of the time |
| 2. How **powerful** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very powerful |
| 3. How **intrusive** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very intrusive |
| 4. How **long** did your **self-critical** thoughts about a recent negative sport event last? | Fleetingly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Most of the day |
| 5. How **distressed** were you by your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very distressed |
| 6. How **angry/hostile** were your **self-critical** thoughts about a recent negative sport event? | Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very harassing |
| 7. How easy was it to **distract** yourself from your **self-critical** thoughts about a recent negative sport event? | Not at all easy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Very easy |

**Study 2 Secondary Measures – Compulsive Exercise Test**

**Instructions**

Listed below are a series of statements regarding exercise. Please read each statement carefully and circle [select] the number that best indicates how true each statement is of you. Please answer all the questions as honestly as you can.

| Never True | Rarely True | Sometimes True | Often True | Usually True | Always True |
|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 |

1. I feel happier and/or more positive after I exercise.

2. I exercise to improve my appearance.

3. I feel less anxious after I exercise.

4. If I feel I have eaten too much, I will do more exercise.

5. If I cannot exercise I feel low or depressed.

6. I feel extremely guilty when I miss an exercise session.

7. I feel less stressed and/or tense after I exercise.

8. I exercise to burn calories and to lose weight.

9. If I cannot exercise I feel agitated and/or irritable.

10. Exercise improves my mood.

11. If I cannot exercise, I worry that I will gain weight.

12. If I cannot exercise I feel angry and/or frustrated.

13. I feel like I've let myself down if I miss an exercise session.

14. If I cannot exercise I feel anxious.

15. I feel less depressed or low after I exercise.

**Study 2 Daily Measures – Performance Evaluations**

1. Today I completed the following in my primary sport (select all that apply):

☐ Rest and recovery

1.a Using the following scale rate your performance today (compared to your normal performance over the past 12 months).

| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|
| *Less than my normal performance* | | | *Similar to my normal performance* | | | *Better than my normal performance* |

☐ Training

1.b Using the following scale rate your performance today (compared to your normal performance over the past 12 months).

| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|
| *Less than my normal performance* | | | *Similar to my normal performance* | | | *Better than my normal performance* |

☐ Competition

1.c Using the following scale rate your performance today (compared to your normal performance over the past 12 months).

| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
|---|---|---|---|---|---|---|
| *Less than my normal performance* | | | *Similar to my normal performance* | | | *Better than my normal performance* |

**Study 2 Daily Measures – Single Items for Self-compassion, Performance, Eudaimonic Well-being, Body-related Well-being, and Self-criticism**

Thinking about your rest/training/competition *today*, respond to the questions below.

1=not at all   2=slightly   3=somewhat   4=moderately   5=very   6=extremely

\_\_\_\_\_ 1. I worked toward my potential as an athlete.

\_\_\_\_\_ 2. I appreciated my body in my sport.

\_\_\_\_\_ 3. I tried to be kind to myself.

\_\_\_\_\_ 4. I tried to make myself feel better.

\_\_\_\_\_ 5. I kept the situation in perspective.

\_\_\_\_\_ 6. I was really hard on myself.

Appendix C.9: Study 2: Descriptive Statistics and Scale Reliabilities for all 17 Timepoints

Table C.9-1.

*Study 2: Time 1 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 2.00 – 7.00 | 4.30 (1.43) | 0.27 | -1.20 | - |
| Outcome [a] | 2.00 – 7.00 | 4.38 (1.30) | -0.72 | 0.70 | - |
| Expectation [a] | 1.00 – 7.00 | 4.64 (1.54) | -1.95 | -0.73 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.76 (1.49) | -1.61 | -0.73 | - |
| SPPS | 3.96 – 6.82 | 5.89 (0.54) | -3.79 | 2.42 | .89 |
| A&R | 3.85 – 7.00 | 6.13 (0.66) | -5.40 | 3.37 | .82 |
| Mastery | 1.20 – 4.80 | 3.82 (0.69) | -3.53 | 1.68 | .93 |
| Meaning | 2.67 – 7.00 | 6.20 (0.76) | -5.77 | 6.55 | .91 |
| Vitality | 1.17 – 7.00 | 5.52 (1.07) | -5.16 | 3.89 | .89 |
| BAS | 2.15 – 5.00 | 3.88 (0.70) | -1.52 | 1.29 | .93 |
| IES-2 | 2.39 – 4.61 | 3.45 (0.46) | -0.13 | 0.90 | .84 |
| SCS-AV | 1.88 – 4.96 | 3.18 (0.68) | 1.82 | 0.78 | .94 |
| RSES | 1.90 – 3.70 | 3.12 (0.40) | -1.69 | 1.14 | .75 |
| SC-AV | 1.00 – 8.57 | 4.43 (1.98) | 0.94 | 2.19 | .92 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version.

Table C.9-2.

*Study 2: Time 2 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.13 (1.49) | -0.99 | -0.57 | - |
| Outcome [a] | 1.00 – 7.00 | 4.55 (1.83) | -0.66 | -1.61 | - |
| Expectation [a] | 1.00 – 7.00 | 4.86 (1.36) | -0.94 | 0.57 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.97 (1.32) | -2.08 | 0.06 | - |
| SCS-AV(SF) | 1.83 – 4.75 | 3.18 (0.72) | 1.19 | -1.15 | .88 |
| SC-AV | 1.00 – 10.00 | 4.46 (2.00) | 5.94 | -0.93 | .94 |
| CET-AV | 1.14 – 4.83 | 2.99 (0.78) | -15.59 | -0.28 | .85 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV = the Self-Compassion Scale (SF) – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.9-3.

*Study 2: Time 3 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.22 (1.70) | -0.97 | -1.13 | - |
| Outcome [a] | 1.00 – 7.00 | 4.44 (1.87) | -0.38 | -1.69 | - |
| Expectation [a] | 1.00 – 7.00 | 4.94 (1.10) | -1.53 | 2.15 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.95 (1.12) | -3.59 | 3.05 | - |
| SCS-AV (SF) | 1.42 – 5.00 | 3.28 (0.80) | -0.21 | -1.18 | .92 |
| SC-AV | 1.00 – 9.57 | 4.03 (2.21) | 2.70 | -0.61 | .95 |
| CET-AV | 1.17 – 5.00 | 2.90 (0.74) | 1.62 | 0.97 | .84 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.9-4.

*Study 2: Time 4 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 2.00 – 7.00 | 4.62 (1.39) | -0.31 | -0.82 | - |
| Outcome [a] | 1.00 – 7.00 | 4.76 (1.50) | -1.71 | 0.02 | - |
| Expectation [a] | 1.00 – 7.00 | 4.90 (1.27) | -1.18 | 0.23 | - |
| Preparedness [a] | 1.00 – 7.00 | 5.07 (1.16) | -2.38 | 2.30 | - |
| SPPS | 3.70 – 7.00 | 5.82 (0.60) | -3.91 | 3.04 | .91 |
| A&R | 3.40 – 7.00 | 6.00 (0.74) | -5.06 | 3.14 | .86 |
| Mastery | 1.00 – 4.00 | 3.24 (0.58) | -4.75 | 3.58 | .95 |
| Meaning | 3.17 – 7.00 | 6.09 (0.85) | -4.71 | 2.33 | .94 |
| Vitality | 2.33 – 7.00 | 5.57 (0.95) | -2.55 | 0.45 | .87 |
| BAS | 2.39 – 5.00 | 3.95 (0.66) | -1.56 | -1.11 | .94 |
| IES-2 | 2.35 – 4.48 | 3.36 (0.44) | 0.84 | -0.63 | .86 |
| SCS-AV | 1.81 – 5.00 | 3.20 (0.73) | 1.92 | -0.50 | .95 |
| RSES | 2.00 – 3.90 | 3.11 (0.42) | -0.58 | -0.66 | .80 |
| SC-AV | 0.00 – 9.14 | 4.21 (2.38) | 1.21 | -2.22 | .95 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version.

Table C.9-5.

*Study 2: Time 5 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 2.00 – 7.00 | 5.04 (1.37) | -0.38 | -1.25 | - |
| Outcome [a] | 1.00 – 7.00 | 4.88 (1.55) | -0.61 | -0.96 | - |
| Expectation [a] | 2.00 – 7.00 | 4.88 (1.09) | -1.02 | 0.94 | - |
| Preparedness [a] | 3.00 – 7.00 | 5.16 (0.90) | -1.98 | 0.24 | - |
| SCS-AV (SF) | 1.58 – 5.00 | 3.267 (0.76) | 0.78 | -0.89 | .90 |
| SC-AV | 1.00 – 8.86 | 3.79 (2.14) | 2.33 | -1.31 | .95 |
| CET-AV | 1.02 – 5.00 | 3.01 (0.82) | 0.06 | -0.22 | .88 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV = the Self-Compassion Scale (SF) – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.9-6.

*Study 2: Time 6 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 7.00 | 4.02 (1.17) | -0.89 | 2.23 | - |
| Training | 2.00 – 6.00 | 3.91 (0.85) | -0.65 | 2.47 | - |
| Competition | 5.00 – 5.00 | 5.00 (0.00) | - | - | - |
| EWB | 1.00 – 6.00 | 3.82 (1.48) | -1.78 | -0.81 | - |
| BRWB | 1.00 – 6.00 | 4.19 (1.17) | -2.33 | 0.72 | - |
| SCS-AV (SI) | 2.00 – 6.00 | 4.48 (0.93) | -1.78 | 0.38 | - |
| SC-AV (SI) | 1.00 – 5.00 | 2.24 (1.25) | 2.33 | -1.04 | - |

*Note*. All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-7.

*Study 2: Time 7 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 7.00 | 3.83 (1.10) | -0.94 | 3.35 | - |
| Training | 2.00 – 7.00 | 4.06 (1.30) | 0.37 | -0.44 | - |
| Competition | 3.00 – 7.00 | 5.25 (1.71) | -0.74 | 0.13 | - |
| EWB | 1.00 – 6.00 | 3.88 (1.36) | -1.97 | -0.36 | - |
| BRWB | 1.00 – 6.00 | 4.24 (1.19) | -2.76 | 0.43 | - |
| SCS-AV (SI) | 1.00 – 6.00 | 4.21 (1.03) | -2.09 | 0.75 | - |
| SC-AV (SI) | 1.00 – 6.00 | 2.40 (1.19) | 2.46 | -0.10 | - |

*Note*. All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-8.

*Study 2: Time 8 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 6.00 | 3.90 (1.01) | -3.59 | 4.90 | - |
| Training | 1.00 – 7.00 | 4.36 (1.30) | 0.02 | 0.55 | - |
| Competition | 3.00 – 7.00 | 5.40 (1.82) | -0.62 | -1.12 | - |
| EWB | 1.00 – 6.00 | 4.08 (1.25) | -2.91 | 0.94 | - |
| BRWB | 1.00 – 6.00 | 4.26 (1.24) | -2.96 | 0.78 | - |
| SCS-AV (SI) | 2.00 – 6.00 | 4.32 (1.04) | -1.05 | -0.91 | - |
| SC-AV (SI) | 1.00 – 5.00 | 2.37 (1.37) | 2.54 | -1.31 | - |

*Note*. All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-9.

*Study 2: Time 9 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 5.00 | 4.00 (0.72) | -5.81 | 13.33 | - |
| Training | 1.00 – 7.00 | 4.51 (1.19) | -1.13 | 1.47 | - |
| Competition | 1.00 – 7.00 | 4.67 (2.07) | -1.39 | 1.13 | - |
| EWB | 1.00 – 6.00 | 4.24 (1.20) | -1.52 | -0.20 | - |
| BRWB | 1.00 – 6.00 | 4.09 (1.24) | -1.74 | -0.77 | - |
| SCS-AV (SI) | 1.00 – 6.00 | 4.19 (1.27) | -1.56 | -0.93 | - |
| SC-AV (SI) | 1.00 – 6.00 | 2.34 (1.26) | 2.60 | -0.26 | - |

*Note*. All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-10.

*Study 2: Time 10 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 6.00 | 3.61 (1.13) | -1.39 | 1.01 | - |
| Training | 1.00 – 7.00 | 3.94 (1.41) | -0.77 | -0.32 | - |
| Competition | 5.00 – 5.00 | 5.00 (0.00) | - | - | - |
| EWB | 1.00 – 6.00 | 4.00 (1.47) | -1.91 | -0.98 | - |
| BRWB | 1.00 – 6.00 | 4.26 (1.33) | -3.18 | 0.82 | - |
| SCS-AV (SI) | 1.00 – 6.00 | 4.16 (1.21) | -2.35 | 0.55 | - |
| SC-AV (SI) | 1.00 – 6.00 | 2.37 (1.27) | 2.83 | -0.30 | - |

*Note*. All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-11.

*Study 2: Time 11 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 7.00 | 4.11 (1.14) | -0.89 | 3.62 | - |
| Training | 1.00 – 7.00 | 4.50 (1.20) | -0.63 | 2.53 | - |
| Competition | 1.00 – 4.00 | 3.00 (1.22) | -1.49 | 1.00 | - |
| EWB | 1.00 – 6.00 | 3.77 (1.39) | -1.57 | -0.88 | - |
| BRWB | 1.00 – 6.00 | 4.17 (1.20) | -2.44 | 0.35 | - |
| SCS-AV (SI) | 2.00 – 6.00 | 4.27 (1.10) | -0.96 | -0.65 | - |
| SC-AV (SI) | 1.00 – 6.00 | 2.33 (1.46) | 2.71 | -1.05 | - |

*Note.* All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-12.

*Study 2: Time 12 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Rest & Recovery | 1.00 – 7.00 | 3.84 (1.21) | -0.43 | 1.50 | - |
| Training | 1.00 – 7.00 | 4.55 (1.47) | -1.08 | 0.96 | - |
| Competition | 3.00 – 7.00 | 4.53 (1.36) | 0.72 | -1.10 | - |
| EWB | 1.00 – 6.00 | 3.91 (1.46) | -1.86 | -0.80 | - |
| BRWB | 1.00 – 6.00 | 4.06 (1.28) | -2.00 | -0.38 | - |
| SCS-AV (SI) | 2.00 – 6.00 | 3.97 (1.09) | 0.20 | -1.06 | - |
| SC-AV (SI) | 1.00 – 6.00 | 2.44 (1.37) | 3.47 | 0.45 | - |

*Note.* All daily burst measures were single item measures; therefore, Cronbach's alpha cannot be calculated. Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being, SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism.

Table C.9-13.

*Study 2: Time 13 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.73 (1.74) | -2.01 | -0.30 | - |
| Outcome [a] | 1.00 – 7.00 | 5.33 (1.69) | -2.18 | 0.02 | - |
| Expectation [a] | 1.00 – 7.00 | 4.56 (1.69) | -1.72 | 0.02 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.67 (1.56) | -2.18 | 0.65 | - |
| SCS-AV (SF) | 1.83 – 5.00 | 3.24 (0.73) | 0.98 | -1.17 | .90 |
| SC-AV | 1.00 – 8.14 | 3.64 (1.97) | 1.46 | -1.75 | .93 |
| CET-AV | 1.03 – 5.00 | 2.95 (0.80) | 0.96 | -0.12 | .87 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV = the Self-Compassion Scale (SF) – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.9-14.

*Study 2: Time 14 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.76 (1.43) | -1.12 | -0.21 | - |
| Outcome [a] | 1.00 – 7.00 | 4.76 (1.70) | -1.43 | -1.05 | - |
| Expectation [a] | 1.00 – 7.00 | 5.00 (1.26) | -2.30 | 1.66 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.91 (1.32) | -2.64 | 2.23 | - |
| SPPS | 2.67 – 6.90 | 5.75 (0.63) | -5.71 | 11.47 | .92 |
| A&R | 3.25 – 7.00 | 5.85 (0.93) | -4.07 | 0.89 | .90 |
| Mastery | 1.28 – 4.00 | 3.28 (0.56) | -4.16 | 3.08 | .94 |
| Meaning | 3.00 – 7.00 | 6.06 (0.98) | -4.61 | 1.81 | .96 |
| Vitality | 2.67 – 7.00 | 5.53 (1.04) | -3.08 | 0.33 | .90 |
| BAS | 2.00 – 5.00 | 3.93 (0.68) | -1.61 | -0.39 | .94 |
| IES-2 | 2.44 – 4.74 | 3.50 (0.46) | 1.79 | 0.64 | .87 |
| SCS-AV | 1.92 – 4.96 | 3.35 (0.73) | 1.20 | -0.73 | .96 |
| RSES | 1.90 – 3.90 | 3.16 (0.42) | -0.74 | -0.30 | .81 |
| SC-AV | 1.00 – 10.00 | 3.82 (2.13) | 2.00 | -0.82 | .94 |

*Note*. [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version.

Table C.9-15.

*Study 2: Time 15 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.82 (1.72) | -1.75 | -0.47 | - |
| Outcome [a] | 1.00 – 7.00 | 4.92 (1.76) | -1.63 | -0.64 | - |
| Expectation [a] | 1.00 – 7.00 | 4.97 (1.50) | -1.72 | 0.24 | - |
| Preparedness [a] | 1.00 – 7.00 | 5.13 (1.49) | -2.07 | 0.82 | - |
| SCS-AV (SF) | 1.83 – 5.00 | 3.35 (0.82) | 0.76 | -1.36 | .92 |
| SC-AV | 1.00 – 8.86 | 3.83 (2.20) | 1.45 | -1.53 | .96 |
| CET-AV | 1.02 – 5.00 | 2.92 (0.85) | -0.55 | -0.12 | .88 |

*Note.* [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV = the Self-Compassion Scale (SF) – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.9-16.

*Study 2: Time 16 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.53 (1.54) | -1.18 | -0.26 | - |
| Outcome [a] | 1.00 – 7.00 | 5.00 (1.71) | -1.34 | -0.53 | - |
| Expectation [a] | 1.00 – 7.00 | 4.81 (1.41) | -1.21 | -0.39 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.64 (1.48) | -1.74 | 0.97 | - |
| SCS-AV (SF) | 1.58 – 4.92 | 3.34 (0.78) | 0.11 | -0.60 | .91 |
| SC-AV | 1.00 – 7.14 | 3.19 (1.81) | 1.46 | -1.75 | .92 |
| CET-AV | 1.29 – 5.00 | 2.99 (0.90) | 1.12 | -0.97 | .91 |

*Note.* [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, SCS-AV = the Self-Compassion Scale (SF) – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.9-17.

*Study 2: Time 17 Descriptive Statistics and Scale Reliabilities*

| Measure | Observed Range | Mean (SD) | Skewness | Kurtosis | α |
|---|---|---|---|---|---|
| Evaluation [a] | 1.00 – 7.00 | 4.64 (1.43) | -1.96 | 0.29 | - |
| Outcome [a] | 1.00 – 7.00 | 4.80 (1.47) | -2.52 | 0.77 | - |
| Expectation [a] | 1.00 – 7.00 | 5.00 (1.75) | -1.97 | -0.16 | - |
| Preparedness [a] | 1.00 – 7.00 | 4.90 (1.72) | -1.72 | -0.33 | - |
| SPPS | 2.46 – 7.00 | 5.80 (0.73) | -5.18 | 8.93 | .94 |
| A&R | 3.15 – 7.00 | 5.92 (0.99) | -3.68 | 0.61 | .91 |
| Mastery | 1.06 – 4.00 | 3.27 (0.62) | -4.06 | 2.22 | .96 |
| Meaning | 1.88 – 7.00 | 6.02 (1.12) | -6.68 | 6.96 | .97 |
| Vitality | 2.00 – 7.00 | 5.52 (1.24) | -3.80 | 1.07 | .95 |
| BAS | 2.23 – 5.00 | 3.95 (0.69) | -1.16 | -1.10 | .93 |
| IES-2 | 2.70 – 4.78 | 3.60 (0.50) | 2.56 | -0.28 | .89 |
| SCS-AV | 1.73 – 5.00 | 3.33 (0.79) | 0.50 | -1.06 | .96 |
| RSES | 2.20 – 4.00 | 3.18 (0.42) | -0.14 | -1.43 | .79 |
| SC-AV | 1.00 – 8.29 | 3.60 (2.31) | 1.80 | -1.90 | .96 |

*Note.* [a] = single item measure, therefore Cronbach's alpha cannot be calculated. Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version.

Appendix C.10: Initial Psychometric Assessment of the Four Timepoints of the Developed Sport Performance Perceptions Scale (SPPS)

This appendix includes a brief description of initial psychometric analyses conducted to examine the structure of the Sport Performance Perceptions Scale (SPPS). All available data collected during Study 2 was included in the below Structural Equation Model (SEM) analyses, rather than only the 120 athletes with complete data presented and described in Chapter 4. The initial psychometric assessment for the SPPS, conducted in M*plus* (version 8), was primarily focused on the multidimensionality and fit of the model within each of the four timepoints. Therefore, a single factor and a 5 factor SEM analysis was completed with the four timepoints to assess the dimensionality and fit of the collected data.

The results of the SEM's are presented below in Table C.10-1. and Table C.10-2. including the model fit results for a single factor and 5 factor models. Within the single factor model many items (up to 10 items per timepoint) did not contribute to the model; however, within the tested 5 factor models, between only 1 to 3 items per timepoint did not contribute to the respective models. Further, the single factor models had consistently poorer model fit indices than the 5 factor model for the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR) results. Together these results suggest that the multidimensional 5 factor model is the appropriate structure for the SPPS measure. Though the results suggest that the model has poor fit indices for both the single and 5 factor models. However, the 5 factor model is a better fit across timepoints, evidenced by consistently higher CFI and TFI and lower RMSEA and SRMR values across the 4 timepoints. Therefore, based on the conclusions of this psychometric assessment the 5 factor model was applied for scoring by sub-scale in Study 2.

There are however a few caveats to consider regarding the results of this initial psychometric evaluation of the SPPS. First, across the four timepoints the SPPS scores were negatively skewed with a high mean score (as noted in Appendix C.9.), demonstrating the potential for ceiling effects. It is possible that the poor fit is due to ceiling effects observed in the data, which is likely resulted from the athletes' high level of sport participation in Study 2. Second, it is possible that the poor fit is due to low $N$ for these SEM analyses. Specifically, the $N$'s do not meet the minimum sample guidelines, at any of the four timepoints, and at times have

fewer total observations ($N$) than parameters that are free to vary.  These caveats highlight the need for further examination of the measure items, structure, and model fit.

Table C.10-1.

*Overview and Examination of the SPPS Single Factor Models*

| Model Fit Indices | Time 1 ($n = 179$) | Time 4 ($n = 137$) | Time 14 ($n = 93$) | Time 17 ($n = 83$) |
|---|---|---|---|---|
| # of Free Parameters | 96 | 96 | 96 | 96 |
| RMSEA | | | | |
| Estimate | 0.129 | 0.145 | 0.143 | 0.161 |
| 90% C.I. | 0.123-0.136 | 0.138-0.153 | 0.134-0.152 | 0.151-0.170 |
| P-value | < 0.000 | < 0.000 | < 0.000 | < 0.000 |
| CFI | .51 | .42 | .47 | .51 |
| TFI | .47 | .37 | .43 | .47 |
| SRMR | 0.102 | 0.122 | 0.116 | 0.121 |

*Note.*  RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TFI = Tucker Lewis Index; SRMR = Standardized Root Mean Square Residual.

Table C.10-2.

*Overview and Examination of the SPPS 5 Factor Models*

| Model Fit Indices | Time 1 ($n = 179$) | Time 4 ($n = 137$) | Time 14 ($n = 93$) | Time 17 ($n = 83$) |
|---|---|---|---|---|
| # of Free Parameters | 106 | 106 | 106 | 106 |
| RMSEA | | | | |
| Estimate | 0.114 | 0.129 | 0.125 | 0.141 |
| 90% C.I. | 0.107-0.120 | 0.122-0.137 | 0.116-0.134 | 0.131-0.150 |
| P-value | < 0.000 | <.000 | <.000 | <.000 |
| CFI | .63 | .55 | .60 | .63 |
| TLI | .59 | .50 | .56 | .60 |
| SRMR | 0.093 | 0.112 | 0.139 | 0.118 |

*Note.*  RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TFI = Tucker Lewis Index; SRMR = Standardized Root Mean Square Residual.

Appendix C.11: Study 2: Full Correlation Results for all 17 Timepoints (regarding Hypothesis 1 and Hypothesis 2)

Table C.11-1.

*Study 2: Time 1 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SCS-AV | - | | | | | | | | | | | | |
| 2. RSES | .59*** | - | | | | | | | | | | | |
| 3. SC-AV | -.69*** | -.53*** | - | | | | | | | | | | |
| 4. SPPS | .24** | .25** | -.14^ | - | | | | | | | | | |
| 5. Evaluation | .28* | .21 | -.21 | .59*** | - | | | | | | | | |
| 6. Outcome | .18 | .00 | -.15 | .38* | .52*** | - | | | | | | | |
| 7. Expectation | .14 | .20* | -.00 | .29** | .49** | .21 | - | | | | | | |
| 8. Preparedness | .13 | .26* | -.03 | .35** | .62*** | .43* | .80*** | - | | | | | |
| 9. A&R | .20* | .27** | -.12^ | .42*** | .23^ | .00 | .02 | .21* | - | | | | |
| 10. Mastery | .21* | .36*** | -.23** | .40*** | .26^ | .12 | .11 | .18^ | .23** | - | | | |
| 11. Meaning | .17* | .30*** | -.05 | .42*** | .40** | .11 | .23* | .26* | .33** | .29** | - | | |
| 12. Vitality | .27** | .43*** | -.21* | .43*** | .38* | .15 | .05 | .12 | .46*** | .40*** | .58*** | - | |
| 13. BAS | .50*** | .59*** | -.38*** | .44*** | .27^ | .03 | .19* | .20* | .28** | .38*** | .30** | .34*** | - |
| 14. IES-2 | .43*** | .32*** | -.31*** | .26** | .18 | .20 | .36*** | .31** | .08 | .27** | .14^ | .20* | .50*** |

*Note.* ^ = *p* < .1, * = *p* < 0.05, ** = *p* < 0.01, *** = *p* < .001 (all 1-tailed).
SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version, SPPS = Sport Performance Perceptions Scale, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = the Intuitive Eating Scale -2.

Table C.11-2.

*Study 2: Time 2 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SF) | - | | | | | |
| 2. SC-AV | -.72*** | - | | | | |
| 3. Evaluation | .07 | -.036 | - | | | |
| 4. Outcome | .21* | -.28* | .76*** | - | | |
| 5. Expectation | .14 | -.14 | .31* | .27* | - | |
| 6. Preparedness | .17^ | -.12 | .42** | .45** | .71*** | - |
| 7. CET-AV | -.25** | .20* | .01 | -.11 | -.14 | -.30** |

*Note.* ^ = p < .1, * = p < 0.05, ** = p < 0.01, *** = $p$ < .001 (all 1-tailed).
SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.11-3.

*Study 2: Time 3 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SF) | - | | | | | |
| 2. SC-AV | -.69*** | - | | | | |
| 3. Evaluation | .31* | -.33** | - | | | |
| 4. Outcome | .28* | -.24* | .73*** | - | | |
| 5. Expectation | .01 | -.01 | .56*** | .49** | - | |
| 6. Preparedness | -.02 | .18^ | .28* | .15 | .68*** | - |
| 7. CET-AV | -.24** | .26** | -.167 | -.04 | .21* | .28* |

*Note.* ^ = $p$ < .1, * = $p$ < 0.05, ** = $p$ < 0.01, *** = $p$ < .000 (all 1-tailed).
SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.11-4.

*Study 2: Time 4 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SCS-AV | - | | | | | | | | | | | | |
| 2. RSES | .63*** | - | | | | | | | | | | | |
| 3. SC-AV | -.63*** | -.58*** | - | | | | | | | | | | |
| 4. SPPS | .38*** | .27** | .00 | - | | | | | | | | | |
| 5. Evaluation | .48*** | .35** | -.38** | .40** | - | | | | | | | | |
| 6. Outcome | .49*** | .43*** | -.42** | .33** | .77*** | - | | | | | | | |
| 7. Expectation | -.03 | -.03 | .17 | .30** | .50** | .49** | - | | | | | | |
| 8. Preparedness | .06 | .03 | .02 | .40** | .49** | .53*** | .78*** | - | | | | | |
| 9. A&R | .36*** | .40*** | -.22* | .51*** | .34** | .39** | .15 | .25* | - | | | | |
| 10. Mastery | .16^ | .27** | -.01 | .43*** | .14 | .19^ | .33** | .33** | .36*** | - | | | |
| 11. Meaning | .20* | .27** | -.09 | .49*** | .03 | .20^ | .16 | .24* | .57*** | .34*** | - | | |
| 12. Vitality | .38*** | .43*** | -.12 | .43*** | .11 | .31** | .21^ | .26* | .55*** | .40*** | .71*** | - | |
| 13. BAS | .44*** | .47*** | -.22* | .50*** | .15 | .05 | .05 | .08 | .23** | .33*** | .29** | .34*** | - |
| 14. IES-2 | .40*** | .32*** | -.08 | .37*** | .22^ | .01 | .11 | .14 | .25** | .27** | .13^ | .24** | .51*** |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p$ .001 (all 1-tailed).
SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version, SPPS = Sport Performance Perceptions Scale, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = the Intuitive Eating Scale -2.

Table C.11-5.

*Study 2: Time 5 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SF) | - | | | | | |
| 2. SC-AV | -.69*** | - | | | | |
| 3. Evaluation | .18 | -.23^ | - | | | |
| 4. Outcome | .13 | -.46 | .51*** | - | | |
| 5. Expectation | .08 | -.14 | .16 | -.06 | - | |
| 6. Preparedness | -.05 | .03 | .48** | .41* | .71*** | - |
| 7. CET-AV | -.264** | .29** | .10 | .13 | -.16 | .12 |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.


Table C.11-6.

*Study 2: Time 6 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.28* | - | | | | |
| 3. Rest & Recovery | .21^ | -.02 | - | | | |
| 4. Training | .06 | .29^ | a. | - | | |
| 5. Competition [a] | a. | a. | a. | a. | - | |
| 6. EWB | .41*** | .17^ | .37** | .14 | a. | - |
| 7. BRWB | .54*** | -.08 | .21^ | .19 | a. | .72*** |

*Note.* a = cannot be computed, ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** $p = < .001$ (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-7.

*Study 2: Time 7 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.30** | - | | | | |
| 3. Rest & Recovery | .29* | -.03 | - | | | |
| 4. Training | -.04 | -.10 | .85** | - | | |
| 5. Competition | .87^ | a. | a. | a. | - | |
| 6. EWB | .48*** | -.01 | .29* | .37* | .85^ | - |
| 7. BRWB | .76*** | -.23* | .37** | .11 | -.26 | .56*** |

*Note.* a = cannot be computed, ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-8.

*Study 2: Time 8 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.49*** | - | | | | |
| 3. Rest & Recovery | .24 | -.00 | - | | | |
| 4. Training | .08 | .12 | .61 | - | | |
| 5. Competition | .43 | -.78^ | a. | a. | - | |
| 6. EWB | .39*** | -.06 | .51** | .48** | .94** | - |
| 7. BRWB | .76*** | -.33** | .27^ | .379** | .59 | .54*** |

*Note.* a = cannot be computed, ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = < .001 (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-9.

*Study 2: Time 9 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.18^ | - | | | | |
| 3. Rest & Recovery | .04 | -.18 | - | | | |
| 4. Training | .40** | .19 | a. | - | | |
| 5. Competition | .83* | .11 | a. | a. | - | |
| 6. EWB | .45*** | .27* | -.39* | .71*** | .11 | - |
| 7. BRWB | .82*** | -.08 | -.08 | .45** | .351 | .56*** |

*Note.* a = cannot be computed, ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-10.

*Study 2: Time 10 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.20* | - | | | | |
| 3. Rest & Recovery | .30^ | -.31^ | - | | | |
| 4. Training | .44** | -.04 | .82* | - | | |
| 5. Competition | a. | a. | a. | a. | - | |
| 6. EWB | .46*** | .11 | .12 | .81*** | a. | - |
| 7. BRWB | .71*** | -.14 | .12 | .52*** | a. | .64*** |

*Note.* a = cannot be computed, ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-11.

*Study 2: Time 11 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.17^ | - | | | | |
| 3. Rest & Recovery | .13 | -.21 | - | | | |
| 4. Training | .48** | .17 | 1.00*** | - | | |
| 5. Competition | .17 | .00 | a. | a. | - | |
| 6. EWB | .25* | .28* | .15 | .48** | .67 | - |
| 7. BRWB | .56*** | .07 | -.04 | .50** | .63 | .63*** |

*Note.* a = cannot be computed, ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-12.

*Study 2: Time 12 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SI) | - | | | | | |
| 2. SC-AV (SI) | -.06 | - | | | | |
| 3. Rest & Recovery | .09 | -.23^ | - | | | |
| 4. Training | .48* | -.02 | a. | - | | |
| 5. Competition | .32 | .04 | a. | a. | - | |
| 6. EWB | .42*** | .17^ | .13 | .53** | .65** | - |
| 7. BRWB | .67*** | .10 | .24^ | .21 | .34 | .61*** |

*Note.* a = cannot be computed, ^ = p < .1, * = p < 0.05, ** = p < 0.01 (all 1-tailed).
SCS-AV (SI) = Single item for self-compassion, SC-AV (SI) = Single item for self-criticism, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.11-13.

*Study 2: Time 13 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SF) | - | | | | | |
| 2. SC-AV | -.49*** | - | | | | |
| 3. Evaluation | .29* | -.35* | - | | | |
| 4. Outcome | .56*** | -.45** | .57*** | - | | |
| 5. Expectation | .21*** | .09 | .19 | .59** | - | |
| 6. Preparedness | .34* | -.07 | .49* | .71*** | .81*** | - |
| 7. CET-AV | -.23* | .30** | -.03 | -.03 | .21^ | .17 |

*Note.* ^ = *p* < .1, * = *p* < 0.05, ** = *p* < 0.01, *** = *p* < .001 (all 1-tailed).
SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.11-14.

*Study 2: Time 14 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SCS-AV | - | | | | | | | | | | | | |
| 2. RSES | .21 | - | | | | | | | | | | | |
| 3. SC-AV | -.54*** | -.27** | - | | | | | | | | | | |
| 4. SPPS | .28** | .29** | -.19* | - | | | | | | | | | |
| 5. Evaluation | .21 | -.12 | -.31* | .06 | - | | | | | | | | |
| 6. Outcome | .04 | -.01 | -.19 | .03 | .70*** | - | | | | | | | |
| 7. Expectation | .14 | -.03 | -.11 | -.09 | .58** | .69*** | - | | | | | | |
| 8. Preparedness | .18 | .12 | -.03 | .16 | .52** | .30^ | .62*** | - | | | | | |
| 9. A&R | .21* | .27** | -.08 | .46*** | .17 | .20 | .07 | .11 | - | | | | |
| 10. Mastery | .25* | .39*** | -.12 | .50*** | .33* | .45** | .16 | .04 | .30** | - | | | |
| 11. Meaning | .11 | .38*** | -.10 | .32** | .13 | .23^ | -.00 | .02 | .48*** | .33** | - | | |
| 12. Vitality | .22* | .46*** | -.07 | .40*** | -.04 | .09 | .03 | .07 | .48*** | .37*** | .77*** | - | |
| 13. BAS | .42*** | .53*** | -.20* | .44*** | -.15 | -.09 | .10 | .17 | .10 | .36** | .21* | .27** | - |
| 14. IES-2 | .44*** | .44*** | -.18^ | .41*** | .45** | .41** | .16 | .23^ | .25* | .41*** | .19* | .19^ | .42*** |

*Note.* ^ = *p* < .1, * = *p* < 0.05, ** = *p* < 0.01, *** = *p* < .001 (all 1-tailed).
SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version, SPPS = Sport Performance Perceptions Scale, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = the Intuitive Eating Scale -2.

Table C.11-15.

*Study 2: Time 15 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SF) | - | | | | | |
| 2. SC-AV | -.62*** | - | | | | |
| 3. Evaluation | .24^ | -.41** | - | | | |
| 4. Outcome | .37* | -.45** | .91*** | - | | |
| 5. Expectation | -.12 | .03 | .24 | .12 | - | |
| 6. Preparedness | -.08 | -.14 | .49** | .38* | .85*** | - |
| 7. CET-AV | -.30** | .37** | .12 | .08 | .28* | .25^ |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.11-16.

*Study 2: Time 16 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. SCS-AV(SF) | - | | | | | |
| 2. SC-AV | -.61*** | - | | | | |
| 3. Evaluation | -.12 | -.07 | - | | | |
| 4. Outcome | -.04 | -.07 | .75*** | - | | |
| 5. Expectation | -.243^ | .24^ | .55** | .45* | - | |
| 6. Preparedness | -.26^ | .25^ | .28^ | .05 | .72*** | - |
| 7. CET-AV | -.26* | .33** | .07 | .29* | -.01 | .04 |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$ (all 1-tailed).
SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), SC-AV = Self-Criticism – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.11-17.

*Study 2: Time 17 Correlations Between Self-compassion, Sport Performance Perceptions, and Well-being*

| Measure | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SCS-AV | - | | | | | | | | | | | | |
| 2. RSES | .66*** | - | | | | | | | | | | | |
| 3. SC-AV | -.56*** | -.45*** | - | | | | | | | | | | |
| 4. SPPS | .41*** | .50*** | -.19^ | - | | | | | | | | | |
| 5. Evaluation | .16 | -.00 | -.15 | -.04 | - | | | | | | | | |
| 6. Outcome | -.01 | -.01 | -.17 | .08 | .70*** | - | | | | | | | |
| 7. Expectation | -.19 | -.03 | .09 | .16 | .32 | .56* | - | | | | | | |
| 8. Preparedness | -.02 | .16 | -.02 | .29^ | .40^ | .73*** | .87*** | - | | | | | |
| 9. A&R | .21* | .36** | -.13 | .47*** | .13 | .08 | -.30^ | -.22 | - | | | | |
| 10. Mastery | .30** | .41*** | -.22* | .31** | .17 | .36** | .03 | .04 | .35** | - | | | |
| 11. Meaning | .08 | .34** | -.05 | .26* | .00 | .03 | .03 | -.02 | .60*** | .30** | - | | |
| 12. Vitality | .29** | .43*** | -.11 | .37** | .09 | .11 | -.13 | -.20 | .58*** | .42*** | .76*** | - | |
| 13. BAS | .56*** | .59*** | -.29** | .34** | .07 | .07 | .05 | .11 | .23* | .38*** | .30** | .39*** | - |
| 14. IES-2 | .56*** | .43*** | -.20* | .45*** | .23^ | .24^ | -.11 | .12 | .23* | .24* | .29** | .40*** | .49*** |

*Note.* ^ = *p* < .1, * = *p* < 0.05, ** = *p* < 0.01, *** = *p* < .001 (all 1-tailed).
SCS-AV = the Self-Compassion Scale – Athlete Version, RSES = the Rosenberg Self-Esteem Scale, SC-AV = Self-Criticism – Athlete Version, SPPS = Sport Performance Perceptions Scale, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = the Intuitive Eating Scale -2.

Appendix C.12: Study 2: Full Regression Results for all 17 Timepoints (regarding Hypothesis 3)

Table C.12-1.

*Study 2: Time 1 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .04 | .04 |
| | | SC-AV | -.15 | .12 | -.21 | | |
| | Step 2: | | | | | .08 | .04 |
| | | SC-AV | .01 | .18 | .01 | | |
| | | SCS-AV | .66 | .55 | .29 | | |
| Outcome | Step 1: | | | | | .02 | .02 |
| | | SC-AV | -.10 | .11 | -.15 | | |
| | Step 2: | | | | | .03 | .01 |
| | | SC-AV | -.02 | .16 | -.03 | | |
| | | SCS-AV | .32 | .51 | .15 | | |
| Expectation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.00 | .09 | -.00 | | |
| | Step 2: | | | | | .04 | .04^ |
| | | SC-AV | .14 | .12 | .18 | | |
| | | SCS-AV | .58 | .35 | .26^ | | |
| Preparation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.02 | .08 | -.03 | | |
| | Step 2: | | | | | .03 | .03 |
| | | SC-AV | .09 | .12 | .13 | | |
| | | SCS-AV | .47 | .34 | .22 | | |
| SPPS | Step 1: | | | | | .02 | .02 |
| | | SC-AV | -.04 | .03 | -.14 | | |
| | Step 2: | | | | | .06 | .04* |
| | | SC-AV | .01 | .03 | .04 | | |
| | | SCS-AV | .21 | .10 | .27* | | |
| A&R | Step 1: | | | | | .01 | .01 |
| | | SC-AV | -.04 | .03 | -.12 | | |
| | Step 2: | | | | | .04 | .03^ |
| | | SC-AV | .01 | .04 | .04 | | |
| | | SCS-AV | .22 | .12 | .22^ | | |

| | | | B | SE | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Mastery | Step 1: | | | | | .05 | .05* |
| | | SC-AV | -.08 | .03 | -.23* | | |
| | Step 2: | | | | | .06 | .00 |
| | | SC-AV | -.06 | .04 | -.17 | | |
| | | SCS-AV | .09 | .13 | .09 | | |
| Meaning | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.02 | .04 | -.05 | | |
| | Step 2: | | | | | .03 | .03^ |
| | | SC-AV | .05 | .05 | .12 | | |
| | | SCS-AV | .27 | .14 | .25^ | | |
| Vitality | Step 1: | | | | | .04 | .04* |
| | | SC-AV | -.11 | .05 | -.21* | | |
| | Step 2: | | | | | .07 | .03^ |
| | | SC-AV | -.02 | .07 | -.04 | | |
| | | SCS-AV | .38 | .19 | .24^ | | |
| BAS | Step 1: | | | | | .14 | .14*** |
| | | SC-AV | -.13 | .030 | -.38*** | | |
| | Step 2: | | | | | .25 | .11*** |
| | | SC-AV | -.02 | .04 | .04 | | |
| | | SCS-AV | .47 | .11 | .45*** | | |
| IES-2 | Step 1: | | | | | .10 | .10** |
| | | SC-AV | -.07 | .020 | -.31** | | |
| | Step 2: | | | | | .19 | .09*** |
| | | SC-AV | -.01 | .03 | -.02 | | |
| | | SCS-AV | .29 | .08 | .42*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV = the Self-Criticism-Athlete Version, SCS-AV = the Self-Compassion Scale – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = Intuitive Eating Scale - 2.

Table C.12-2.

*Study 2: Time 2 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | .00 | .00 |
| | SC-AV | -.03 | .09 | -.04 | | |
| | Step 2: | | | | .00 | .00 |
| | SC-AV | -.01 | .13 | -.01 | | |
| | SCS-AV (SF) | .07 | .36 | .03 | | |
| Outcome | Step 1: | | | | .08 | .08* |
| | SC-AV | -.26 | .11 | -.28* | | |
| | Step 2: | | | | .08 | .00 |
| | SC-AV | -.27 | .16 | -.30^ | | |
| | SCS-AV (SF) | -.06 | .43 | -.03 | | |
| Expectation | Step 1: | | | | .02 | .02 |
| | SC-AV | -.09 | .08 | -.14 | | |
| | Step 2: | | | | .02 | .00 |
| | SC-AV | -.06 | .13 | -.09 | | |
| | SCS-AV (SF) | .11 | .33 | .06 | | |
| Preparation | Step 1: | | | | .01 | .01 |
| | SC-AV | -.08 | .08 | -.12 | | |
| | Step 2: | | | | .03 | .01 |
| | SC-AV | .02 | .12 | .02 | | |
| | SCS-AV (SF) | .32 | .32 | .18 | | |
| CET-AV | Step 1: | | | | .04 | .04* |
| | SC-AV | .08 | .04 | .20* | | |
| | Step 2: | | | | .07 | .03 |
| | SC-AV | .01 | .06 | .03 | | |
| | SCS-AV (SF) | -.25 | .15 | -.23 | | |

*Note.* ^ = p < .1, * = p < 0.05, ** = p < 0.01.
SC-AV = Self-Criticism – Athlete Version, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.12-3.

*Study 2: Time 3 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .11 | .11* |
| | | SC-AV | -.24 | .10 | -.33* | | |
| | Step 2: | | | | | .12 | .01 |
| | | SC-AV | -.17 | .134 | -.23 | | |
| | | SCS-AV (SF) | .314 | .387 | .15 | | |
| Outcome | Step 1: | | | | | .06 | .06^ |
| | | SC-AV | .19 | .11 | -.24^ | | |
| | Step 2: | | | | | .08 | .02 |
| | | SC-AV | -.08 | .15 | -.10 | | |
| | | SCS-AV (SF) | .48 | .44 | .21 | | |
| Expectation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.01 | .06 | -.01 | | |
| | Step 2: | | | | | .00 | .00 |
| | | SC-AV | -.01 | .09 | -.01 | | |
| | | SCS-AV (SF) | -.00 | .26 | -.00 | | |
| Preparation | Step 1: | | | | | .03 | .03 |
| | | SC-AV | .10 | .07 | .18 | | |
| | Step 2: | | | | | .06 | .03 |
| | | SC-AV | .18 | .09 | .35^ | | |
| | | SCS-AV (SF) | .34 | .26 | .23 | | |
| CET-AV | Step 1: | | | | | .08 | .08** |
| | | SC-AV | .09 | .03 | .28** | | |
| | Step 2: | | | | | .08 | .00 |
| | | SC-AV | .07 | .04 | .21 | | |
| | | SCS-AV (SF) | -.09 | .12 | -.09 | | |

*Note.*  ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$.
SC-AV = Self-Criticism – Athlete Version, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.12-4.

*Study 2: Time 4 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .14 | .14** |
| | | SC-AV | -.22 | .07 | -.38** | | |
| | Step 2: | | | | | .24 | .10* |
| | | SC-AV | -.06 | .09 | -.11 | | |
| | | SCS-AV | .77 | .29 | .41* | | |
| Outcome | Step 1: | | | | | .17 | .17** |
| | | SC-AV | -.26 | .08 | -.42** | | |
| | Step 2: | | | | | .25 | .08* |
| | | SC-AV | -.11 | .10 | -.17 | | |
| | | SCS-AV | .76 | .32 | .38* | | |
| Expectation | Step 1: | | | | | .03 | .03 |
| | | SC-AV | .09 | .07 | .17 | | |
| | Step 2: | | | | | .05 | .02 |
| | | SC-AV | .18 | .11 | .32 | | |
| | | SCS-AV | .37 | .34 | .21 | | |
| Preparation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | .01 | .07 | .02 | | |
| | Step 2: | | | | | .01 | .01 |
| | | SC-AV | .08 | .10 | .16 | | |
| | | SCS-AV | .28 | .33 | .18 | | |
| SPPS | Step 1: | | | | | .00 | .00 |
| | | SC-AV | .00 | .02 | .00 | | |
| | Step 2: | | | | | .24 | .24*** |
| | | SC-AV | .10 | .03 | .40*** | | |
| | | SCS-AV | .49 | .09 | .63*** | | |
| A&R | Step 1: | | | | | .05 | .05* |
| | | SC-AV | -.06 | .03 | -.22* | | |
| | Step 2: | | | | | .13 | .09** |
| | | SC-AV | .01 | .04 | .02 | | |
| | | SCS-AV | .36 | .12 | .38** | | |
| Mastery | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.00 | .02 | -.01 | | |

| | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| | Step 2: | | | | .04 | .04* |
| | SC-AV | .03 | .03 | .15 | | |
| | SCS-AV | .19 | .10 | .25* | | |
| Meaning | Step 1: | | | | .01 | .01 |
| | SC-AV | -.03 | .03 | -.09 | | |
| | Step 2: | | | | .04 | .03^ |
| | SC-AV | .02 | .04 | .06 | | |
| | SCS-AV | .27 | .14 | .24^ | | |
| Vitality | Step 1: | | | | .02 | .02 |
| | SC-AV | -.05 | .04 | -.12 | | |
| | Step 2: | | | | .16 | .15*** |
| | SC-AV | .08 | .05 | .19 | | |
| | SCS-AV | .64 | .15 | .50*** | | |
| BAS | Step 1: | | | | .05 | .05* |
| | SC-AV | -.06 | .03 | -.22* | | |
| | Step 2: | | | | .20 | .15*** |
| | SC-AV | .03 | .03 | .10 | | |
| | SCS-AV | .46 | .10 | .50*** | | |
| IES-2 | Step 1: | | | | .01 | .01 |
| | SC-AV | -.01 | .02 | -.08 | | |
| | Step 2: | | | | .21 | .20*** |
| | SC-AV | .05 | .02 | .29* | | |
| | SCS-AV | .45 | .07 | .58*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV = the Self-Criticism-Athlete Version, SCS-AV = the Self-Compassion Scale – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = Intuitive Eating Scale - 2.

Table C.12-5.

*Study 2: Time 5 Hierarchical Regression Summary: Sport Performance Perceptions and*
*Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .05 | .05 |
| | | SC-AV | -.15 | .10 | -.23 | | |
| | Step 2: | | | | | .05 | .00 |
| | | SC-AV | -.14 | .14 | -.21 | | |
| | | SCS-AV (SF) | .06 | .38 | .03 | | |
| Outcome | Step 1: | | | | | .02 | .02 |
| | | SC-AV | -.11 | .11 | -.15 | | |
| | Step 2: | | | | | .02 | .00 |
| | | SC-AV | -.08 | .16 | -.11 | | |
| | | SCS-AV (SF) | .12 | .43 | .06 | | |
| Expectation | Step 1: | | | | | .02 | .02 |
| | | SC-AV | -.07 | .07 | -.14 | | |
| | Step 2: | | | | | .02 | .00 |
| | | SC-AV | -.08 | .10 | -.17 | | |
| | | SCS-AV (SF) | -.05 | .27 | -.04 | | |
| Preparation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | .01 | .06 | .03 | | |
| | Step 2: | | | | | .00 | .00 |
| | | SC-AV | -.01 | .09 | -.02 | | |
| | | SCS-AV (SF) | -.01 | .23 | -.06 | | |
| CET-AV | Step 1: | | | | | .08 | .08** |
| | | SC-AV | .11 | .04 | .29** | | |
| | Step 2: | | | | | .09 | .01 |
| | | SC-AV | .07 | .05 | .19 | | |
| | | SCS-AV (SF) | -.15 | .15 | -.14 | | |

*Note.* ^ = *p* < .1, * = *p* < 0.05, ** = *p* < 0.01.
SC-AV = Self-Criticism – Athlete Version, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.12-6.

*Study 2: Time 6 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | .00 | .00 |
| | SC-AV (SI) | -.02 | .14 | -.02 | | |
| | Step 2: | | | | .04 | .04 |
| | SC-AV (SI) | .02 | .15 | .03 | | |
| | SCS-AV (SI) | .27 | .20 | .21 | | |
| Training | Step 1: | | | | .09 | .09 |
| | SC-AV (SI) | .19 | .14 | .29 | | |
| | Step 2: | | | | .12 | .04 |
| | SC-AV (SI) | .24 | .15 | .37 | | |
| | SCS-AV (SI) | .20 | .22 | .21 | | |
| Competition | Step 1: | | | | a. | a. |
| | SC-AV (SI) | a. | a. | a. | | |
| | Step 2: | | | | a. | a. |
| | SC-AV (SI) | a. | a. | a. | | |
| | SCS-AV (SI) | a. | a. | a. | | |
| EWB | Step 1: | | | | .02 | .02 |
| | SC-AV (SI) | .17 | .14 | .15 | | |
| | Step 2: | | | | .24 | .22*** |
| | SC-AV (SI) | .33 | .13 | .28* | | |
| | SCS-AV (SI) | .76 | .18 | .49*** | | |
| BRWB | Step 1: | | | | .01 | .01 |
| | SC-AV (SI) | -.07 | .12 | -.08 | | |
| | Step 2: | | | | .30 | .29*** |
| | SC-AV (SI) | .08 | .10 | .08 | | |
| | SCS-AV (SI) | .71 | .14 | .56*** | | |

*Note.* $^ = p < .1$, $* = p < 0.05$, $** = p < 0.01$, $*** = p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-7.

*Study 2: Time 7 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | -.02 | .14 | -.03 | | |
| | Step 2: | | | | | .09 | .09^ |
| | | SC-AV (SI) | .08 | .15 | .08 | | |
| | | SCS-AV (SI) | .33 | .17 | .32^ | | |
| Training | Step 1: | | | | | .01 | .01 |
| | | SC-AV (SI) | -.10 | .19 | -.10 | | |
| | Step 2: | | | | | .01 | .00 |
| | | SC-AV (SI) | -.12 | .20 | -.11 | | |
| | | SCS-AV (SI) | -.09 | .26 | -.06 | | |
| Competition | Step 1: | | | | | a. | a. |
| | | SC-AV (SI) | a. | a. | a. | | |
| | Step 2: | | | | | a. | a. |
| | | SC-AV (SI) | a. | a. | a. | | |
| | | SCS-AV (SI) | a. | a. | a. | | |
| EWB | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | -.01 | .14 | -.01 | | |
| | Step 2: | | | | | .25 | .25*** |
| | | SC-AV (SI) | .16 | .13 | .14 | | |
| | | SCS-AV (SI) | .69 | .14 | .521*** | | |
| BRWB | Step 1: | | | | | .05 | .05^ |
| | | SC-AV (SI) | -.23 | .12 | -.23^ | | |
| | Step 2: | | | | | .58 | .53*** |
| | | SC-AV (SI) | .00 | .08 | .00 | | |
| | | SCS-AV (SI) | .88 | .10 | .76*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-8.

*Study 2: Time 8 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | -.00 | .14 | -.00 | | |
| | Step 2: | | | | | .07 | .07 |
| | | SC-AV (SI) | .08 | .15 | .11 | | |
| | | SCS-AV (SI) | .25 | .19 | .28 | | |
| Training | Step 1: | | | | | .02 | .02 |
| | | SC-AV (SI) | .12 | .15 | .12 | | |
| | Step 2: | | | | | .04 | .03 |
| | | SC-AV (SI) | .21 | .18 | .21 | | |
| | | SCS-AV (SI) | .25 | .25 | .18 | | |
| Competition | Step 1: | | | | | .61 | .61 |
| | | SC-AV (SI) | -1.08 | .50 | -.78 | | |
| | Step 2: | | | | | .68 | .07 |
| | | SC-AV (SI) | -1.55 | .87 | -1.11 | | |
| | | SCS-AV (SI) | -.86 | 1.27 | -.43 | | |
| EWB | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | -.06 | .11 | -.06 | | |
| | Step 2: | | | | | .17 | .17*** |
| | | SC-AV (SI) | .15 | .11 | .17 | | |
| | | SCS-AV (SI) | .55 | .15 | .47*** | | |
| BRWB | Step 1: | | | | | .11 | .11** |
| | | SC-AV (SI) | -.28 | .10 | -.33** | | |
| | Step 2: | | | | | .57 | .48*** |
| | | SC-AV (SI) | .05 | .08 | .06 | | |
| | | SCS-AV (SI) | .91 | .10 | .79*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-9.

*Study 2: Time 9 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | | .03 | .03 |
| | | SC-AV (SI) | -.11 | .12 | -.18 | | |
| | Step 2: | | | | | .03 | .00 |
| | | SC-AV (SI) | -.11 | .13 | -.18 | | |
| | | SCS-AV (SI) | .01 | .11 | .01 | | |
| Training | Step 1: | | | | | .01 | .01 |
| | | SC-AV (SI) | .18 | .16 | .19 | | |
| | Step 2: | | | | | .25 | .22** |
| | | SC-AV (SI) | .31 | .14 | .32* | | |
| | | SCS-AV (SI) | .47 | .15 | .48** | | |
| Competition | Step 1: | | | | | .01 | .01 |
| | | SC-AV (SI) | .15 | .68 | .11 | | |
| | Step 2: | | | | | .69 | .68^ |
| | | SC-AV (SI) | -.12 | .45 | -.09 | | |
| | | SCS-AV (SI) | 1.28 | .50 | .85^ | | |
| EWB | Step 1: | | | | | .07 | .07* |
| | | SC-AV (SI) | .26 | .11 | .27* | | |
| | Step 2: | | | | | .33 | .25*** |
| | | SC-AV (SI) | .34 | .10 | .36** | | |
| | | SCS-AV (SI) | .48 | .10 | .51*** | | |
| BRWB | Step 1: | | | | | .01 | .01 |
| | | SC-AV (SI) | -.08 | .12 | -.08 | | |
| | Step 2: | | | | | .68 | .67*** |
| | | SC-AV (SI) | .06 | .07 | .07 | | |
| | | SCS-AV (SI) | .82 | .07 | .83*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-10.

*Study 2: Time 10 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | | .10 | .10 |
| | | SC-AV (SI) | -.30 | .18 | -.31 | | |
| | Step 2: | | | | | .20 | .10^ |
| | | SC-AV (SI) | -.31 | .17 | -.32^ | | |
| | | SCS-AV (SI) | .25 | .14 | .32^ | | |
| Training | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | -.04 | .16 | -.04 | | |
| | Step 2: | | | | | .21 | .21** |
| | | SC-AV (SI) | .11 | .15 | .10 | | |
| | | SCS-AV (SI) | .58 | .17 | .47** | | |
| Competition | Step 1: | | | | | a. | a. |
| | | SC-AV (SI) | a. | a. | a. | | |
| | Step 2: | | | | | a. | a. |
| | | SC-AV (SI) | a. | a. | a. | | |
| | | SCS-AV (SI) | a. | a. | a. | | |
| EWB | Step 1: | | | | | .01 | .01 |
| | | SC-AV (SI) | .13 | .14 | .11 | | |
| | Step 2: | | | | | .25 | .24*** |
| | | SC-AV (SI) | .25 | .12 | .21* | | |
| | | SCS-AV (SI) | .61 | .13 | .50*** | | |
| BRWB | Step 1: | | | | | .02 | .02 |
| | | SC-AV (SI) | -.15 | .12 | -.14 | | |
| | Step 2: | | | | | .51 | .49*** |
| | | SC-AV (SI) | .01 | .09 | .00 | | |
| | | SCS-AV (SI) | .78 | .09 | .71*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-11.

*Study 2: Time 11 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | | .04 | .04 |
| | | SC-AV (SI) | -.18 | .15 | -.21 | | |
| | Step 2: | | | | | .06 | .01 |
| | | SC-AV (SI) | -.18 | .15 | -.20 | | |
| | | SCS-AV (SI) | .13 | .20 | .12 | | |
| Training | Step 1: | | | | | .03 | .03 |
| | | SC-AV (SI) | .14 | .16 | .17 | | |
| | Step 2: | | | | | .25 | .23* |
| | | SC-AV (SI) | .13 | .14 | .16 | | |
| | | SCS-AV (SI) | .52 | .19 | .47* | | |
| Competition | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | .00 | .65 | .00 | | |
| | Step 2: | | | | | .06 | .06 |
| | | SC-AV (SI) | .31 | 1.15 | .28 | | |
| | | SCS-AV (SI) | .38 | 1.03 | .38 | | |
| EWB | Step 1: | | | | | .08 | .08* |
| | | SC-AV (SI) | .27 | .11 | .28* | | |
| | Step 2: | | | | | .17 | .09* |
| | | SC-AV (SI) | .32 | .11 | .33** | | |
| | | SCS-AV (SI) | .39 | .15 | .31* | | |
| BRWB | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | .05 | .10 | .07 | | |
| | Step 2: | | | | | .34 | .34*** |
| | | SC-AV (SI) | .14 | .09 | .17 | | |
| | | SCS-AV (SI) | .64 | .11 | .59*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-12.

*Study 2: Time 12 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Rest & Recovery | Step 1: | | | | | .05 | .05 |
| | | SC-AV (SI) | -.21 | .15 | -.23 | | |
| | Step 2: | | | | | .06 | .01 |
| | | SC-AV (SI) | -.21 | .15 | -.23 | | |
| | | SCS-AV (SI) | .11 | .21 | .09 | | |
| Training | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | -.03 | .26 | -.02 | | |
| | Step 2: | | | | | .23 | .23* |
| | | SC-AV (SI) | -.02 | .23 | -.02 | | |
| | | SCS-AV (SI) | .85 | .38 | .84* | | |
| Competition | Step 1: | | | | | .00 | .00 |
| | | SC-AV (SI) | .03 | .24 | .04 | | |
| | Step 2: | | | | | .11 | .11 |
| | | SC-AV (SI) | .06 | .23 | .07 | | |
| | | SCS-AV (SI) | .31 | .26 | .33 | | |
| EWB | Step 1: | | | | | .03 | .03 |
| | | SC-AV (SI) | .18 | .13 | .17 | | |
| | Step 2: | | | | | .19 | .18*** |
| | | SC-AV (SI) | .21 | .12 | .20^ | | |
| | | SCS-AV (SI) | .58 | .15 | .43*** | | |
| BRWB | Step 1: | | | | | .01 | .01 |
| | | SC-AV (SI) | .10 | .11 | .10 | | |
| | Step 2: | | | | | .49 | .48*** |
| | | SC-AV (SI) | .13 | .08 | .14 | | |
| | | SCS-AV (SI) | .82 | .10 | .69*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV (SI) = Single item for self-criticism, SCS-AV (SI) = Single item for self-compassion, Rest & Recovery = Single item rest and recovery performance perception evaluation, Training = Single item training performance perception evaluation, Competition = Single item competition performance perception evaluation, EWB = Single item for eudaimonic well-being, BRWB = Single item for body-related well-being.

Table C.12-13.

*Study 2: Time 13 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .12 | .12* |
| | | SC-AV | -.29 | .13 | -.35* | | |
| | Step 2: | | | | | .13 | .01 |
| | | SC-AV | -.23 | .18 | -.28 | | |
| | | SCS-AV (SF) | .24 | .51 | .10 | | |
| Outcome | Step 1: | | | | | .21 | .21** |
| | | SC-AV | -.37 | .12 | -.45** | | |
| | Step 2: | | | | | .32 | .12* |
| | | SC-AV | -.11 | .15 | -.14 | | |
| | | SCS-AV (SF) | 1.07 | .44 | .46* | | |
| Expectation | Step 1: | | | | | .01 | .01 |
| | | SC-AV | .08 | .15 | .09 | | |
| | Step 2: | | | | | .09 | .08^ |
| | | SC-AV | .21 | .16 | .24 | | |
| | | SCS-AV (SF) | .74 | .42 | .32^ | | |
| Preparation | Step 1: | | | | | .01 | .01 |
| | | SC-AV | -.06 | .13 | -.07 | | |
| | Step 2: | | | | | .12 | .11* |
| | | SC-AV | .09 | .15 | .11 | | |
| | | SCS-AV (SF) | .83 | .38 | .38* | | |
| CET-AV | Step 1: | | | | | .09 | .09** |
| | | SC-AV | .12 | .04 | .30** | | |
| | Step 2: | | | | | .10 | .01 |
| | | SC-AV | .10 | .05 | .24* | | |
| | | SCS-AV (SF) | -.13 | .13 | -.12 | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$.
SC-AV = Self-Criticism – Athlete Version, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.12-14.

*Study 2: Time 14 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .10 | .10^ |
| | | SC-AV | -.22 | .11 | -.31^ | | |
| | Step 2: | | | | | .10 | .00 |
| | | SC-AV | -.20 | .13 | -.29 | | |
| | | SCS-AV | .10 | .39 | .05 | | |
| Outcome | Step 1: | | | | | .04 | .04 |
| | | SC-AV | -.16 | .13 | -.19 | | |
| | Step 2: | | | | | .04 | .01 |
| | | SC-AV | -.20 | .16 | -.24 | | |
| | | SCS-AV | -.22 | .47 | -.09 | | |
| Expectation | Step 1: | | | | | .01 | .01 |
| | | SC-AV | -.06 | .08 | -.11 | | |
| | Step 2: | | | | | .02 | .01 |
| | | SC-AV | -.02 | .11 | -.04 | | |
| | | SCS-AV | .19 | .31 | .12 | | |
| Preparation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.02 | .08 | -.03 | | |
| | Step 2: | | | | | .05 | .05 |
| | | SC-AV | .08 | .10 | .15 | | |
| | | SCS-AV | .44 | .30 | .28 | | |
| SPPS | Step 1: | | | | | .04 | .04^ |
| | | SC-AV | -.06 | .03 | -.19 | | |
| | Step 2: | | | | | .08 | .04^ |
| | | SC-AV | -.02 | .04 | -.06 | | |
| | | SCS-AV | .21 | .11 | .24^ | | |
| A&R | Step 1: | | | | | .01 | .01 |
| | | SC-AV | -.04 | .05 | -.08 | | |
| | Step 2: | | | | | .05 | .04^ |
| | | SC-AV | .02 | .06 | .04 | | |
| | | SCS-AV | .30 | .17 | .24^ | | |
| Mastery | Step 1: | | | | | .02 | .02 |
| | | SC-AV | -.03 | .03 | -.12 | | |

| | | | B | SE | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| | Step 2: | | | | | .07 | .05^ |
| | | SC-AV | .00 | .04 | .02 | | |
| | | SCS-AV | .20 | .10 | .26^ | | |
| Meaning | Step 1: | | | | | .01 | .01 |
| | | SC-AV | -.05 | .05 | -.10 | | |
| | Step 2: | | | | | .02 | .01 |
| | | SC-AV | -.03 | .06 | -.06 | | |
| | | SCS-AV | .11 | .18 | .08 | | |
| Vitality | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.03 | .06 | -.07 | | |
| | Step 2: | | | | | .05 | .05^ |
| | | SC-AV | .03 | .07 | .07 | | |
| | | SCS-AV | .37 | .20 | .25^ | | |
| BAS | Step 1: | | | | | .04 | .04^ |
| | | SC-AV | -.06 | .04 | -.20^ | | |
| | Step 2: | | | | | .18 | .14** |
| | | SC-AV | .01 | .04 | .04 | | |
| | | SCS-AV | .40 | .11 | .44** | | |
| IES-2 | Step 1: | | | | | .03 | .03 |
| | | SC-AV | -.04 | .02 | -.18 | | |
| | Step 2: | | | | | .19 | .16*** |
| | | SC-AV | .02 | .03 | .07 | | |
| | | SCS-AV | .29 | .08 | .47*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.
SC-AV = the Self-Criticism-Athlete Version, SCS-AV = the Self-Compassion Scale – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = Intuitive Eating Scale - 2.

Table C.12-15.

*Study 2: Time 15 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | .17 | .17* |
| | SC-AV | -.34 | .13 | -.41* | | |
| | Step 2: | | | | .17 | .00 |
| | SC-AV | -.34 | .16 | -.42* | | |
| | SCS-AV (SF) | -.03 | .41 | -.02 | | |
| Outcome | Step 1: | | | | .20 | .20** |
| | SC-AV | -.37 | .12 | -.45** | | |
| | Step 2: | | | | .22 | .02 |
| | SC-AV | -.29 | .16 | -.35^ | | |
| | SCS-AV (SF) | .33 | .40 | .16 | | |
| Expectation | Step 1: | | | | .00 | .00 |
| | SC-AV | .02 | .11 | .03 | | |
| | Step 2: | | | | .02 | .02 |
| | SC-AV | -.03 | .13 | -.04 | | |
| | SCS-AV (SF) | -.25 | .35 | -.14 | | |
| Preparation | Step 1: | | | | .02 | .02 |
| | SC-AV | -.10 | .11 | -.14 | | |
| | Step 2: | | | | .06 | .04 |
| | SC-AV | -.18 | .13 | -.27 | | |
| | SCS-AV (SF) | -.40 | .35 | -.22 | | |
| CET-AV | Step 1: | | | | .14 | .14** |
| | SC-AV | .14 | .04 | .37** | | |
| | Step 2: | | | | .15 | .01 |
| | SC-AV | .11 | .05 | .29* | | |
| | SCS-AV (SF) | -.13 | .15 | -.13 | | |

*Note.* $^\wedge = p < .1$, $* = p < 0.05$, $** = p < 0.01$.
SC-AV = Self-Criticism – Athlete Version, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.12-16.

*Study 2: Time 16 Hierarchical Regression Summary: Sport Performance Perception and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | .00 | .00 |
| | SC-AV | -.04 | .13 | -.05 | | |
| | Step 2: | | | | .05 | .05 |
| | SC-AV | -.21 | .19 | -.27 | | |
| | SCS-AV (SF) | -.56 | .44 | -.31 | | |
| Outcome | Step 1: | | | | .00 | .00 |
| | SC-AV | -.05 | .15 | -.06 | | |
| | Step 2: | | | | .02 | .02 |
| | SC-AV | -.16 | .22 | -.18 | | |
| | SCS-AV (SF) | -.35 | .51 | -.17 | | |
| Expectation | Step 1: | | | | .08 | .08 |
| | SC-AV | .21 | .12 | .28 | | |
| | Step 2: | | | | .08 | .00 |
| | SC-AV | .16 | .18 | .22 | | |
| | SCS-AV (SF) | -.14 | .39 | -.09 | | |
| Preparation | Step 1: | | | | .09 | .09^ |
| | SC-AV | .23 | .13 | .30^ | | |
| | Step 2: | | | | .09 | .00 |
| | SC-AV | .18 | .19 | .23 | | |
| | SCS-AV (SF) | -.16 | .41 | -.09 | | |
| CET-AV | Step 1: | | | | .11 | .11** |
| | SC-AV | .17 | .06 | .34** | | |
| | Step 2: | | | | .12 | .00 |
| | SC-AV | .14 | .07 | .29^ | | |
| | SCS-AV (SF) | -.09 | .17 | -.08 | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$.
SC-AV = Self-Criticism – Athlete Version, SCS-AV (SF) = the Self-Compassion Scale – Athlete Version (Short Form), Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, CET-AV = Compulsive Exercise Test – Athlete Version.

Table C.12-17.

*Study 2: Time 17 Hierarchical Regression Summary: Sport Performance Perceptions and Eudaimonic and Body-related Well-being Measures*

| Criterion | Predictor | | B | SE B | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| Evaluation | Step 1: | | | | | .03 | .03 |
| | | SC-AV | -.11 | .10 | -.18 | | |
| | Step 2: | | | | | .03 | .00 |
| | | SC-AV | -.08 | .13 | -.13 | | |
| | | SCS-AV | .14 | .39 | .08 | | |
| Outcome | Step 1: | | | | | .04 | .04 |
| | | SC-AV | -.12 | .09 | -.20 | | |
| | Step 2: | | | | | .08 | .04 |
| | | SC-AV | -.22 | .12 | -.37^ | | |
| | | SCS-AV | -.45 | .37 | -.25 | | |
| Expectation | Step 1: | | | | | .01 | .01 |
| | | SC-AV | .07 | .17 | .09 | | |
| | Step 2: | | | | | .04 | .03 |
| | | SC-AV | -.00 | .19 | -.00 | | |
| | | SCS-AV | -.47 | .53 | -.19 | | |
| Preparation | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.01 | .16 | -.02 | | |
| | Step 2: | | | | | .00 | .00 |
| | | SC-AV | -.03 | .18 | -.03 | | |
| | | SCS-AV | -.07 | .51 | -.03 | | |
| SPPS | Step 1: | | | | | .04 | .04^ |
| | | SC-AV | -.06 | .04 | -.20^ | | |
| | Step 2: | | | | | .17 | .13** |
| | | SC-AV | .01 | .04 | .05 | | |
| | | SCS-AV | .39 | .12 | .44** | | |
| A&R | Step 1: | | | | | .02 | .02 |
| | | SC-AV | -.06 | .05 | -.14 | | |
| | Step 2: | | | | | .04 | .03 |
| | | SC-AV | -.01 | .06 | -.03 | | |
| | | SCS-AV | .24 | .18 | .19 | | |
| Mastery | Step 1: | | | | | .05 | .05^ |
| | | SC-AV | -.06 | .03 | -.22 | | |

| | | | B | SE | β | $R^2$ | $\Delta R^2$ |
|---|---|---|---|---|---|---|---|
| | Step 2: | | | | | .10 | .05^ |
| | | SC-AV | -.02 | .04 | -.08 | | |
| | | SCS-AV | .21 | .11 | .26^ | | |
| Meaning | Step 1: | | | | | .00 | .00 |
| | | SC-AV | -.03 | .06 | -.06 | | |
| | Step 2: | | | | | .01 | .00 |
| | | SC-AV | -.01 | .07 | -.02 | | |
| | | SCS-AV | .10 | .21 | .07 | | |
| Vitality | Step 1: | | | | | .11 | .11** |
| | | SC-AV | -.10 | .03 | -.33** | | |
| | Step 2: | | | | | .31 | .20*** |
| | | SC-AV | -.01 | .04 | -.03 | | |
| | | SCS-AV | .48 | .11 | .55*** | | |
| BAS | Step 1: | | | | | .07 | .07* |
| | | SC-AV | -.05 | .02 | -.26* | | |
| | Step 2: | | | | | .32 | .25*** |
| | | SC-AV | .02 | .02 | .08 | | |
| | | SCS-AV | .36 | .07 | .60*** | | |
| IES-2 | Step 1: | | | | | .20 | .20*** |
| | | SC-AV | -.08 | .02 | -.45*** | | |
| | Step 2: | | | | | .45 | .25*** |
| | | SC-AV | -.02 | .02 | -.11 | | |
| | | SCS-AV | .32 | .06 | .60*** | | |

*Note.* ^ = $p < .1$, * = $p < 0.05$, ** = $p < 0.01$, *** = $p < .001$.

SC-AV = the Self-Criticism-Athlete Version, SCS-AV = the Self-Compassion Scale – Athlete Version, Evaluation = evaluation of recent competition, Outcome = perceived positivity of competition outcome, Expectation = expectation of upcoming competition, Preparedness = perceived preparedness for upcoming competition, SPPS = Sport Performance Perceptions Scale, A&R = Autonomy and relatedness subscales of the Basic Needs Satisfaction in Sports Scale, Mastery = sport competence, physical conditioning, and physical strength subscales of the Revised Physical Self-Perception Profile, Meaning = Sense of Meaning Scale, Vitality = Subjective Vitality Scale, BAS = the Body Appreciation Scale, IES-2 = Intuitive Eating Scale - 2.

**Appendix D:** Study 3 Documents

# Women Athletes' Sport Performance and Well-Being:

## Inviting women athletes to participate in ongoing research in the College of Kinesiology at the University of Saskatchewan.

There are many positive physical, psychological, and social benefits for women when they participate in sport. To work toward gaining a better understanding of positive sport experiences.

In this qualitative study we will be looking at women athletes' performance and well-being around an important competition. Participants will be asked to complete 2 interviews (30-60 minutes each).

Athletes will be thanked with Amazon gift cards.

## Participation Eligibility:

- Women athletes 16 to 35 years of age
- With an important upcoming competition
- At least 12 months sport experience

If you coach eligible women athletes or want to participate please contact the research team.

## Contact Information:

Margo Killham: margo.killham@usask.ca

Noreen Murphy: nmurphy@sasksport.sk.ca

Dr. Leah Ferguson: leah.ferguson@usask.ca

Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada
Canada

UNIVERSITY OF SASKATCHEWAN
College of Kinesiology
KINESIOLOGY.USASK.CA

SASK SPORT INC
A Federation of Provincial Sport Governing Bodies

UNIVERSITY OF
SASKATCHEWAN

Dear Participant:

This information consent letter, a copy of which has been given to you, outlines the details of this research project and what your participation entails. This project is part of the requirements for a Ph.D. Degree, in the College of Kinesiology at the University of Saskatchewan, under the supervision of Dr. Leah Ferguson.

This research project is exploring women athletes' sport performance perceptions, self-compassion, and well-being around an important competition.

Participation in this project is completely voluntary. The potential risk related to participation in this research is that you will be asked to discuss topics related to your sport performance perceptions and well-being attitudes and behaviours that may be uncomfortable to you. However, the overall risk of participation is low and athletes are not required to answer specific questions during the interviews. You have the right to refuse to answer any question. In addition, you have the right to withdraw at any point during this research without penalty until you release your transcripts, skip questions during the interview, and be provided support resources in the event of psychological distress. You are encouraged to contact the researcher at any time (before, during, or after the study) to ask any questions that you may have. In the event that you would like to further discuss your feelings regarding the issues discussed in the study, Saskatoon Mental Health Services can assist you:

    Mental Health Services - services available to the public, no fee
        Phone # 306-655-7950
        • Youth Mental Health Services (for adolescents 12-19 years old)
        • Adult Mental Health Services (for adults 19 years and older)

The total time commitment for participants will be approximately 75 - 90 minutes. You will be asked to complete two individual interviews that will explore athlete perceptions of sport performance and well-being. Both interviews will be audio recorded, you may choose to stop the recording at any point during the interview. Further, you will have the opportunity to review and edit your interview transcripts before releasing your transcripts for data analysis. Specifically, the goal of this research is to explore women athletes sport performance perceptions, self-compassion, and well-being around an important competitive experience.

You may terminate participation at any time during the study without consequence. Any information you provide is kept confidential. Your name will not appear in any written report from this study (a pseudonym will be used, which will be selected by you) and your personal information will be de-identified prior to data storage. In accordance with the University of Saskatchewan policy the data collected for this project will be retained for five years by the researcher in a password secured electronic file, on the secure University of Saskatchewan PAWS cabinet, and in a locked file that will be stored at the University of Saskatchewan. Only the researcher and research supervisor at the University of Saskatchewan will have access to the stored data. In no way does your participation waive your legal rights in the event of research-related harm nor does your participation release the researcher, sponsor, or involved institutions from their legal and professional responsibilities.

If you have any questions about this project, or would like to discuss the study before reaching a decision to participate, please feel free to contact Margo Killham by email at margo.killham@usask.ca. You can also contact the research supervisor, Dr. Ferguson at leah.ferguson@usask.ca or (306) 966-1093.

This research project was reviewed and approved on ethical grounds through a harmonized review process by the University of Saskatchewan Behavioural Research Ethics Board.  Any questions regarding your rights as a participant may be addressed to that committee through the U of S Research Ethics Office ethics.office@usask.ca or (306) 966-2975. Out of town participants may call toll-free at 1-888-966-2975.

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


_____     _____     _____
*Name of Participant*                                   *Signature*                                              *Date*


_____                                                              _____
*Researcher's Signature*                                                                              *Date*

287

**Interview 1 Guide:**
**(Study 3)**

**Introductions:**
⦿The goal here is to begin our formal communications in the interview setting.

- Introduce myself and talk about my program of study.
- Thank them for taking the time to come and that I really appreciate their participation.

**Consent:**
⦿The goal here is to make sure that the participant consents to participate and to prepare them for the interview (pseudonym and audio recording).

- Did you bring your consent form with you?
    - ○ YES ➜ Proceed with verbal confirmation of consent components.
    - ○ NO ➜ Have them read and sign the consent form and then gain verbal consent.
    - ○ ★Take the completed copy of the consent form for the research records (a second copy for the athlete to keep) ★
- Have the participant choose a pseudonym to be used through the rest of the interview (double check their preferred spelling).
- Confirm the day of their upcoming important competition.
- Brief the participant about audio recording and let them know that I am going to start the recording.
    - ○ ★ Begin the tape recorder.★

**Rapport Building:**
⦿The goal here is to work toward a comfortable environment for the athlete to share their sport experiences related to topics to be covered in this interview and during the follow-up interview.

- I have been involved in many sports at one point or another and can be so different. Can you tell me about your sport?
    - ○ What position/event do you play/compete in?
        - ▪ Can you tell me a about what roles you fill during competition?
    - ○ How long have you competed in this sport and at your current position/event?
    - ○ What is the highest level of competition you have competed at for this sport?
    - ○ What is your current level of competition for this sport?
- In the past 7 days how many training sessions and competitions did you complete?
    - ○ Did you miss any scheduled training or competitions?
        - ▪ Why did you miss?
- In the past 7 days how many hours of training and competition did you complete?
    - ○ Did you miss any scheduled training or competitions?
        - ▪ Why did you miss?

**Discuss the context of the upcoming "important" competition:**

⊙The goal here is to gather information about the upcoming competition and its importance relative to other competitions.

- Can you tell me about why your upcoming competition is important?
- How is this "important" upcoming competition different from your "typical" competition?
  - Is this an important competition for just you or for all other athletes competing?
- Can you describe for me what the competition environment will be like?
  - Who will be there?
  - If you are unsuccessful at the competition will your competitive season be over?

**Sport Performance Perceptions and Expectations:**
⊙The goal here is to get information about how the athlete expects to perform at their upcoming important competition.

- How do you expect to perform at your upcoming competition compared to your typical performance over the past 12 months?
  - Similar to your typical performance?
  - Worse than your typical performance?
    - By how much?
  - Better than your typical performance?
    - By how much?
- Can you tell me why you expect to perform this way in your upcoming competition?
- How prepared are you for your upcoming competition?
  - Very prepared?
  - Not at all prepared?
- Can you tell me about how you are preparing for your current competition?
- Do you think these preparations will help you achieve your expected performance?

**Additional Comments:**
⊙The goal here is to provide participants with the opportunity to address other things that they deem important or relevant to their upcoming competition.

- Before we wrap up for today I want to ask you:
  - Additional comments?
  - Is there something else that you think would be important to add to the topics we discussed today?
  - Do you have any further questions or comments?

**Conclusion:**
⊙The goal here is to wrap up the interview.

- I want to take the time to thank you for your participation in this interview today. With out your time and willingness to chat with me this research would not be possible, so thank you very much for your time and great stories.

- Confirm the day, time, and location of the second interview with the athlete
- If you have any questions or concerns please feel free to contact me.
- ★ Stop the tape recording

Appendix D.4: Study 3 Interview #2 Guide

**Interview 2 Guide:**
**(Study 3)**

**Introductions:**
⊙The goal here is to begin our formal communications for the second interview.

- Re-introduce myself and talk about my program of study.
- Thank them for taking the time to come again to participate in the second interview and that I really appreciate their time and participation.

**Discuss the context of the completed "important" competition:**
⊙The goal here is to gather information about the completed competition and its importance relative to other competitions.

- Can you refresh our memory as to why this past competition was important to you?
- How was this "important" competition different from your "typical" competition?
    - Was it an important competition for just you or for all other athletes competing?
- Can you describe for me what the competition environment was like?
    - Who was there?

**Sport Performance Perceptions and Evaluations:**
⊙The goal here is to get information about how the athlete evaluates their performance at their past important competition.

- How did you perform at your most recent competition compared to your typical performance over the past 12 months?
    - Similar to your typical performance?
    - Worse than your typical performance?
        - By how much?
    - Better than your typical performance?
        - By how much?
- Can you tell me why you are rating your performance this way?
- Can you describe how your feel about the outcome of this competition?
    - Positive, Neutral, negative?
    - Very positive or very negative?
    - What made this competition outcome positive, neutral, or negative?
- During our first interview you said that you were _____ (not at all/very prepared) for your competition. Now that you have completed this competition, how prepared do you think you were?
- Do you think your preparations helped you or prevented you from achieving your expected performance?
    - What specifically do you think was helpful/hindering?
    - Looking back, what would you change about your preparations?

**Self-compassion and Performance:**

⊙The goal here is to ask specific questions about how self-compassion is related to sport performance perceptions.

**Self-Compassion:**

- When I talk about self-compassion, what do you think of?
    - How does compassion feel
    - What are the important parts of compassion?
- ★Give the participant "cheat sheet" ★
- Blurb about self-compassion:
    - "You have talked about some interesting parts of compassion that we can have toward ourselves. As you can see on the paper that I just gave you researchers define self-compassion as a balanced awareness the inspires us to be understanding toward ourselves in times of suffering and that by recognizing our hardships we can treat ourselves kindly and try to ease our personal pain. Self-compassion has three parts that are also described on your page, self-kindness "being kind and understanding toward oneself in instances of pain or failure rather than being harshly self-critical", common humanity is based on seeing ones experiences as connecting rather than separating or isolating, and mindfulness "holding painful thoughts and feelings in balanced awareness rather than over-identifying with them"."
- When you see how researchers define self-compassion do you think you would add anything or keep it the same?
    - Why would you keep or change these aspects?
- Can you think of a time during your important competition when you were compassionate to yourself?
    - Probe for contextual details
        - Where were you
        - When was this
        - Were other people there
        - Were you or others being critical about your performance?
- How about during your training or preparations for this competition?
- Do you think this perspective helped you train/prepare/ compete?

- If you are unable to think of a time during your training or competition that you were self-compassionate, can you think of a time when you wish you could have been self-compassionate?
    - Why/or why not?

**Additional Comments:**

⊙The goal here is to provide participants with the opportunity to address other things that they deem important or relevant to the current research.

- Before we wrap up I want to ask you:
    - Additional comments?

- o Is there something else that you think would be important to add to the topics we discussed today?
- o Do you have any further questions or comments?

**Conclusion:**
⊙The goal here is to wrap up the interview.

- I want to take the time to thank you for your participation in this interview today. With out your time and willingness to chat with me this research would not be possible, so thank you very much for your time and great stories.
- If you have any questions or concerns please feel free to contact me. All the information that you will need is in this package.
  - o ★ Give the participant their exit package.★
★ Stop the tape recording★
★Go through the exit package with the athlete and present athlete with $20 Amazon gift card. ★

**UNIVERSITY OF SASKATCHEWAN**

AN EXPLORATION OF WOMEN ATHLETES' SELF-COMPASSION, SPORT PERFORMANCE PERCEPTIONS, AND WELL-BEING AROUND AN ATHLETE IDENTIFIED IMPORTANT COMPETITIVE SPORT EXPERIENCE.

I,_____, acknowledge that I have reviewed, or knowingly decline to review, the complete transcripts (2) of my personal interviews in this study, and have been provided with the opportunity to add, alter, and delete information from the transcript as appropriate. I acknowledge that the transcript accurately reflects what I said in my personal interviews with Margo Killham and have change the font colour to red for all modified statements. I hereby authorize the release of this transcript to Margo Killham to be used in the manner described in the Consent Form. I have received a copy of this Data/Transcript Release Form for my own records.

_____        _____
Name of Participant                                    Date

_____        _____
Signature of Participant                              Signature of researcher

UNIVERSITY OF SASKATCHEWAN

**Dear Participant:**

Thank you for successfully completing the components of this research study. Your participation is highly valued. The research being conducted in this study, "An Exploration of Women Athletes' Self-compassion, Sport Performance Perceptions, and Well-being Around An Athlete Identified Important Competitive Sport Experience" is focused on exploring how women athletes perceive their sport performances and experience self-compassion and well-being related to an important competitive event. You are encouraged to contact the researcher at any time (before, during, or after the study) to ask any questions that you may have. In the event that you would like to further discuss distressing feelings regarding the issues discussed in the study, Saskatoon Mental Health Services can assist you:

> Mental Health Services - services available to the public, no fee
>
>> Phone # 306-655-7950
>
> - Youth Mental Health Services (for adolescents 12-19 years old)
> - Adult Mental Health Services (for adults 19 years and older)

This research will be used to fulfill the requirements of a Ph.D. Degree at the University of Saskatchewan in the College of Kinesiology. The results from the research will also be prepared for presentation(s) and manuscript(s) for publication in research journal(s).

I sincerely hope that you have enjoyed this research process and I am very thankful for your participation.

Sincerely Yours:

Margo Eileen Killham

# UNIVERSITY OF SASKATCHEWAN

**Dear Participant:**

To formally request the results from this research project please e-mail Margo Killham at margo.killham@usask.ca. The results of this study will be presented in both a written Ph.D. dissertation and defense. The results of this study will become available in the spring of 2018.

Thank you again for your time and participation, both are greatly valued.

Sincerely Yours:




Margo Eileen Killham

**Dear Participant:**

I would like to thank you for your participation in this research project. This research was interested in exploring how women athletes perceive their sport performances and experience self-compassion and well-being related to an important competitive event.

Please remember that any data pertaining to your participation will be kept confidential. The data will be stored for five years in a password protected file and will only be accessible to the researcher Margo Killham and the research supervisor Dr. Leah Ferguson. Once all the data is collected and analyzed for this project, the results will be used as part of the requirements for a Ph.D. Degree at the University of Saskatchewan. If you are interested in receiving more information regarding the results of this project, or if you have any questions or concerns, please contact me by email at margo.killham@usask.ca. You can also contact my supervisor, Dr. Leah Ferguson leah.ferguson@usask.ca.

Again, thank you so much for your time and contributions to this research project.


Yours sincerely,



 Margo Eileen Killham

Appendix D.6: Study 3 Researcher Reflexivity

**Applied Reflective Researcher Reflexivity**

The following Appendix will include aspects of my reflective processes with additional interpretation highlighting how the reflexive processes added value, rigor, and depth throughout Study 3. I have included direct quotations or excepts from my full reflexivity[36] (a 75 page document that was kept across my dissertation research studies to reflect on the research process) and examples from Study 3, which together highlight how my reflexive processes were integrated with my research. I acknowledge that this is a novel approach to presenting reflexivity, and I believe that this representation of my process is aligned with my introspective and analytical perspectives, my identified pragmatic worldview, and my overall mixed methods research approach. Within this Appendix my goal is to highlight my intentional application of qualitative strategies, management of personal biases and expectations, data management, and writing with the intent to fully represent the collected data and women athletes' experiences.

### Reflective Design

Study 3 was proposed and envisioned as the capstone study of my dissertation program that added depth to my overall dissertation through the inclusion and focus on athlete perspectives and experiences. Specifically, I was interested in "making sure my dissertation highlight[ed] my capacity and growth as a mixed methodologist" when I was originally conceptualizing my overall research and Ph.D. program. When designing my overall research purpose, question, and design I decided that a sequential explanatory series would be best suited to address my overall research purpose and question (Creswell & Plano Clark, 2018).

Originally, I had proposed to approach Study 3 from either a narrative approach "to tell the stories of athletes" or a phenomenological approach to inquiry "to describe the 'essence' of self-compassion in competition experiences". My thought was that "I could highlight new skills through the application of a different approach than in my M.Sc. research", which was important to demonstrate mastery and growth in qualitative approaches. This desire was built on one of my

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[36] Quotations have been modified to be past tense, with [] within quotations denoting the change from present or future to past tense for readability and to better represent my reflections for the purpose of this appendix.

overarching goals to achieve during my Ph.D. program – to be marketable as a research methodologist when applying for academic positions and progressing in my future career. However, upon reflection and feedback from my committee following my proposal meeting I decided to reevaluate my qualitative approach to inquiry for Study 3.

Before I provided my committee with my Study 3 in-depth proposal, I completed a review of my overall research and my Study 3 purpose and questions, a review of the key quantitative findings from Study 1 and Study 2, and completed an analysis of best fit approaches. This process included individual reflection, reflection on committee feedback and recommendations, conversations with my supervisor, consultation with the qualitative research lab coordinator at the SSRL, and making sure that this study added to the methodological congruence of my dissertation. Through this process I identified that "it's super important to me that this study [Study 3] is aligned with and connected to my quantitative studies" and that "picking an approach just because it's different is probably not the most well reasoned decision making process". Therefore, I intentionally decided to modify my original plan.

Following my reflection and modification of my proposed Study 3, I again reflected to "double check my triple checking". Through this iterative reflective process, I was able to make sure my Study 3 plan would contribute novel information to my overall research purpose and question and be well suited to address the research purpose and question of Study 3 to "further reinforce methodological congruence". In the end Study 3 was designed as a collective case study with two individual interviews intended to explore and describe women athletes' self-compassion regarding athlete-identified important competitive events. "It quickly became obvious to me that a case study approach would be best to address my research questions" and "even though I wanted to show new design and qualitative skills, taking a collective case approach [would] provide me the opportunity to gain further expertise with case specific methods".

**Reflective Data Collection**

"I [was] so excited to start recruiting athletes for my study!" In my proposal I had outlined that I wanted to have a wonderful "balanced sample" of athletes "representing team, individual, aesthetic, and non-aesthetic sports" with a "range of competition outcomes [i.e., positive, neutral, and negative] and experience [time in sport]". In preparation of data collection,

I made sure to have enough Amazon gift cards and printed copies of the informed consent form, interview guides, and exit packages. I couldn't wait to talk with athletes "I even ha[d] all my rooms booked and the recorder charged".

"Qualitative research is so much fun" the opportunity to talk with women in my research was "such an honour"; the "amount of trust and vulnerability and genuine passion the athletes expressed in their interview sets [was] humbling". After the first couple of athletes had completed their two individual interviews I was truly "jazzed to be doing qualitative work", and immersed in each minute of conversation. However, after 6 athletes had completed their interview sets with all positive competitive outcomes I started to "worry about my nicely proposed balanced, and maybe idealized sample plans". This concern intensified as each athlete was successful, "it [was] so weird, I [was] so happy that the women [were] succeeding, reaching their goals, and excelling. But I [was] really freaking out about the balance of my sample" and "it felt gross to hope that they wouldn't succeed just for my 'balance'". After 10 athletes had completed the study, all with positive competitive outcomes I took a pause in recruitment to reflect and discuss with my supervisor what I should do. This pause was warranted as I had reached my ideal range for sample size but did not have the balance I proposed.

"I need[ed] to rethink and confirm what I [was] doing" with this study. As I saw it, I had two distinct possible courses of action. First, "I could continue to recruit and collect data hoping that the women [would] lose or have a negative competitive experience to balance my sample out". Or second, "I could close my data collection and reframe the boundaries of my collective case". Each option had challenges and benefits, and even after meeting with my supervisor to fully discuss what my next steps and actions should be I felt "a bit confused and hesitant" about what I should decide to do.

In many ways I think it is important to model or practice what I teach, so I worked through a decision making model pretending that my situation was an ethical dilemma. "The model I decided to follow was the Canadian Psychological Association 10-step model". Through this decision making process I emphasized "justice for my research and all the athletes" who had already completed their participation in my research.

"In the end I decided to close my recruitment and re-define the specific boundaries for this specific case study. I think that emphasizing justice promot[ed] the greatest possible good and reflects my personal values and

integrity as a researcher.  It [was] also important for me to acknowledge that qualitative research is often emergent, that much to my frustration I can't control everything, and that this change might actually make my study 'better' in some ways".

## Reflective and Iterative Data Analysis

"There are some processes within qualitative research that are less exciting … transcribing …" and I was very fortunate that my Study 3 had funding available through my supervisor's SSHRC grant to hire a transcriber.  "I am so thankful for [name]", she was such an asset in getting the eighteen interviews initially transcribed and prepared.  Before providing audio files to the transcriber I went through a brief training session where I highlighted the important elements that I wanted included in the final transcripts.  "After [name] finished transcribing the first set of interviews we had a meeting to debrief.  During this meeting I highlighted what was done well and what I would like her to start doing and pay attention to moving forward."  After this meeting the remaining transcripts were well done and I reviewed them as they were completed.

As part of my data immersion processes, I listened to the audio recordings and carefully went through each transcript.

"While reviewing the transcripts I added details such as pauses, punctuation, fixed minor spelling errors, and worked to resolve any instances where the transcriber had written '(inaudible)'.  Following this review and cleaning the transcripts were e-mailed to respective participants for review and release."

In addition to reviewing the transcripts (by myself and the athletes) I listened to the audio recording several times "I basically just [kept] hitting the repeat button".  Relistening to the audio was really valuable in both familiarizing myself with the content of the interviews but also in learning about how the structure and language of the women helped to inform my purpose and question.  Throughout my data analysis I worked with both the written transcripts and the audio to fully describe and represent the data.  I knew I was immersed and "ready to jump into my analyses because I [felt] like I [could] hear the women speaking when I read the transcripts and I [knew] what they [were] going to say next".

"Case study can be so dynamic" and flexible adopting a range of methods and representation approaches (Creswell & Poth, 2018). "I am so glad that I [had] the chance to do another collective case study" because I was able to get creative with how I would conduct my analysis.

> "My analysis included some more typical analysis approaches like thematic analysis" but I also was able to step outside of what is often presented in published research "and approach my analysis in a way that I'd love to see in the literature by including a substantial holistic case description. I guess only time will tell though if my committee likes it though. No pressure right."

It was an amazing experience to play with different but parallel analysis approaches to emphasize both the collective voice and the individual voices within this case study research. "My approach might [have been] the same as in my M.Sc., but wow [did] I ever learn and develop new qualitative skills."


## Reflective Data Representation and Writing

Representing the collected data in Study 3 was an interesting task because "there [was] just so much data"; it is the good kind of problem to have. In my writing of the results section of Study 3 the holistic case description with three temporal units was presented very close to its original form. However, after receiving feedback from my supervisor and a couple of trusted peers "I made some major changes to how the section was introduced to better prepare the reader for a lengthy descriptive passage that has no direct quotations to highlight the 'collective' part of this collective case study". I knew this section was going to be perceived as different, for better or worse, but "I am really happy with how I was able to modify this written section so that the reader is excited about what is next rather than being confused or thinking I was off my rocker when writing".

In contrast, writing and representing "the thematic analysis was really hard because I started with 12 individual themes" that were generated. "Thankfully my supervisor and my lab group were willing to be 'critical friends' to help me sort through what to include" in my final dissertation. First, I met with my supervisor on two separate occasions to work through the results of my thematic analysis. "In our first meeting our focus was on clarity of each individual theme" and then in our second meeting we focused more on deciding what to include. These

meetings resulted in 7 clear themes that I then "asked the [SHE] lab group to critically review", their feedback revolved around the importance of flow, combining ideas or creating sub-themes, and making sure everything I present is key to my research question. "Thank goodness others in the lab [were] doing qualitative work".

After integrating the 'critical friend' feedback from my supervisor and my lab group I finished writing an excessively long thematic results section. "All I can say is thank-goodness for rounds of review and editing" because my next and close to final version of the themes was "basically a different document" and much improved. In the end the content presented in my dissertation "is only a fraction of the total data" but it is "all essential to the Study 3 and overall purposes and questions. While "I'm a bit sad that some information isn't included" I am confident that there will be ample opportunity for me to present, write, and even publish that additional unexpected data in the future "outside of my dissertation document that is already way too long".

## Reflective Conclusion

This Applied Reflective Research Reflexivity section has been a great opportunity for me to synthesize and summarize a long reflexivity document into a resource that highlights key elements of my processes and thoughts during Study 3. I am surprised by how nice it is to have added a layer of interpretation to my original thoughts and experiences. Maybe a task for future me is to evaluate this process and contribute a methods paper to the literature. This approach I believe has led to an Appendix that is not just lumped in at the end for my own benefit, but actively presents information that is in the benefit of the reader and those who are interested in how I went from proposal to end product in the final and qualitative study of my dissertation.

Appendix D.7: Study 3 Accountability Action Plan

This accountability plan was originally designed to facilitate a high-quality qualitative project. Accountability action plans are often applied in qualitative research studies to promote transparency regarding the researchers process similar to an audit trail (Creswell & Poth, 2018), with the addition of pre-planning the processes rather than simply documenting what happens as it happens. This action plan was used to assist me in several processes. First, this action plan assisted with identifying my biases regarding the topic area of Study 3 and highlighting my reflexive processes. Second, this action plan acted as a practical tool to make sure that the study design was best suited to address the research purpose and question (building on Study 1 and Study 2). Third, this action plan assisted in highlighting the protocols for data collection and analysis. Forth, the action plan was implemented to make sure the presented results and discussion points were authentically generated from the collected data. Further, this process helps to also highlight the methodological congruence within Study 3 and explain how Study 3 is aligned with Study 1 and Study 2. The accountability plan was initially developed to be flexible and to promote quality while also allowing the plan to adapt over time. Below is an overview of the actual accountability plan that was implemented, rather than the originally designed plan as the process did change and adapt throughout the research process.

**MEKA Study 3 Completed Accountability Action Plan**

**Step 1:**
- Write Part 1 of researcher reflexivity.
    - Highlight my personal exposure to the research topic for Study 3 and explicitly state any assumptions based on Study 1 and Study 2 findings that I hold regarding Study 3.
- Write full Study 3 proposal (not just the basic proposal that was included in my dissertation proposal).
    - Make sure that my experiences identified in Part 1 of my reflexivity are not the only elements focused on in Study 3 and that all elements address the study purpose as well as the overall dissertation research question.

- Make sure to identify the role of methodological congruence in Study 3.

**Step 2:**
- Write Part 2 of researcher reflexivity.
  - Highlight decisions made to align Study 3 with the overall dissertation research program.
  - Highlight what Study 3 adds that is unique.
- Write Study 3 interview guide #1 and #2.
  - Make sure that questions are generated that allow for emergent ideas, storytelling, and contextual description.
  - Crosscheck that the interview guides represent the study purposes rather than just my personal experiences.
  - Make sure that both interview guides reflect rigor and methodological congruence.
  - Have my supervisor (Dr. Ferguson) review all interview documents (including consent and exit forms) and provide feedback.
    - Make adjustments as needed based on comments and suggestions.

**Step 3:**
- Get input from the Sport Health and Exercise Psychology Lab regarding the two interview guides for Study 3 (7 members present).
  - Make adjustments to interview guides following feedback.
  - Follow up with 2 members regarding their feedback for clarification.
  - Finalize interview guides.

**Step 4:**
- Write Part 3 of researcher reflexivity.
  - Focus on preparing to enter the field.
- Make sure to double check that all my materials are conceptually aligned and will aid in addressing the Study 3 purpose and questions and the overall dissertation research question.

**Step 5:**

- Write Part 4 of research reflexivity.
    - Reflect on the data collection process and challenges.
    - Highlight decisions and adjustments made during this phase of the research process.
- Organize all audio files and prepare for transcription
    - Make sure the transcribing process and procedures are clear and all necessary paperwork is signed and submitted to ethics for the study transcriber (research assistant).
- Begin initial data analysis by reviewing audio and transcript files (repeat).
- Make notes and initial memos in the released transcripts (repeat).
- Identify initial codes and refine the boundaries of each code.
    - Write summaries of initial generated themes based on codes, memos, and margin notes.
        - Engage in critical reflection with supervisor
            - Agree upon and identify which thematic content to focus on and include in my dissertation document.
    - Modify and expand generated themes.
- Identify initial case descriptor elements.
    - Write the first draft of the holistic case description.

**Step 6:**

- Write Part 5 of researcher reflexivity.
    - Focus on the data analysis processes and steps (reflective).
    - Focus on how feedback was gathered regarding the generated themes and case description (constructive critical friend, reviewer, peer processes).
        - Supervisor feedback.
        - Feedback from Sport Health and Exercise Psychology Lab members specifically related to the themes generated.
- Review generated case description and themes to make sure that they are representative of the case and all data collected.

- Review generated case description and themes to make sure that they focus on highlighting and describing the study purpose and research question.
  - Highlighting what information was set aside – information that was collected that was not directly related to the current study (to be considered for other academic formats).

**Step 7:**
- Write full draft of Study 3 results.
  - Making sure that all information from the mundane to the profound is represented in the presented results section.
- Incorporate feedback on written document regarding format and clarity from supervisor.
  - Making sure that the intended meaning was not altered during revision.
    - Re-listened to all interview audio files to make sure meanings were not altered during revision.

**Step 8:**
- Provide full polished draft with heavily revised sections to supervisor.
  - Making sure to leave comment bubbles to indicate where I have formatting questions, want to make sure to get sections approved, or to indicate significant changes.
- Incorporate feedback on written document regarding format and clarity from supervisor.
  - Making sure that the intended meaning was not altered during revision.
  - Re-listened to all interview audio files to cross check for accuracy and representativeness of writing from the interviews.
    - Make sure meanings were not altered during revision.
    - Make sure all lists in the results sections are inclusive of all provided examples.